

Promoting Mind–Body Health in Schools

**Interventions for
Mental Health Professionals**

EDITED BY

Cheryl Maykel

AND **Melissa A. Bray**



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Promoting Mind–Body Health in Schools

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*For Al, Jack and Liza: Thank you for the time
and the constant reminder of what I'm working for.*

—CHERYL MAYKEL

*I would like to thank my husband, Bill, and my children,
Adeline, Will, Clark, John, Kit, and Joe, for their support
of my academic endeavors in school psychology.*

—MELISSA A. BRAY

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SERIES FOREWORD

Outside of their homes, children spend more time in schools than in any other setting. From tragedies such as Sandy Hook and Columbine to more hopeful developments such as the movement toward improved mental and physical health and academic achievement, there is an ongoing need for high-quality writing that speaks to ways in which children, families, and communities associated with schools worldwide can be supported through the application of sound psychological research, theory, and practice.

For the past several years, the American Psychological Association (APA) Books Program and APA Division 16 (School Psychology) have partnered to produce the Applying Psychology in the Schools Book Series. The mission of this series is to increase the visibility of the science, practice, and policy for children and adolescents in schools and communities. The result has been a strong collection of scholarly work that appeals not only to psychologists but also to individuals from all fields who have reason to seek and use what psychology has to offer in schools.

As editors of the book *Promoting Mind–Body Health in Schools*, Cheryl Maykel and Melissa Bray offer an up-to-date overview of various mind–body interventions to target stress reduction and wellness among students. They have gathered a group of outstanding scholars who write accessibly about these interventions, as well as conditions that may be targeted through mind–body techniques. The chapter authors comprehensively address considerations for implementing these interventions in schools, including family involvement, application to special populations, and treatment integrity. Cultural and developmental considerations are incorporated throughout the chapters. A unique lens is offered by considering the implementation of mind–body approaches through a three-tiered model.

Since its initiation, many individuals have made significant contributions to this book series. We would like to acknowledge the dedication of past series editors Sandra L. Christensen, Catherine Christo, Jan Hughes, R. Steve McCallum, David McIntosh, LeAdelle Phelps, Linda Reddy, Susan Sheridan, Christopher H. Skinner, David Shriberg, and Melissa Pearrow. Second, we also thank Linda Malnasi McCarter and the editorial team of APA Books for their work and support, as well as all of the people at APA Books who have worked behind the scenes to bring this book to fruition. Finally, we thank the editors and the chapter coauthors for their inspired vision and writing in the *Promoting Mind–Body Health in Schools*.

The leadership of Division 16 welcomes your comments about this volume, as well as your ideas for other topics that you would like to see explored in this series. To share your thoughts, please visit the Division 16 website at <https://www.apa.org/about/division/div16>.

—Michelle M. Perfect, PhD
Series Editor

Promoting Mind–Body Health in Schools

Introduction

Mind–Body Health in the Schools

Cheryl Maykel and Melissa A. Bray

Most school-aged youth experience a considerable amount of stress from academic pressures, relationships, and extracurricular commitments. Living in a heightened and prolonged state of arousal has a negative impact on an individual's overall well-being. In addition to the negative experience of feeling stressed in day-to-day life and the impact that has on an individual's functioning, chronic stress also wears on the body at the cellular level, essentially resulting in premature aging (Sleek, 2017) and increasing the individual's susceptibility to illness.

In particular, there are many internal and external influences on the health and wellness of developing youth. Engel's (1977) biopsychosocial model promotes an understanding of interactions between the biological aspects of the physical being and one's genetic heritage, the psychological aspects of one's mind, and social factors such as birth into a given culture, socioeconomic group, community, and family system. Each of these aspects of the self, and the interactions among them, impact the functioning and development of the individual throughout the life span.

In addition, the ecological systems theory of development (Bronfenbrenner, 1979) is helpful in conceptualizing how a child develops as part of multiple systems. For instance, a child is involved in reciprocal relationships with family members and peers that impact the child's development but that the child also impacts. The child's community and their parents' jobs are influenced by factors at the next level distal from the child, though there is still an indirect

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impact on the child's development. Beyond that, larger societal changes impact the community, which then influence the child, and all of these factors occur over time and throughout the child's life.

This thinking supports the study of mind–body health in that the individual should be viewed holistically; many factors contribute to positive development, just as many have to be considered when planning for intervention. All contexts and vantage points of the person are related; thus, the mind and body among other internal (e.g., cognitive, intellectual) and external (e.g., academic, occupational setting) systems interact and require coordination to achieve optimal functioning. All these influences affect a child's health and wellness, which impact school performance and overall success in many of life's arenas in the short and long term. Thus, school professionals, and in particular, school psychologists, have the opportunity and responsibility to intervene on behalf of positive youth development with all these factors in mind.

OVERVIEW OF THE BOOK

This book is intended to provide an overview of the current state of various mind–body interventions, as well as other practical considerations for the use of these techniques in the school setting, to address the growing influence of stressors on school-aged children. The primary target audience for the book is school psychologists; however, other mental health professionals who work in or outside the school setting, such as counselors and social workers, are also likely to benefit from the content. The book is divided into three sections. The first section focuses on broad considerations for delivering mind–body health interventions in schools. The second section covers multiple mind–body health interventions for various school-related issues including academic, behavioral, and socioemotional concerns. The third section of the book discusses the application of mind–body interventions with specific populations of students.

In the first section of the book, the reader can find such topics as home–school collaboration, treatment integrity, school-based health services, the impact of chronic illness from a neurodevelopmental perspective, self-care for school psychologists and related professionals, an overview of traditional Eastern mind–body approaches with consideration for use in the Western school setting, and a critical, yet important, discussion of best practice recommendations for the use of mind–body interventions in the school setting. These chapters are intended to provide additional topics for practitioners' consideration in the thoughtful, successful implementation of the interventions discussed in the second section of the book.

The second section of the book presents various mind–body interventions. Each intervention chapter focuses on a different mind–body approach and the benefits that have been derived from its use, as well as the current state

of the research on the use of this intervention and how it has been or might be applied in the school setting. You will note that the research support for several of these interventions is still in the early phases, and some critics will question the appropriateness of using various mind–body interventions in the school setting. Before rolling out any new intervention, the mindful practitioner will consider several factors ahead of time to determine the appropriateness of fit with the intervention, such as the age of the student(s), training consultees, and space and setting (see Chapter 7 for more details). Interventions in the second section are discussed through the lens of a tiered service delivery model with suggestions for how the intervention might be adapted for a universal, small group, or individual application, where appropriate. Most also include a case discussion that best exemplifies the use of that specific approach. The first three chapters discuss positive psychology, mindfulness, and mindful gratitude more broadly, whereas the remaining chapters cover specific interventions. These include relaxation and guided imagery, physical activity, yoga, expressive arts including music therapy, written emotional expression, video self-modeling, hypnosis, and emotional freedom techniques (“tapping”).

The interventions proposed in this book are intended to be used with students to address various academic, behavioral, socioemotional, or other concerns within the school building. School psychologists and other school-based professionals with mental health training are the most likely to implement or at least to oversee the use of these practices in the school setting. School psychologists and related professionals working with school-aged youth outside the traditional school setting might also use these approaches with their clients. Further, some interventions are also indicated as appropriate for use among school-based professionals themselves to reduce stress and promote overall improved health and wellness. To this end, Chapter 5 focuses on self-care for professionals.

The level of experience and training required to implement the techniques discussed within this book varies from one chapter to the next, but details on the preparation of the mental health professional are included in their respective chapters. For instance, the physical activities that are described in Chapter 12 could be led by a classroom teacher or paraprofessional—there is no formal training required as there is in the case of music therapy (Chapter 15). However, an individual in the school who is trained in data collection and analysis, such as the school psychologist, should oversee the implementation of any intervention to ensure that it is being provided as intended (see Chapter 2), as well as to facilitate progress monitoring. Similarly, the age group of students for whom a given approach might be more or less appropriate is also discussed within each of the intervention chapters.

In the third section of the book, readers will find chapters that focus on specific populations of students for whom the use of various mind–body approaches might be beneficial. These include yoga for students with eating disorders and cognitive behavior therapy as applied to emotional regulation, as well as mind–body considerations for sleep concerns, chronic pain, and trauma.

WHAT IS MIND–BODY HEALTH?

A discussion of what constitutes mind–body health can easily turn into a confusing, cyclical conversation in an area with seemingly no boundaries. In the beginning stages of proposing this book, we found ourselves rapt and beguiled in these types of conversations on many occasions. At one such point, we realized that made perfect sense because what we are trying to describe here is how just about everything is interconnected; no thoughts or bodily processes occur in isolation. The mind is significant in all aspects of living; it impacts our behavior, relationships, academic and occupational success, and various physical outcomes, among others. The mind can affect change in brain physiology that then changes behavior, thereby moderating the mental to physical connection (e.g., psychoneuroimmunology, which defines how psychological functioning interacts with both the nervous and immune systems; Smith, Richardson, Hoffman, & Pilkington, 2005). The mind can also be responsible for more direct psychological to physical changes, such as the impact glucose levels have on stress (Jacob et al., 2013). We do not yet fully understand the relationship between the mind and the body; we have not fully recognized all of the many ways these two aspects of the self interact or how this information could be used to promote health. New research is continuously being published in this area. At this point, it would not be possible to provide a comprehensive review of mind–body research because this area is essentially boundless. Our intention with this particular book is to focus on how we can use what we know at this point about mind–body interventions that can be applied in the school setting to positively influence students.

The term *mind–body* has taken on various nuanced meanings, all of which speak to the relationship between psychological and physical aspects of the individual. This understanding dates back to early philosophers writing about dualism and the relationship between mind and body. Mind–body health relates to the seamless interaction of the mind, or psyche, with the physical body to result in the overall functioning of the individual. In this book, our focus is on the use of the term to address either mind- or body-based concerns with either mind- or body-based interventions, such that the strategies described within this text are either psychological and have an impact on physical functioning or are physical strategies that impact psychological functioning.

With this understanding in mind, a psychological intervention affecting a psychological outcome, such as guided imagery for depression, would not be included in our use of the term *mind–body*. Similarly, although an intervention that is physical and has a physical outcome, such as running to improve heart health, might have some direct effects within the body, we are more interested in the effects that the physical activity would have on psychological functioning (e.g., Steca et al., 2013; see also Chapter 12, this volume). In addition, we recognize that there is an emerging area of research investigating

the physiological (e.g., neurotransmitters, hormones, immune indicators) implications that physical and psychological interventions have on both physical and psychological outcomes (Menzies, Lyon, Elswick, McCain, & Gray, 2014). In other words, the underlying complex physiological (e.g., endocrine system, brain–gut connection) and psychological (e.g., self-control, depression) moderating pathways that explain how these changes occur and that further explore the depths of the impact of various behaviors or interventions are only beginning to emerge in the research in recent years. These exciting areas of inquiry shed more light on the complexities and intricacies of the mind–body relationship. Thus, although we introduce these concepts, the book as a whole focuses on mind–body and body–mind interventions, as described here, that might be of interest to school-based practitioners and that can potentially be implemented in the school setting.

It is our hope that school-based mental health professionals will find this book informative in considering the use of various mind–body approaches with their students and that this book will encourage the responsible implementation of more mind–body practices in schools to benefit students, teachers, and the overall school climate. Many of the practices discussed in the following chapters can be easily taught to students at a young age, allowing them to take advantage of the benefits of a given practice throughout their lifetime with little to no cost, specialized materials, or additional outside intervention. In this way, this book holds a substantial amount of knowledge that can be easily shared with young people to help them help themselves as they encounter challenges throughout their development.

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BROAD CONSIDERATIONS FOR DELIVERING MIND-BODY HEALTH INTERVENTIONS IN SCHOOLS

1

Home-School Collaboration to Promote Mind-Body Health

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Awareness of the mind-body connection has existed for centuries. For approximately 300 years the world incorporated the mind-body connection in nearly every health care system. However, around the 17th century, a new dichotomy emerged; the Western world started to see the mind and body as two distinct entities. This distinction entailed treating the body as a kind of machine, complete with replaceable independent parts, without considering the connection to the mind. The approach had some benefits, acting as the foundation for advancements in surgery, trauma care, pharmaceuticals, and other areas of allopathic medicine. However, this approach minimized the scientific inquiry into humans' emotional and spiritual life. Furthermore, treatment protocols addressing health needs were also narrowed to a specific part of the body or behavior, with limited attention to the related mental states, such as thoughts, emotions, beliefs, attitudes, and images.

As we entered the 20th century, the view of the individual gradually started to change. Researchers began to use scientific approaches to demonstrate the complex link between the body and mind. Specifically, they demonstrated how the mind-body connection manifests both physically and chemically. For example, different mental states can positively or negatively affect biological functioning because the nervous, endocrine, and immune systems share a common chemical language, which allows constant and coordinated communication between the mind and body through hormonal and neurochemical messengers (Nikkheslat et al., 2015). Although there are different

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schools of thought when it comes to conceptualizing the mind and body connection, some argue that there is no distinction between the mind and body (*physicalism*). Others view the mind and body as two separate intimately connected components (Descartes's *dualism*) that function together. There is an increasing agreement across disciplines (e.g., health care, nursing, psychology, medicine) that both have to be understood and attended to when providing holistic care (Rentala, Fong, Nattala, Chan, & Konduru, 2015).

In recent years, there has been an increase in the literature documenting the medical and mental benefits of meditation, mindfulness training, yoga, and other mind–body practices.

Evidence has accumulated sufficiently for the American Academy of Pediatrics to have begun to develop what is expected to be a forthcoming policy statement on the use of mind–body methods in clinical practice. Systematic reviews of research on MBMB [mindfulness-based, mind–body methods] suggest that these methods can attenuate cognitive, behavioral and emotional symptoms of conditions like anxiety, ADHD [attention-deficit/hyperactivity disorder], and depression, can decrease physical pain, promote positive health behaviors and social functioning and increase school engagement and attendance. Purposeful moment-by-moment presence and self-awareness of one's breathing, body sensations, emotions, and/or thoughts in a nonjudgmental manner (e.g., mindfulness) is a common, cross-cutting component of most mind–body methods, like biofeedback, guided imagery, yoga, hypnosis, and meditation. (Bethell, Gombojav, Solloway, & Wissow, 2016, p. 141)

As such, practitioners in health care settings (e.g., integrated care, patient medical homes) have become reacquainted with the need to understand the mind–body connection. Educational systems are also following this interest given the coordinated care promoted in the Individuals With Disabilities Education Act (2004) and now through prevention and integrative health practices delivered in schools and to students (Milosavljevic, 2015; Pierce et al., 2017). Of note for school systems is the research showing the effectiveness of mind–body approaches that help students who struggle with behavioral, emotional, and mental issues (Bethell et al., 2016).

The mind–body connection approach assumes that an individual's beliefs, emotional state, memories, and habits influence his or her mental and physical health. Understanding a student's inner experiences (e.g., thinking and feelings) will inform school systems on how to create experiences that comprehensively promote academic and social growth. Alongside the primary influences of families and culture, schools play a central role in nurturing children's development by directly and indirectly teaching children how to function within society.

Comprehensive and sustainable enrichment of students' lives is possible through collaborative school and home efforts and communication between the two (*cf.* Council on School Health, 2013; The Sanctuary at Sedona, 2014). In this chapter, we present an overview of some of the tenets related to supporting a healthy mind and body connection, including recommendations for individual use of mind–body approaches and methods of collaboration between the school and the home.

COLLABORATIVE PARTNERSHIP IN NURTURING A HEALTHY BODY

Most educators and parents are aware that infant child development rests on the attainment of physical milestones that coincide with cognitive, social, and emotional development. However, as children age and show mastery of physical skills, there is less emphasis on the important connections between physical activities and learning. Indeed, recess is often discarded after elementary school and replaced by physical education classes (Railey, 2016), even though the American Academy of Pediatrics has extolled the benefits of unstructured physical activity as it is related to positive academic performance, as well as social, emotional, and physical health (Council on School Health, 2013). Data show that some schools tend to decrease access to recess more than others. For example, low socioeconomic status and urban areas are associated with fewer physical activity opportunities for children at school, and loss of recess can be used as a punishment for discipline infractions (Council on School Health, 2013; Lee, Burgeson, Fulton, & Spain, 2007; Parsad & Lewis, 2006). Many schools do not yet embrace the mind–body connections that facilitate learning. As such, there are two important questions to answer: (a) What might students’ bodies need in school that will help them learn effectively? and (b) How can we help schools realize and address those needs?

Even though schools may incorporate recess or physical education elements into their curriculum and some offer health courses, holistic wellness of the body is often not at the forefront of the education agenda. Holistic wellness requires cognitive engagement (e.g., students’ willingness and ability to take on the task at hand) and physical movement, physical and cognitive growth and development, biological maturation, motor development, healthy body weight, and healthy functioning body systems (e.g., cardiorespiratory system), among many other factors. As discussed, recess time and gym class contribute to holistic wellness of the body, yet allowances for some physical activity at school is not enough. Additional factors that contribute to a child’s physical development and bodily wellness include proper access to a nutritious diet, adequate amounts of sleep, and environments that are physically and psychologically safe. We argue that home–school collaborations are essential to developing a successful wellness plan.

Nutrition

Access to a nutritious, well-balanced diet is important for children to develop physically and cognitively. Schools have long been contributors to reducing hunger through the National School Lunch Program (NSLP), which was started in 1946 (U.S. Department of Agriculture, 2018). However, there is evidence of the program’s flaws, including public outrage because these lunches are identified as high- and empty-calorie meals (Poti, Slining, & Popkin, 2014) and as contributing to the high rates of obesity and health risks

in children in the United States (Centers for Disease Control and Prevention [CDC], 2017b). Also, studies examining NSLP reform efforts show more wasted “healthy” food even as more fruit and vegetable options have been offered (e.g., Cohen, Richardson, Parker, Catalano, & Rimm, 2014). Collaborative practices that engage schools and parents about nutritional needs include BAM! Body and Mind and Lunch Is in the Bag.

The BAM! Body and Mind website, aimed at children 9 to 12 years of age, provides nutrition information as well as stress management techniques and other important aspects of well-being. There is a “Dining Decisions” app that helps young people learn what types of food are healthy and what types of food they should consume in moderation (CDC, 2017a).

Lunch Is in the Bag, a multilevel behavioral intervention, helps parents support student health by encouraging them to pack more fruits, vegetables, and whole grains in their children’s lunch (Roberts-Gray et al., 2016). It provides nutrition information. Studies on the efficacy of the Lunch Is in the Bag intervention indicate a change in parents’ behavior in packing healthy sack lunches for their children. However, results also indicated that both before and after the intervention, parents often included chips or sweets in children’s lunches. Researchers noted that parents might pack items to appease their children’s sweet tooth, even though that may also mean sacrificing the nutritional content of the meal. These authors indicated that more research is needed to understand better what influences the decisions parents make regarding the food they give their children (Roberts-Gray et al., 2016).

Sleep

Functioning on less than optimal hours of sleep is viewed as a bragging right for adults in the fast-paced culture of the United States. The underlying cultural assumption is that less sleep means that this person must be either very productive and/or busy with enjoyable extracurricular activities. There is a limited focus on how detrimental it is to skimp on sleep. From a young age, people in the United States are socialized on how to plan a “busy” schedule for play dates, private lessons, camps, clubs, sports, and other activities that can cut into sleep time (Brown, Nobiling, Teufel, & Birch, 2011).

Even though there may not be a consensus regarding how much sleep is “enough” for children, researchers speculate that changes in sleep patterns may be related to later and later bedtimes but unchanging wake times. (Matricciani, Olds, & Petkov, 2012). A large-scale systematic review of worldwide research examining children’s sleep duration around the world found that over the last 103 years, sleep duration for children and adolescents has declined, about .75 minutes per year, and the United States is one of the regions showing decreases (Matricciani et al., 2012). Though deficits in sleep duration have been linked to many different physical and mental problems, researchers have suggested more studies need to be done to further clarify this linkage (Matricciani et al., 2012).

One longitudinal study found that male children who under- or overslept had an elevated mortality risk at any point during adulthood (Duggan, Reynolds, Kern, & Friedman, 2014). Reidy, Hamann, Inman, Johnson, and Brennan (2016) showed that children with decreased sleep exhibited greater reactivity in brain regions related to emotion and reward processing. Specifically, “sleep duration was inversely related to neural activation in response to emotional stimuli . . . decreased sleep was associated with greater activation to fearful expressions in the bilateral amygdala” (p. 59). Though this study had a small sample size, its findings are consistent with previous research and suggest far-reaching implications. Lack of sleep contributes to greater emotional reactivity for children, which has the potential to influence their well-being. “The impact of short sleep duration on brain responses to emotional stimuli may be both acute (related to the amount of sleep obtained the night before) and cumulative (related to average sleep durations over time)” (Reidy et al., 2016, p. 60). Researchers have highlighted the need for studies related to sleep duration and behavioral changes. It is reasonable to hypothesize that increased emotional reactivity in the brain due to a lack of sleep has the potential to influence behavior as well. Ultimately, the adults in a child’s life, including parents and school personnel, are responsible for supporting healthy sleeping patterns.

A collaborative practice that engages schools and parents in children’s sleep issues is the Sleep for Success program, which is delivered during regular instructional time over 6 weeks in 2-hour increments each week (Matricciani et al., 2012). Four areas are addressed: (a) sleep education for kids, (b) how to involve parents and the community, (c) the role of school personnel, and (d) the addressing of school policymakers. By using an experiential learning approach, students show an understanding of good sleep hygiene (e.g., good bedtime routines), which is designed to improve sleep behavior, as well as consider the consequences of inadequate sleep. Letters were sent home to parents outlining the activities in the Sleep for Success program, a timeline to plan for upcoming lessons, and topics to discuss at home, as well as “homework” activities. Parents and teachers attended informational sessions together. School personnel attended workshops covering the importance of pediatric sleep. Principals of the participating schools were interviewed to assess their knowledge of and attitude toward sleep; they were also encouraged to implement “sleep-friendly” practices at their school (i.e., examining workloads and extracurricular activities). A group of elementary students receiving the program increased their sleep, on average, by 18 minutes and also showed improved academic performance in English, mathematics, and physical education when compared with the control group (Gruber, Somerville, Bergmame, Fontil, & Paquin, 2016). The researchers asserted that “sleep deprivation in prepubertal children is likely to be caused by lifestyle habits and culturally normative bedtimes and thus may be addressed by sleep education programs that target lifestyle choices” (p. 93).

Safety

Emotional safety and physical safety are crucial factors for nurturing the health of the mind and body. However, U.S. schools are struggling to provide a sense of safety to all students; 20.8% of students report being bullied (U.S. Department of Education, 2016). Notably, those who bully may also be suffering; reports show perpetrating bullying to be associated with a diagnosis of depression, anxiety, or ADHD (Benedict, Vivier, & Gjelsvik, 2015).

Bullying comes in many forms, from verbal antagonistic comments either in person or online to manipulation, threats, and physical abuse, all of which can have negative emotional and physical impacts on the victim. A longitudinal study of middle schoolers in rural areas found that those who had been bullied (past, current, and chronic victims) had worse developmental outcomes than those who had not (Smokowski, Evans, & Cotter, 2014). Specifically, “current, past, and chronic physical/verbal bullying and cyberbullying victimization were related to lower levels of school satisfaction, perceived social support, and mental health” (Smokowski et al., 2014, p. 1040).

A collaborative practice that engages schools and parents in bullying prevention is the Friendly Schools Friendly Families (FSFF) program (Lester et al., 2017), which focuses on how family dynamics can contribute to perpetrating and/or being a victim of bullying. Educational material addresses parent–child communication, how parent actions may be imitated by children, how parent bullying attitudes and beliefs are transmitted to children, families’ normative standards about bullying, and how family management techniques and parenting style can affect child attitudes about bullying, as well as how feelings of connectedness and cohesion are related. There is a substantial commitment to families engaging in social and emotional skill development to relay to their children. This program considers how data show that fathers, more so than mothers, tell their children to respond aggressively if bullied. For fathers, in particular, the FSFF intervention positively affected their perception of their influence on their child’s responses (Lester et al., 2017).

COLLABORATIVE PARTNERSHIP IN NURTURING A HEALTHY MIND

Holistic wellness of the mind refers to an individual’s conscious experience of reality, thoughts, and feelings and an individual’s effectiveness at balancing stress while working to change unhelpful thoughts, for example. The primary focus in schools is providing an education, but much personal growth occurs above and beyond simply acquiring academic content and knowledge. Piaget’s concepts of assimilation and accommodation are useful when considering the development of a healthy mind: As a sense of morality, social awareness, reasoning, and logic develop, so does the child’s ability to think more abstractly and hypothetically, which requires active learning (McLeod, 2015; Piaget, 1952). Working toward holistic wellness of the mind can help mitigate stressors

in childhood and throughout adulthood. Given that children spend a large chunk of their waking hours at school, schools should be intentional in promoting a climate conducive to developing holistic wellness of the mind.

A meta-analysis of 213 school social and emotional learning programs indicated that these interventions result in increased social and emotional competencies, prosocial behavior, and reduced conduct problems, in addition to positive academic achievement, and positive attitudes about self, others, and school (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). These results are promising because they highlight that these programs can be effectively delivered by teachers, who can help to foster students' positive beliefs, healthy expression of emotions, developing memory, and healthy habits. Although it is beyond the scope of this chapter to discuss all types of beliefs that can influence the mind–body connection, the literature regarding body image is an obvious place to start.

Body Image

Body image encompasses beliefs about one's body. Body image can be influenced by our mood, perceived judgments by others that are directly stated (e.g., bullying or compliments), or implied influences (e.g., visual depictions of bodily standards in the media). In a highly mediated culture, young people are inundated with phony flawless images, which they may mistake as authentic and desirable. For young girls in the United States, this likely includes feeling pressure to be thin and valuing fair skin over darker skin. "Children's Internet games may depict both unrealistic appearance ideals and strict gender roles. If children internalize these messages, body image disturbance may result" (Slater, Halliwell, Jarman, & Gaskin, 2017, p. 2050). In 2017, Slater et al. found that 8- to 9-year-old girls who played an Internet game that focused on appearance experienced more body dissatisfaction than girls who played an appearance-neutral game. In addition, "although playing the appearance-focused game did not impact on what occupations girls *believed* they could do, it did impact on girls' career preferences, or what occupations they *wanted* to do" (p. 2055). In a study of adolescent boys, Walter and Shenaar-Golan (2017) found a significant positive association between subjective well-being and body image and, interestingly, found that the parent–adolescent relationship did not influence body image or subjective well-being. Michael et al. (2014) found that having nurturing fathers and harmonious peer relationships were inversely related to body image discrepancy (the perceived discrepancy between the ideal self and actual body size) for boys, and for girls, fear of negative peer evaluations was positively related to body image discrepancy. Authors also found that physical self-worth for both sexes was positively related to the same-sex parent's nurturance (Michael et al., 2014), meaning for boys, nurturance by the father was related to positive physical self-worth and likewise for girls and mothers. This underscores the importance of relationships and parental involvement when promoting

bodily well-being. Taken together, these results show how the discourse about bodies and appearance can affect more than how we feel about ourselves from moment to moment.

A collaborative practice that engages schools and parents in promoting a healthy body image is the Body Image in the Primary School curriculum (Halliwell et al., 2016), which involves six hour-long lessons addressing issues related to body image, including appreciating appearance diversity, celebrating healthy bodies, examining the influences of body image manipulations (e.g., advertising), peer pressure, and role models (identifying them based on valued qualities instead of appearance), in addition to personal feelings (e.g., how I feel about my looks). Results from a U.K. sample found increased self-esteem related to the body for girls, but not boys, when compared with the control group after the intervention and at a 3-month follow-up (Halliwell et al., 2016). Researchers identified homework and parent involvement as critical next steps.

Emotional States

Emotions include a felt experience (arousal) and a cognitive appraisal (thought about that feeling). The ability to identify, express, and regulate emotions are part of the developmental steps for children to master behavior control. A child's emotional state (current emotional experience) is heavily influenced by his or her family context and (school) environment.

For young children, it is often helpful for adults to provide labels for emotions to facilitate the child's discussions about what they are feeling. For example, "Remember when you saw Lucy take Sasha's toy? How do you think Sasha felt? What did her face tell you?" Demonstrating that an individual's actions are related to emotional experiences in the self and others is important. Children who can express their emotions and effectively manage emotions can also learn that emotions are temporary. There are many opportunities to discuss and process emotions with children, especially at school. In one study, researchers showed that children who better regulated their emotions demonstrated increased levels of academic motivation, engagement, and achievement (Kwon, Hanrahan, & Kupzyk, 2017).

A collaborative practice that engages schools and parents in promoting positive emotional states to support emotional development is an intervention adapted from mindfulness-based cognitive therapy that consisted of nine 90-minute weekly sessions (Semple, Droutman, & Reid, 2017). The sessions included (a) psychoeducation on discerning between thoughts, feelings, and body sensations and (b) practice in emotion-regulation relying on mindfulness training. Participants were coached on multisensory mind-body exercises (e.g., listening to segments of music and identifying feelings that were invoked, focusing on the breath and the sensations experienced). Techniques included using "breathing as an anchor in the present, inhibiting automatic response to emotion, changing the attitude toward thoughts, reflection about

values and engagement in actions, and defining constructive actions in distressful situations” (Deplus, Billieux, Scharff, & Philippot, 2016, p. 780). Sessions provided guided mindfulness practice so that young people became more aware of their emotional states to better respond to their own emotions. Participants were encouraged to practice mindfulness in everyday life.

Memory

There are different types of memory and numerous factors that can affect memory processes. An individual’s working memory, a part of short-term memory, allows information to be kept in mind before being discarded or moved into long-term memory. Working memory is “vital because it underpins abilities in many other areas such as reasoning, learning and comprehension” (Henry, 2012, p. 2). There is some evidence to suggest that mindfulness is positively associated with working memory in children and negatively associated with state anxiety (Natesh, Rajesh, & Nagendra, 2014). Researchers concluded that higher order cognitive processes are related to mindfulness (Natesh et al., 2014, p. 310). In a study of children from Hong Kong with an autism spectrum disorder, it was found that engaging in the Chinese mind–body practice of Nei-Gong for 1 month increased memory retrieval, enhancing neurocognitive processes and functioning (Chan, Han, Sze, & Lau, 2015). Furthermore, mindful awareness was found to be positively associated with the inhibitory control and working memory processes of executive functioning but not cognitive flexibility (Riggs, Black, & Ritt-Olson, 2015). A mindfulness intervention implemented in some elementary schools yielded improvements in student ratings for paying attention and self-control in addition to improved participation and showing care and respect for others (Black & Fernando, 2014). Working to be better in tune with oneself and in the present moment seems to have the potential for neurological benefits. In Black and Fernando’s (2014) study, mindful practices included how to apply mindfulness while taking tests.

MIND–BODY PRACTICES FOR HOME AND SCHOOL

Although there is not a universal definition for mind–body approaches or mindfulness practices, the following explanation is useful: “Mind–body exercise refers to a form of exercise that combines body movement, deep breathing and meditation to improve overall health. Typical mind–body exercises include yoga, tai chi and qigong” (Wang, Seo, & Geib, 2017, p. 132). Activities often involve a focus of attention (e.g., on repetitive a word, sound, or breath) and asking participants to adopt a passive attitude toward intrusive thoughts. It is acknowledged that there is a degree of subjectivity and variability regarding the implementation of mind–body approaches, and many factors, such as the quality of the facilitator, may influence the experience and subsequent

outcomes. There is a paucity of research regarding the usefulness of the practices being delivered in schools.

Yoga

Yoga refers to the union of the individual consciousness with the universal consciousness. It is a holistic system of practices that includes multiple techniques, comprising physical postures, breathing, deep relaxation, and meditation. It is described as a physical and/or mental exercise that is used to reverse the ordinary outward flow of energy and consciousness to inner awareness. The practice of yoga is an exercise in coming to know the essence of oneself; the westernized version of yoga centers on the use of poses, balance, exercise, and peace finding, but there are many other systems of yoga. *Hatha yoga* uses a system of physical postures aimed at purifying the body, providing one with awareness and control over internal states. *Karma yoga* focuses on selfless service to others, without attachment to the results of those acts so as to gain an understanding of a new part of one's self; the practice of this type of yoga involves being aware of what we experience today, which is created by our actions in the past (e.g., self-transcending action). *Mantra yoga* centers one's consciousness through the repetition of certain universal root-word sounds that are meant to represent a particular aspect of spirit. *Bhakti yoga* focuses the mind on an all-surrendering devotion through which one strives to see and love the divinity in everything. *Jana (gyana) yoga* focuses the mind on the path of wisdom, which emphasizes the application of discriminative intelligence to achieve spiritual liberation. *Raja yoga*, known as the royal path of yoga, combines the essence of the previously mentioned methods.

Research on the application of yoga in schools has grown exponentially over the past 5 to 10 years, and although the results are still preliminary, scientists have suggested that school-based yoga cultivates competencies in mind-body awareness, self-regulation, and physical fitness, which are reported to promote improved behavior, mental health, and performance of students (Benavides & Caballero, 2009; Butzer et al., 2015; Eastman-Mueller, Wilson, Jung, Kimura, & Tarrant, 2013; Wang & Hagins, 2016). School-based yoga is aimed at helping students learn how to pay attention to the relationship between their mind and body. Results show that school-based yoga is associated with improved academic achievement and classroom behavior (Butzer et al., 2015; Sibinga, Webb, Ghazarian, & Ellen, 2016). A systematic review of nine randomized controlled studies implementing yoga interventions in school settings reported small to medium effect sizes for improving mood, memory, and self-esteem and decreasing tension and anxiety as measured by the Profile of Mood States scale (Ferreira-Vorkapic et al., 2015). Given these initial results, researchers have called for greater standardization of practices to determine what types of yoga are best for children. Taken together, families are encouraged to suggest to teachers and other school personnel strategies, including yoga, that are useful for their child. Parent groups may consider

advocacy efforts to increase access to yoga in school. School officials are particularly motivated by practices that show measurable outcomes; as such, being open to and requesting an evaluation of their students' responses to yoga can help clarify how it can be used in schools.

Meditation

Meditation is a distinct and separate practice centering on mental relaxation and concentration that can be incorporated into yoga. Its practice focuses an individual's attention on his or her breath and an awareness of his or her thoughts. The process uses the mind as the primary source of relaxation, connection, and self-learning. The benefits of meditation include relieving stress, lowering high blood pressure and tension-related pain, and improving one's mood, alertness, and energy. There are several meditative techniques, including mindfulness meditation, reflective meditation, mantra meditation, and focused and visualization meditation. "Research into school meditation programmes is still in its infancy" (Waters, Barsky, Ridd, & Allen, 2015, p. 120), but anecdotal data have suggested that meditation interventions in schools increase well-being and reduce negative outcomes. Overall, Waters et al. (2015) concluded that meditation practices are shown to have small but significant effects on well-being and social competence, though there is not enough evidence regarding academic achievement to warrant strong conclusions (p. 120).

Stress Management

The Center on the Developing Child at Harvard University (2009) asserted that "extensive research on the biology of stress now shows that healthy development can be derailed by excessive or prolonged activation of stress response systems in the body and brain" (para. 1). This is known as *toxic stress*. It also pointed out that gaining the skills to deal with adversity is integral to healthy child development. A study looking at kindergarteners' perceptions of challenges in school using the Pictorial Measure of School Stress and Wellbeing found that some of the personal challenges children dealt with at school were expectations related to independence and self-regulation (Harrison & Murray, 2015). Specifically, going to the bathroom alone was one of those challenges, with up to 50% of children in the study reporting feeling negative about this experience, explaining that the anxiety was related to expectations of independence or conflict with other students. An interpersonal challenge identified in the study was watching or joining a group of playing children. Some institutional-related challenges mentioned were negative feelings related to working at desks, which some labeled as boring. Results suggested that even very young children can identify situations they find challenging, and learning to deal with challenges to mitigate potential stress should start early.

A study investigating the effects of a stress management intervention using deep and diaphragmatic breathing, movements and stretching (to aid in focusing), and guided imagery with elementary school children found that the intervention group significantly benefited after the intervention at 1-year follow-up by exhibiting decreases in anxiety and heart rate variability (Bothe, Grignon, & Olness, 2014). The intervention consisted of a daily 10-minute stress management session led by the teacher for 4 months. Though replication of this study is needed, it points to how even a short intervention incorporated into daily routines can make a positive difference. Such techniques could be implemented in the home as well.

Attention

Much of the discussion of children's attention and their ability to focus centers on comparisons of children with and without ADHD. Subcomponents of these interventions include the silent game, focusing on the breath, noticing the self by attending to tastes in the mouth, and a conscious eating exercise. As reported previously, mindfulness-based interventions have been shown to increase attending behaviors in elementary school children (Wilson & Dixon, 2010) as reported by teachers (Crescentini, Capurso, Furlan, & Fabbro, 2016). Furthermore, consistency and collaboration between home and school are key elements to success for children with diverse needs, such as those with ADHD (Nahmias, 1995).

COLLABORATION BETWEEN HOME AND SCHOOL IN IMPLEMENTING MIND-BODY PRACTICE

A review of empirical studies conducted in the United States supports the efficacy of home-school collaboration to bring about significant improvements for all parties involved, which includes desired outcomes in academic performance and other school-related behavior (Cox, 2005). More specifically, complementary and coordinated interventions were effective, as were interventions that used a mutual exchange of information between families and schools; although interventions with one-way school-to-home communication were also effective (Cox, 2005). Indeed, evidence has suggested that increasing the well-being of children, and even attenuating the possible deleterious effects of adverse childhood experiences, likely includes integrated efforts, which include educational and family settings (Bethell et al., 2016). Collaboration between schools and homes is beneficial when "institutions promote the educational competencies and resources of parents" (Dusi, 2012, p. 28).

Although collaboration presents an ideal scenario, we recognize that collaboration may be difficult due to the complex nature of the relationship between families and schools (Dusi, 2012) and because of differing values and expectations. For example, cultural and other differences (e.g., age, race,

ethnicity, gender, disability status, and the intersectionality of these) should be examined, attended to, and respected. Not all families will expect the same types of communications and interventions between the home and the school. Some parents may welcome instruction regarding mindfulness-based practices and want a step-by-step “how-to” of these practices, whereas other parents may find these suggestions intrusive or against their religious beliefs. Culturally sensitive communication is required in the school system’s interactions with families. Being cognizant of cultural differences will help to create a culture of trust and mutual collaboration between the home and the school, which will greatly help with consistency and the well-being of students.

CONCLUSION

Though a fair amount of the research on mindfulness practices comes from preliminary studies with small sample sizes that require replication, initial results have suggested that these approaches show promise and should continue to be evaluated. At present, it appears that interventions need not be lengthy and can be implemented in both the school and at home. Simply carving out time for a child to breathe deeply and engage in quiet time where they notice thoughts and feelings can help children improve academic and social behaviors. As more data are collected, the partnership between home and school has to remain a priority.

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2

Treatment Integrity in School-Based Interventions

Assessing and Supporting Teacher Intervention Implementation

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Schools are an important context for promoting healthy and adaptive behavior. Students with poor emotion regulation skills are more likely to have worse health outcomes when they are exposed to stressful experiences (Cloitre et al., 2019), and research has consistently found that students' physical and behavioral health are closely related to their academic performance (DiGennaro, Martens, & Kleinmann, 2007; Erwin, Fedewa, Beighle, & Ahn, 2012; Fryling, Wallace, & Yassine, 2012). Thus, the widespread adoption of *multitiered systems of support* (MTSS), an empirical framework for integrating the provision of academic and behavioral interventions to students, is not surprising. MTSS, such as Response to Intervention and positive behavior interventions and supports, often operate in tandem and provide an organizing structure for schools to identify students with needs beyond those addressed by universal practices and support them with increasingly intensive and targeted interventions. However, the use of evidence-based interventions alone does not guarantee the widespread, effective implementation of them (Sanetti, Kratochwill, & Long, 2013).

Treatment integrity (TI) has been defined as the extent to which an intervention or practice is implemented as intended (Gresham, 1989). TI, also often referred to as *treatment fidelity* or *intervention plan implementation*, is critical to the success of mind–body interventions in schools because their promise cannot be realized if they are not implemented according to how they were designed and tested. For example, mindfulness-based interventions often

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include breathing exercises to promote body awareness. A teacher who simply reads the exercise from a manual without monitoring for student engagement may be less likely to see expected outcomes. Furthermore, TI data are necessary for evaluating the effectiveness of mind–body interventions because evidence-based intervention in schools is grounded on the assumption that changes in student outcomes are directly related to intervention efforts (Sanetti & Kratochwill, 2009; Shadish, Cook, & Campbell, 2002). Considering the widespread adoption of multitiered systems of intervention delivery, the measurement of TI has become essential (Noell & Gansle, 2006).

Making accurate data-based decisions is at the core of all effective MTSS. Under these models of service delivery, student programming and services are grouped into tiers with high-quality school-wide programming at the universal tier (i.e., Tier 1) and increasingly intensive and targeted interventions at the following tiers (i.e., Tier 2, Tier 3). As discussed by Noell and Gansle (2006), even a well-designed MTSS (e.g., one with universal screening, appropriate progress monitoring, and clear decision rules) can be undermined by poor TI, resulting in the failure to deliver appropriate interventions when important student needs have been identified. In addition, poor TI leads to the sub-optimal use of school resources such that more intensive and costly interventions are delivered when lower intensity, less costly ones would have been effective. Given the emphasis on accountability in education decision making as mandated under the Individuals With Disabilities Education Improvement Act (2004), it is also legally important that educators can demonstrate that student interventions were conducted with fidelity. For these reasons, it is critical that TI is monitored and supported for all school-based interventions, including mind–body interventions.

MEASURING TREATMENT INTEGRITY

Historically, TI has been defined and measured by assessing how many of the discrete and observable intervention components were implemented correctly (Gresham, 1989). This measurement reflects the degree of treatment adherence and supplies a summary of the proportion of intervention components that were implemented as intended (Gresham, 2014). In more recent years, TI has been conceptualized as a complex construct that is multidimensional (DiGennaro & Coddling, 2014; Sanetti & Kratochwill, 2009). Dane and Schneider (1998) proposed that TI can be parsed into five main dimensions: (a) *adherence*, the extent to which intervention components are implemented as planned; (b) *dosage or exposure*, the amount of an intervention the participant receives or is exposed to (e.g., the number of intervention sessions the participant was present for and the duration of those sessions); (c) *intervention differentiation*, the extent to which the intervention is different from typical services or an alternative intervention; (d) *quality*, the qualitative aspects of

intervention implementation, such as implementer enthusiasm and skill in delivery; and (e) *participant responsiveness*, the extent to which the participant actively engaged with the intervention. Given the complexity of this multi-dimensional conceptualization, Power et al. (2005) organized the dimensions of integrity under two broad categories for measurement: content and process. *Content dimensions* capture how much of an intervention was implemented and include adherence, dosage or exposure, and intervention differentiation. *Process dimensions* capture how well an intervention was implemented and include quality and participant responsiveness.

When measuring TI, adherence is an essential dimension to include. Strong and extensive evidence has shown that the degree of treatment adherence affects the outcomes obtained in intervention efforts (Durlak & DuPre, 2008), and without measuring adherence, the other dimensions are less meaningful (Schulte, Easton, & Parker, 2009). However, there are some initial research findings that have provided evidence that discrete dimensions of TI may differentially predict student outcomes (Hirschstein, Edstrom, Frey, Snell, & MacKenzie, 2007), specifically that low levels of TI in other dimensions can impede positive student outcomes even when treatment adherence is high (Sanetti & Fallon, 2011). Although treatment adherence has been the primary focus of TI measurement to date, it has been recommended that at least one estimate of both intervention content and process be assessed (Power et al., 2005). Developments in the construction of feasible and valid measures of TI are still emerging (e.g., Collier-Meek, Fallon, Sanetti, & Maggin, 2013). However, Long and Bryne (2015) proposed the following three, concrete steps for the construction of your own measures of TI, along with some basic guidelines for following current best practices: choose the assessment method, define the intervention components and choose response format, and determine the appropriate frequency of data collection.

Step 1: Choose the Assessment Method

The first step in designing your own TI measure is to determine what dimensions of TI are important to monitor and what assessment method is most feasible and appropriate. In general, for Tier 1, one estimate of intervention content should be monitored at a minimum. Most frequently, this would be treatment adherence given the extensive evidence demonstrating its significant positive relationship with intervention outcomes and the fact that data on other dimensions are less meaningful and informative without adherence data (Schulte et al., 2009). However, on occasion, it may be impractical to gain adherence data across the school; thus, dosage or exposure may be selected. In such a case, student attendance and performance data may indicate classrooms where the universal programming is failing to produce desired results. As an example, if your school is implementing a universal body–mind intervention, such as movement activities to learn academic content with brief exercise breaks (see Savina, Garrity, Kenny, & Doerr, 2016),

classrooms that display notable proportions of students who are not reaping the expected benefits in health, cognition, and academic performance should be examined in greater detail. Either multiple students are struggling due to implementation challenges, or certain classrooms have heightened student needs. In both cases, follow-up support for the teacher and/or students is warranted.

For Tiers 2 and 3, monitoring more than one dimension of TI is advisable (Barnett, Hawkins, & Lentz, 2011; Sanetti & Fallon, 2011). For Tier 2 interventions, the most relevant dimensions are often treatment adherence and dosage or exposure because these dimensions provide the necessary information for accurate data-based decision making. For Tier 3 interventions, it is optimal to gain estimates of both intervention content and process. Thus, in addition to monitoring treatment adherence and dosage or exposure, it will be important to capture how well the intervention is being implemented either through assessment of the implementer's skill in delivery or his or her ability to maximize student participation in the intervention. In general, intervention differentiation only has to be measured if there are concerns that the selected mind-body intervention lacks distinction from current universal, selected, or indicated practices. The larger the shift (or experienced difference) between practices, the more likely an improvement in student outcomes will be observed (Long, Sanetti, Lark, & Connolly, 2018).

Three common TI assessment methods are direct observation, self-report, and permanent products (Noell & Gansle, 2014a). Direct observation is often considered the most comprehensive because it is amendable to a variety of interventions and contexts, can capture multiple dimensions of TI, and generally has less inference compared with indirect measures (e.g., rating scales; Noell, 2010). Direct observations are a systematic process in which implementation is observed and directly reported on. However, direct observations are resource intensive because they require additional personnel and their time. Also, the presence of an observer has the potential to alter the performance of the implementer (Noell, 2010).

Self-reports are another highly flexible TI monitoring procedure that can be designed for almost any intervention. They can be easily administered, allowing for high frequencies of reporting, and can measure multiple dimensions of TI (e.g., adherence and dosage). However, people often overreport their performance, especially when data are collected on a weekly or monthly basis (Noell et al., 2005). Therefore, self-report results should be considered cautiously but may be useful as one component of a comprehensive assessment plan.

TI can also be assessed through permanent products (Noell, 2010), a procedure in which products inherently created during the intervention implementation are used to monitor TI (e.g., student self-monitoring forms). The two primary benefits of permanent products are that TI can be evaluated with minimal reactivity and there is no additional responsibility for the interventionist or an observer to monitor integrity levels (Lane, Bocian, MacMillan,

& Gresham, 2004). However, TI monitoring assessment with permanent products can be limited because not every intervention step (or intervention) will lend itself to the creation of permanent products. Table 2.1 summarizes the strengths of and considerations for these assessment procedures.

In determining an appropriate TI assessment procedure, it is important to balance the need to develop an accurate and useful procedure with feasibility. The use of multisource, multimethod assessment procedures is recommended (e.g., daily self-reports and weekly direct observations; Power et al., 2005). However, the reality is that schools have limited resources. Given this, the use of a single measurement procedure may be the most efficient and effective method for monitoring TI for many intervention contexts in schools.

Step 2: Define the Intervention Components and Choose the Response Format

Regardless of the TI assessment method, its validity is undermined if it has poor accuracy. Thus, it is vital that all evaluation criteria are defined in observable and measurable terms. This is done by first dividing the intervention into discrete steps and organizing those steps in the correct order of implementation (Long & Bryrne, 2015). Each defined step should identify all content (e.g., materials, duration) and process dimensions (e.g., quality, participant responsiveness) that are necessary. It is important that the delineated steps are meaningful to the intervention's effectiveness, but they should not be too specific nor too broad (Gresham, 1989). It may also be appropriate to include steps pertaining to preparing for implementation, scheduling of delivery, and concluding the intervention (e.g., administering progress monitoring measures).

Once all of the intervention steps have been explicitly defined, a response format can be chosen that will allow for a meaningful summary of the TI data. Common response formats to indicate whether a step has been completed as intended include using *yes* or *no* on a checklist, ratings on a Likert-type scale, and multiple choice answers. Although most intervention steps can be captured using a binary *yes/no* format, it can be limiting in how much information it provides about the degree of implementation and process dimensions (e.g., quality; Long & Bryrne, 2015). Response formats such as Likert-type scales and multiple choice allow for a more nuanced evaluation of TI because they can indicate partial step completion and place implementation on a continuum (e.g., how fluent was the teacher in leading students through a mind-body intervention technique such as a body scan; Sanetti, Fallon, & Collier-Meek, 2011). It is important to consider whether using a *yes/no* response is appropriate for measuring TI or whether a more nuanced response that attends to other TI dimensions is needed. Such decisions should be informed by referring to the theoretical basis of the intervention, which will point to the critical components of implementation and highlight the mechanism for student change (Gottfredson, 1984).

TABLE 2.1. Research-Supported Treatment Integrity Assessment Strategies

| Strategy | What is it? | Strengths | Limitations |
|--------------------|--|--|---|
| Direct observation | A qualified individual directly and systematically observes the implementation of an intervention plan and then rates the extent to which the implementer completed specific intervention steps. | <p>Can be used for most interventions.</p> <p>Can readily gather multiple dimensions of treatment integrity.</p> <p>Most direct assessment (i.e., least inference) and most strongly related to teacher and student outcomes.</p> | <p>Requires an observer and can be time intensive.</p> <p>Implementers may act differently in the presence of an observer.</p> <p>May not be able to observe an entire intervention because they often occur multiple times throughout the day or in multiple settings.</p> |
| Self-report | An implementer or intervention recipient rates the extent of implementation of the intervention steps using a checklist or form during or after an intervention session. | <p>Less resource intensive—can be quickly completed during or after a session.</p> <p>Can be used as a self-monitoring tool for teachers.</p> <p>Can measure multiple dimensions of treatment integrity (i.e., adherence, quality, and dosage).</p> | <p>Intervention implementers tend to overestimate their implementation levels.</p> <p>Intervention implementers do not always consistently complete these measures.</p> |
| Permanent product | Review products are naturally created during implementation and are used to determine the degree to which the intervention steps were implemented with integrity. | <p>Less resource intensive—no need for an observer, and data is generated without additional effort from the implementer.</p> <p>Data collection occurs with minimal reactivity (i.e., changes in behavior due to observation).</p> <p>Can sample a large number of occasions of intervention.</p> | <p>Many components of interventions may not naturally result in permanent products.</p> <p>In most cases, limited to rating treatment adherence.</p> |

Note. Content for this table was compiled from Noell and Gansle (2014a).

Step 3: Determine the Appropriate Frequency of Data Collection

An appropriate schedule of data collection must be defined as part of the overall TI assessment procedure. Research has found that educators often fall below acceptable TI levels within just a few days of initial implementation (Noell et al., 2005; Sanetti, Fallon, & Collier-Meek, 2013). Thus, it is particularly important that frequent assessments of TI are conducted (e.g., one to three times per week) during the initial deployment of an intervention (Long & Bryrne, 2015). Once an implementer has demonstrated consistent mastery of the intervention delivery, it is appropriate to reduce the frequency of assessments to random, infrequent checks of integrity. The goal is to sample enough implementation data to adequately evaluate the maintenance of treatment integrity during an intervention period.

The frequency of data collection should also be informed by the frequency of intervention delivery and the type of decisions that will be made based on the intervention data. The more frequently an intervention is delivered, the more often it has to be monitored to ensure it is being delivered with adequate integrity. Second, when making high-stakes decisions (e.g., a child is being evaluated for special education services), frequent TI assessments must be conducted to ensure services are being provided as intended before making any decision (Chafouleas, Riley-Tillman, & Sugai, 2007). For frequently delivered interventions and situations in which high-stakes decisions will be made, it may be advisable to assess and review TI data for each delivery (Sanetti et al., 2011), whereas it may be appropriate to review integrity data every few days of the week or weekly in most other cases. Again, what is critical is that there is a representative enough sample of implementation data available for the data to be deemed reliable and useful for decision making.

SUPPORTING TREATMENT INTEGRITY

Implementation is challenging. Research results have consistently found that in the absence of systematic implementation support, the majority of teachers struggle to maintain high levels of TI (i.e., 80% or greater) within just a few days of intervention training (Noell, Witt, Gilbertson, Ranier, & Freeland, 1997; Sanetti, Fallon, & Collier-Meek, 2013). This is concerning because low levels of TI greatly increase the probability of diminished or unattained student outcomes (DiGennaro et al., 2007; Fryling et al., 2012). Given this established relationship between TI and intervention effectiveness, researchers have developed and evaluated several strategies to support educators' implementation (e.g., Dart, Cook, Collins, Gresham, & Chenier, 2012; Noell et al., 2000; Sanetti, Kratochwill, & Long, 2013). Although an in-depth discussion of each implementation support strategy is beyond the scope of this chapter, a brief overview of those researched and readily accessible is provided in Table 2.2. Each of the listed strategies has demonstrated favorable outcomes when applied to improving teachers' TI.

TABLE 2.2. Research-Supported Implementation Supports

| Implementation support | Suggested tier | Ongoing or time limited | Description |
|---|----------------|-------------------------|---|
| Direct training ^a | 1 | Time limited | Provision of intervention instruction, modeling, participant practice, and feedback (Fallon, Kurtz, & Mueller, 2018). |
| Test-driving interventions | 1 | Time limited | Teachers receive multiple intervention options and opportunities to implement each intervention and choose one for continued implementation (Dart, Cook, Collins, Gresham, & Chenier, 2012). |
| Commitment emphasis | 1 | Time limited | Prior to implementation, a consultant reviews implementation importance, difficulties in engaging in behavior change, and potential self-support strategies (Noell, Volz, Henderson, & Williams, 2017). |
| Goal setting | 1 | Time limited | Consultative meeting to discuss current levels of teacher performance and collaboration to develop a specific, attainable goal (Cohrs, Shriver, Burke, & Allen, 2016). |
| Implementation planning | 2 | Time limited | Consultation session in which a review of the procedural details of intervention implementation and troubleshooting of implementation barriers is conducted (Sanetti, Kratochwill, & Long, 2013). |
| Intervention script/self-monitoring checklist | 2 | Ongoing | Self-monitoring materials in which intervention procedures and verbal statements are delineated into steps on which a teacher records their intervention implementation (Ehrhardt, Barnett, Lentz, Stollar, & Reifin, 1996; Oliver, Wehby, & Nelson, 2015). |
| Prompting | 2 | Ongoing | Use of reminders in vivo or immediately before implementation to encourage and assist intervention implementation (Hrydowy, Stokes, & Martin, 1984). |

TABLE 2.2. (Continued)

| Implementation support | Suggested tier | Ongoing or time limited | Description |
|-----------------------------------|----------------|-------------------------|--|
| Performance feedback ^a | 3 | Ongoing | Monitoring intervention-related skills and providing specific feedback to the implementer about the accuracy or quality of his or her implementation behaviors (Noell et al., 2005). |
| Video self-monitoring | 3 | Ongoing | Teachers review recordings of their intervention implementation (Bishop, Snyder, & Crow, 2015). |
| Coaching | 3 | Ongoing | Use of various support activities (e.g., observation, modeling) and the social relationship between the coach and the teacher to promote teacher implementation of evidence-based practices (Johnson, Pas, Bradshaw, & Jalongo, 2018). |

Note. ^aMeets criteria for “evidence-based” designation (e.g., a minimum of five single-case design studies), as defined by What Works Clearinghouse (2014).

In general, implementation support strategies developed for use in schools fall under two broad categories: (a) ongoing supports that are provided to teachers or implementers continually until some determined end criterion is met and (b) time-limited supports that are designed to be delivered within a pre constrained period. Regardless of the evidence-based intervention selected, delivery of implementation supports beyond the typical provision of in-service training is a necessity. Summarizing several years of systematic research on training in public schools, Joyce and Showers (2002) demonstrated that the usual professional development seminars supplied to educators (i.e., those consisting of an overview of theory, description or demonstration of intervention skills or practices, and in-training practice) resulted in only modest gains in knowledge and no demonstrable transfer of skills to the classroom.

Time-Limited Support Strategies

Time-limited implementation support strategies are those that are provided during predetermined meetings. These supports often require only one to two sessions between a school psychologist and implementer, thus requiring less time from teachers and supporting personnel compared with ongoing support strategies. These reduced time requirements may also make these strategies more feasible for some schools in which large numbers of teachers require basic support. Implementation research in education has suggested that the following time-limited implementation support strategies exhibit

the most promise: (a) direct training procedures (Fallon, Kurtz, & Mueller, 2018), (b) detailed planning regarding intervention implementation (e.g., Sanetti, Collier-Meek, Long, Kim, & Kratochwill, 2014; Sanetti, Kratochwill, & Long, 2013), and (c) commitment emphasis (Noell, Volz, Henderson, & Williams, 2017).

Significant research on time-limited support strategies has focused on intervention training procedures, specifically direct training procedures (Fallon et al., 2018). Indirect training is common in schools and describes procedures in which implementers receive verbal and/or written instructions of intervention components but are not provided with the opportunity to practice or receive feedback (Sterling-Turner, Watson, & Moore, 2002). In contrast, direct training is interactive, using modeling and rehearsal and role-playing so that educators can observe exemplary implementation and practice their delivery of various intervention-related skills with feedback (Fallon et al., 2018). Although direct training tends to be more time intensive, the evidence suggests that this training is much more effective than indirect methods for promoting teachers' TI (Collier-Meek, Sanetti, & Boyle, 2016; Sterling-Turner, Watson, Wildmon, Watkins, & Little, 2001).

More recently, evidence for implementation planning as a resource-efficient, time-limited support strategy has been emerging (Sanetti et al., 2014; Sanetti, Kratochwill, & Long, 2013; Sanetti, Williamson, Long, & Kratochwill, 2018). Implementation planning is conducted during a single meeting between a school psychologist and a consultee and consists of two parts: action and coping planning (Sanetti, Kratochwill, & Long, 2013). The goal of *action planning* is to examine the fit between the intervention and context, as well as to identify the specifics of implementation. The consultant and consultee work collaboratively to consider whether any modifications to implementation steps are necessary (without compromising the intervention's effectiveness) and then plan the logistics of implementation (e.g., when, duration, materials). This is followed by *coping planning*, whereby the consultant and consultee identify potential barriers to successful and consistent intervention implementation and generate strategies to resolve those barriers (Sanetti et al., 2018).

Another time-limited support strategy with emerging evidence is *commitment emphasis*. Commitment emphasis is positioned as an antecedent implementation support strategy that immediately follows intervention training. During the commitment emphasis procedure, the consultant and teacher discuss (a) the importance of the commitment to implement the intervention to the student and his parent(s), (b) the frequency with which people are often unable to carry out commitments due to competing demands or habits, (c) the necessity to implement the intervention as designed to evaluate its utility, (d) the consequences of not implementing the intervention, and (e) potential strategies that can be used by the teacher to support her or his implementation (Noell, Volz, et al., 2017; Noell, Witt, et al., 2005). The use of commitment emphasis with weekly performance feedback has been found to improve

teachers' TI greatly compared with brief, weekly follow-up meetings between a consultant and teacher and shows modest improvements over performance feedback alone (Noell et al., 2017). In addition, preliminary data find that commitment emphasis alone results in higher levels of teachers' initial intervention implementation in comparison to a training as usual control (Noell et al., 2017).

Ongoing Support Strategies

The other type of implementation support strategies are *ongoing strategies*. These strategies are often initiated when teachers have had difficulty consistently maintaining acceptable levels of TI (e.g., 2 or more consecutive days below a preselected criteria) and are provided until a predetermined performance criterion is met. This criterion is often set at 80% or greater TI; however, school psychologists should consider what steps are critical when defining their criterion for acceptable intervention implementation. Even with the use of direct training and other time-limited implementation supports, some teachers will require further ongoing support (Sanetti & Collier-Meek, 2015). Of these ongoing support strategies to date, performance feedback (Noell, Duhon, Gatti, & Connell, 2002; Noell et al., 2000) has the strongest empirical support and a systematic line of research demonstrating its efficacy and core components (Fallon, Collier-Meek, Sanetti, Feinberg, & Kratochwill, 2016; Noell & Gansle, 2014b).

Performance feedback involves monitoring target intervention-related skills and providing specific feedback to the implementer about the accuracy or quality of his or her implementation behaviors (Noell et al., 2005). This feedback is typically provided within a consultative relationship and can be communicated in writing, verbally, and/or graphically as a means of improving and maintaining the implementer's intervention skill delivery (DiGennaro et al., 2007; Noell, 2010). Performance feedback is most effective when provided within 24 hours of an observation of a teacher's intervention implementation (Stormont & Reinke, 2014) and when graphic presentations of performance (e.g., intervention adherence, student outcomes) are included in addition to the provision of specific feedback regarding their intervention delivery (Noell & Gansle, 2014b). For example, a middle school may implement the Mindful Schools curriculum (see <https://www.mindfulschools.org/>) to reduce student stress and monitor outcomes with weekly student self-reports. Teachers whose students report no decrease in stress following the first 2 weeks of implementation may then receive performance feedback from a consultant until adequate TI is established. The feedback would include addressing implementation strengths and areas of needed improvement, a graphical representation of the teacher's TI, and a graphical presentation of the students' average self-reported stress. Because performance feedback can be time intensive to deliver, school psychologists should gradually thin their performance feedback sessions. For example, after the teacher has

demonstrated three consecutive sessions of high implementation integrity, feedback can then be reduced from daily sessions to once-a-week meetings and then to sporadic observation and feedback sessions.

Sharing some features with performance feedback, coaching has also been demonstrated to be an effective ongoing implementation support for teachers (Johnson, Pas, Bradshaw, & Ialongo, 2018). One goal of a coach is to help teachers integrate evidence-based programs into practice with fidelity, which is accomplished through various support activities as well as the social relationship between the coach and the teacher. Although supports often include check-ins, modeling, and feedback, there is little consensus on which activities are considered essential to coaching (Becker, Bradshaw, Domitrovich, & Ialongo, 2013). Research examining specific components of coaching suggest that the working relationship, needs assessments, and modeling were positively associated with teachers' intervention implementation (i.e., dosage; Johnson et al., 2018). Because coaching is less structurally defined, ongoing strategies such as performance feedback may be more appropriate for the specific and targeted support of teachers' implementation of manualized mindfulness interventions.

SUPPORTING TREATMENT INTEGRITY WITHIN A RESPONSE TO INTERVENTION FRAMEWORK FOR TEACHERS

Simonsen et al. (2014) proposed that an ideal implementation support program should be delivered under a tiered support model, one that matches the level of implementation support needed to the appropriately intensive implementation support strategy (e.g., Sanetti & Collier-Meek, 2015). A few pilot studies have shown the promise of applying a multitiered framework of supports for teachers (Myers, Simonsen, & Sugai, 2011; Sanetti & Collier-Meek, 2015). Results of these studies showed that teachers displayed varying levels of initial intervention implementation following intervention training. Yet, through the delivery of increasingly intensive implementation supports, all teachers were able to increase their TI satisfactorily. Encouragingly, increases in TI corresponded to improvements in student outcomes.

Under this proposed multitiered framework of implementation support (Simonsen et al., 2014), all teachers receive the same high-quality training before initial intervention implementation (i.e., direct training), followed by more intensive support as necessary. Teachers whose intervention implementation remained low following a typical school-wide training (Tier 1) would be provided with more targeted support across one to two sessions (Tier 2; e.g., participant modeling). If a teacher's implementation continued to be low following the receipt of Tier 2 supports, more individualized ongoing

assistance would be provided (Tier 3; e.g., weekly performance feedback). It should be noted that implementation support strategies at Tier 1 (i.e., school wide) should be evidence based, feasible, widely relevant, and easily embedded into typical consultation or professional development seminars (e.g., direct training procedures coupled with collaborative decision making regarding intervention design, selection, and/or implementation). Table 2.2 provides recommendations regarding implementation support tier placement based on the level of resource intensiveness (e.g., time and personnel required), with Tier 1 supports being the least resource intensive and Tier 3 the most intensive. Although all implementation supports listed in Table 2.2 have published research demonstrating the effectiveness of the supports for improving teachers' TI, direct training and performance feedback are supported by particularly extensive bodies of research and are considered to be evidence based under criteria put forth by the Institute of Education Sciences, What Works Clearinghouse (What Works Clearinghouse, 2014).

CONCLUSION

Research has consistently demonstrated the important relationship between student physical and behavioral health and their academic functioning. Therefore, there has been widespread adoption of MTSS to help schools organize increasingly intensive and tailored student interventions within a tiered service delivery system. At the foundation of all MTSS systems is data-based decision making regarding the need for increasingly intensive services when a nonresponse to current services is documented. However, intervention outcomes are undermined when they are not implemented as intended (Fryling et al., 2012). Thus, it is critical to monitor educators' TI in regard to the interventions selected for students within MTSS.

It is recommended that TI assessment be multimethod and multirater to allow for a comprehensive assessment of intervention implementation (Power et al., 2005). This includes using a combination of assessments, such as direct observation, self-reports, and permanent products. However, limited school resources require that educators consider what assessment procedures and schedules will yield accurate, useful data while remaining feasible.

Although direct training procedures can help bolster initial TI, it has been demonstrated that teachers differ in their needed level of support following intervention training (Sanetti & Collier-Meek, 2015). Thus, additional support strategies should always be considered as part of any effort to promote high levels of ongoing TI. Various evidence-based implementation support strategies have been identified with differing time requirements. Many have proposed that the efficient use of these support strategies can be couched in an MTSS model, matching the level of teacher need with an appropriate implementation strategy (Simonsen et al., 2014).

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3

School-Based Behavioral Health Services

A Public Health Model for Prevention

Melissa Pearrow and Janine Jones

With broad access to youth in development, public schools possess a unique constellation of opportunities for behavioral health promotion. Schools, within a larger ecological context, serve as community institutions that foster the development of resilience and social and emotional assets. Schools can be a refuge where children who have many environmental risks can find structure and methods of success and where children can learn and practice peer relations, social norms, and healthy decision making (Doll & Lyon, 1998). The familiar environment of schools removes transportation barriers, particularly for vulnerable populations, and reduces the financial, cultural, and structural barriers that youth may encounter in trying to receive mental or medical services in the community—such as lack of insurance, limited financial resources, noncitizen status, and cultural stigma around mental health (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). More specifically, S. M. Blake, Ledsy, Goodenow, and O'Donnell (2001) stated that “schools provide a critical gateway and opportunity for reaching both immigrant students and their families with coordinated school health programs” (p. 112). Schools are a natural environment in which health and behavioral difficulties impact functioning, and they are also where early intervention, well-care visits to promote long-term health maintenance, and screenings can occur without major disruptions to the family (Pearrow & Wheeley, 2007). Thus, the numerous advantages of providing health services within the school setting range from enhancing the well-being of youth to improving educational

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outcomes; research has identified many aspects of positive youth development, such as decreasing absences and discipline referrals and improving test scores (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Taylor, Oberle, Durlak, & Weissberg, 2017).

The public education system has been called a “vast hidden system of health care” (Hess, Pearrow, Hazel, Sander, & Wille, 2017, p. 215). It facilitates access to health services because there are “56,000 school nurses, 1,725 school-based health centers, 99,000 school counselors, 30,000 school psychologists, and 14,000 school social workers” (Lear, 2007, p. 410) working with approximately 3 million classroom teachers to address the needs of more than 50 million students (National Center for Education Statistics, 2016). Services attend to broad initiatives of physical and behavioral health (e.g., drug prevention, sex education, mental health, healthy choices) to create safe and supportive learning environments for all students. Ideally, services are designed to meet the needs of all students and, coordinated with community resources, address the unique behavioral health needs of individual students. When schools partner with community agencies, the resources can target the needs of vulnerable students, specifically the 13% of all public-school students receiving special education services and the roughly 2.5% who are reported as homeless children or youth (U.S. Department of Education, National Center for Education Statistics, 2017).

There is a growing recognition that schools cannot provide effective services by supporting one child at a time and only after they have begun to fail. Thus, promoting students’ mind–body health requires a public health method of service delivery in which comprehensive, integrated services that promote positive outcomes and prevent problems are provided to students and their families (Cummings et al., 2004; Dawson et al., 2004; Hess, Short, & Hazel, 2012). In a public health model, the community is engaged to offer practical, population-based assessments, interventions, and other comprehensive services that promote and maintain health. The public health approach to prevention focuses on “how to change population-level behaviors, environmental factors, or processes to reduce incidence rates of disorders and to increase healthy outcomes in a population” (Winslow, Sandler, & Wolchik, 2005, p. 339). Effective public health interventions, therefore, rely on the careful identification of systemic problems and focus treatment on important individual, family, school, and community targets (Hess, Pearrow, et al., 2017; Hess, Short, & Hazel, 2012). Thus, the focus of interventions becomes the environment rather than the individual.

With an eye toward prevention, schools become the most logical site. As a governmental institution, the public education system directs the largest proportion of local, state, and federal spending on children. More specifically, total expenditures for public elementary and secondary schools in the United States in 2013–2014 amounted to \$634 billion (U.S. Department of Education, National Center for Education Statistics, 2017). The educational system offers “the most efficient and systematic means available to promote the psychological, social, and physical health of school-age children”

(Weissberg, Caplan, & Harwood, 1991, p. 833). Structuring these resources for *behavioral health*, which broadly refers to the continuum of social, emotional, mental, and behavioral well-being of students, allows for an emphasis on prevention and the optimization of positive functioning. It also allows for resources to address problem behaviors and mental and emotional difficulties and to target behaviors that interfere with learning (e.g., bullying, teen pregnancy, substance abuse), as well as diagnosable mental disorders.

This chapter introduces the important role of schools in behavioral health prevention and promotion within a public health framework. It continues with two examples of systemic, prevention-focused efforts to promote the positive development of students encumbered by environmental stressors: the Comprehensive Behavioral Health Model and the Let Art Unleash Great Happiness (LAUGH) time pilot program. These examples highlight creative endeavors to engage community partners in a way that enhances access to resources and demonstrates beneficial outcomes for multiple stakeholders.

DEFINING PREVENTION

Within an ecological framework, prevention programs occur in natural socio-cultural settings and focus on actions taken before the onset of disease and efforts to modify the course of the disease before it reaches a level of pathology (Bloom, 1996; Goldston, 1986). By definition, the focus of prevention programs is educational rather than clinical and is best explained through the three-tiered public health model. Effective prevention programs, such as those that target tobacco, alcohol, and drug abuse and school dropout prevention, require comprehensive instruction that begins early in life and stress interventions at the preschool and elementary school level (Macklem, 2014; Petersen, Pietrzak, & Speaker, 1998; Rush & Vitale, 1994). Successful ecological interventions target developmental levels and include multiyear programs and strategies directed at risk and protective factors, target the individual and the environment to support the child's positive changes in both the school and home environments, and link with community systems (Greenberg, Domitrovich, & Bumbarger, 2001; Taub & Pearrow, 2012). Greenberg et al. (2003) offered the following definition of the prevention strategies organized through a three-tiered, public health approach:

Universal preventive interventions target the general public or a whole population group that has not been identified on the basis of individual risk. Exemplars include prenatal care, childhood immunization, and school-based competence enhancement programs. Because universal programs are positive, proactive, and provided independent of risk status, their potential for stigmatizing participants is minimized, and they may be more readily accepted and adopted. Selective interventions target individuals or a [sic] subgroups (based on biological or social risk factors) whose risk of developing mental disorders is significantly higher than average. Examples of selective intervention programs include: home visitation and infant day care for low-birth weight children, preschool programs for all children from poor neighborhoods, and support groups for children who have

suffered losses/traumas. Indicated preventive interventions target individuals who are identified as having prodromal signs or symptoms or biological markers related to mental disorders, but who do not yet meet diagnostic criteria. Providing social skills or parent–child interaction training for children who have early behavioral problems are examples of indicated interventions. (p. 7)

Within the ecological context, there are social determinants that influence levels of risk: Youth who live in urban environments are 20% more likely to experience adverse childhood experiences (ACEs) than are children in nonurban settings and are more likely to face increased risk of health and behavioral health challenges (Mersky, Topitzes, & Reynolds, 2013). These youth are disproportionately required to cope with environmental challenges, such as poverty, high crime, domestic violence, substance abuse, poor nutrition, unemployment of a parent or caregiver, and low income (Anakwenze & Zuberi, 2013; Cauce, Stewart, Rodriguez, Cochran, & Ginzler, 2003; Conroy & Brown, 2004; Netzel & Eber, 2003). Exposure to ACEs also results in an increased risk of more severe symptomology, such as depression, substance use, and antisocial behaviors, as well as a plethora of other negative outcomes, such as physical health disparities, diminished life satisfaction, and poor academic performance (e.g., Anda et al., 2002; Chapman et al., 2004; Mersky et al., 2013).

Urban schools are more likely to have students from minority cultures and races, children of low income, and non-English-speaking children (Council of the Great City Schools, 2003). These youth are frequently overidentified as needing special education services for emotional impairment (EI). This is especially so for African American youth, who make up just over 17% of the public school student body, nearly 29% of whom are identified as having an EI (National Center for Education Statistics, 2016). Low socioeconomic status (SES) school districts largely composed of minority students (e.g., Latinx, African American) provide fewer prevention programs than do higher SES schools, composed of mostly Caucasian students (Hanley et al., 2010). Instead, minority students, especially African American youth, are disproportionately placed into treatment facilities (National Council on Crime and Delinquency, 2007). This suggests that urban schools, which tend to have higher concentrations of minority students, are likely misidentifying and underserving their students' health and behavioral health needs.

DISTRICT-WIDE SCHOOL BEHAVIORAL HEALTH

According to an evaluation conducted by the Council of the Great City Schools (2009), the students with behavioral health needs in Boston were disproportionately identified with EI. Specifically, 12.6% of students were identified as having EI, which was twice as high as the national average of 6.3% during the same year (National Center for Education Statistics, 2016). The hypothesis for the discrepancy was that school personnel felt ill-equipped to handle students' challenging behaviors without an organized system of

supports, and thus, special education was the only option. Also, the lack of screening procedures and preventive support services have left many children vulnerable. As a result, services across schools tended to be reactive, and there were vast inconsistencies in access to community services. For example, 25% of the schools within the district did not have partnerships with community mental health agencies, and even within the schools that did have partnerships, the quality and quantity of the services varied significantly (Pearrow, Amador, & Dennerly, 2016).

Boston Public Schools (BPS) are approximately 125 schools that educate nearly 57,000 students from diverse backgrounds. Approximately 42% of students identify as Latinx, 35% identify as Black, and 9% identify as Asian. Approximately 70% are classified as economically disadvantaged. The families of BPS speak over 70 languages and come from 138 countries (Boston Public Schools, 2016). English is not the first language for 46% of the students in BPS, which is much higher than the Massachusetts average (18%). The 2013 *Health of Boston Children* report (Boston Public Health Commission, Research and Evaluation Office, 2013) noted that one out of every five Boston children experienced two or more ACEs, which contribute to negative long-term impacts on a student's physical and mental health, school attendance, engagement, and achievement (Dube, Felitti, Dong, Giles, & Anda, 2003). Therefore, in BPS, there is a compelling need for a district-wide, culturally responsive, and comprehensive approach to behavioral health services that could consistently and effectively address the widespread needs of students and efficiently target resources to those with the greatest needs.

The Comprehensive Behavioral Health Model (CBHM) is a large-scale, multitiered system of supports developed by BPS Behavioral Health Services Department in partnership with Boston Children's Hospital and the University of Massachusetts Boston (Pearrow et al., 2016) to provide a continuum of behavioral health services. CBHM addresses the diverse needs of children, ensures access to high-quality services, and includes direct social-emotional skill instruction for all students, as well as a systematic process for reinforcing positive behaviors exhibited by students at the universal, Tier 1 level. Using a universal screening measure that identifies both problem behaviors and adaptive behaviors, service delivery is grounded in data-based decision making and evaluating effectiveness. The commitment to a universal screener has been critical within this urban context because the common identification strategies, such as office discipline referrals, historically miss students who internalize their stress and overlook others because of racial inequities (J. Blake, Gregory, James, & Hasan, 2016).

Currently, CBHM is implemented in more than 70 schools serving over 28,000 students, and schools participating in CBHM are demonstrating significant behavioral health improvements (Pearrow, Snyder, & Kaye, 2017). On-going evaluation, which is a vital aspect of the Research and Evaluation Committee, has found that students who demonstrate some or high levels of risk on the externalizing and internalizing scales of the universal screener make significant gains after 1 year of implementation, and these gains are

carried into the third year. In addition, students who demonstrate levels of risk in behavioral functioning also perform more poorly on state assessments of academic proficiency (Snyder, Pearrow, Kaye, & Briesch, 2016). This suggests that students with some level of risk for behavioral difficulties do not perform as well academically as their normally developing peers, again demonstrating the link between behavioral health and school performance.

The example of CBHM provides support for district-led, comprehensive, and multitiered systemic interventions to address and improve student behavioral health. Universal supports and screening of early signs are important because problem behaviors often create a significant barrier, uniquely so in urban schools where students disproportionately experience trauma and multiple ACEs. By integrating social, emotional, and behavioral services into schools, high-quality services can be equitably accessed by all students.

SCHOOL-BASED WELLNESS PROMOTION

Mindfulness, the practice of intentional, sustained, and nonjudgmental attention to the present moment (Black & Fernando, 2014), is a skill that can be taught to children and adults with numerous demonstrated and potential benefits. Mindfulness is a psychological and behavioral approach to attend and actively respond to the environment. By gathering information through all the senses and reflecting on experiences without judgment, individuals practicing mindfulness may regulate their emotional responses and address conflicts with creative and flexible problem-solving strategies (Albrecht, Albrecht, & Cohen, 2012; Black & Fernando, 2014).

When implemented in classrooms, school-based mindfulness programs have been shown to increase and enhance school engagement, classroom management and participation, prosocial behaviors, attentional control, and awareness and use of social and coping skills to solve problems (Black & Fernando, 2014; Felver, Celis-de Hoyos, Tezanos, & Singh, 2016; Klatt, Harpster, Browne, White, & Case-Smith, 2013). Academic performance gains have been shown for children from diverse (e.g., socioeconomic, cultural, linguistic, ability) backgrounds (Klatt et al., 2013). Mindfulness practices also decrease anxiety, depression, anger and aggression, and noncompliant behavior. At the same time, mindfulness increases empathy, self-control, self-satisfaction, attention, emotion regulation, and healthier interpersonal relationships. Given these findings, the integration of mindfulness practices in schools would have the greatest potential to promote emotional well-being in schools.

LET ART UNLEASH GREAT HAPPINESS

Because mindfulness practices have shown promise for increasing student and school-wide well-being and performance, one school sought to integrate mindfulness through an alternative approach—through technology and art.

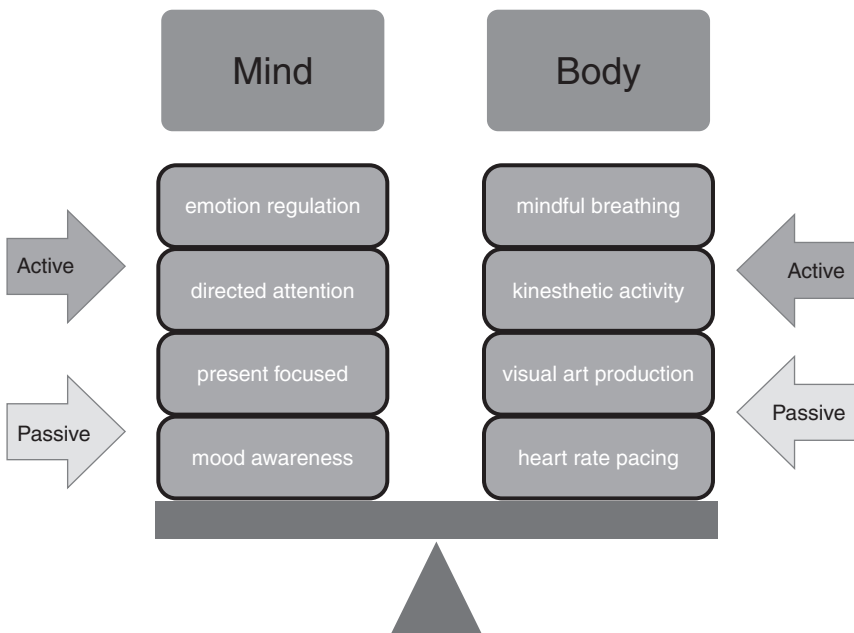
This school was recognized to be a high-needs school with greater than 30% homeless youth attending the school and a larger proportion, 72%, of students eligible for free and reduced-priced lunch. The school was seeking out new ways to build resilience in students and support emotional well-being in this highly stressed population of students. This multigrade, multiclassroom prevention program was called LAUGH time, which stands for Let Art Unleash Great Happiness. The primary purpose of the program was to test for changes in the classroom climate using an art-based approach to mindfulness that was delivered through technology in the classroom.

The LAUGH Time Program Overview

LAUGH time included using an iPad and the LAUGH application for 20 minutes, 2 mornings per week in second- and third-grade classrooms in an elementary school. This app includes a blend of traditional techniques of mindful and focused breathing as well as an art-based interface that encourages focused, creative movement and a sense of self-control.

LAUGH time was designed to be a holistic method of art-based mindfulness. The program addresses the mind and body through visual, auditory, and kinesthetic elements. Some of the elements were implemented actively, others passively. Active elements were components with explicit auditory and visual instructions, whereas passive elements were implemented as part of the infrastructure of the program or the classroom environment. Figure 3.1 shows the major design elements of the LAUGH program. The primary goal of LAUGH

FIGURE 3.1. Let Art Unleash Great Happiness Design Elements



time is to increase socioemotional well-being and cultivate resilience in students with technology, art, and mindfulness in the classroom.

As shown in Figure 3.1, the LAUGH app was designed intentionally to provide balance in the mind and body. As a mindfulness intervention, students were instructed to direct their attention to the “present moment” and notice their mood and energy level and identify any feelings that might relate to their mood and energy level. Students activated the mind–body connection through modifying their breathing patterns and creating digital paintings on tablets using their fingers while listening to gentle reminders of the mindfulness skills for calming the body. Throughout LAUGH time, students were also exposed to relaxing music that held the tempo of a resting heart rate while they created their art.

The Process of LAUGH Time

Using the app, students practiced mindfulness by implementing breathing skills along with a cartoon character and created art that converted to AmbientArt, a form of digital art that recreates the drawing process from start to finish on large screens in the school. Within the LAUGH app, the images and sounds (visual and auditory inputs) were designed to be calming—background music was paced to a child’s heartbeat, the character’s voice was encouraging, and the color backgrounds include natural settings and soft colors.

Before and after they completed the art, students identified their present feelings by rating their emotional state in terms of energy and pleasantness. This school included the socioemotional learning curriculum called RULER (<https://www.rulerapproach.org/>) as part of the school-wide curriculum twice a week, so one element of the curriculum, the RULER mood meter, was integrated into the LAUGH app. The mood meter uses a color-coding system for children to identify their moods and energy states along horizontal and vertical axes. Identifying placement on the mood meter allowed the research team to show how each child’s mood and energy changed as a result of LAUGH time. At the end of LAUGH time, students answered eight questions about how they felt about learning (e.g., “I feel happy when I am working and learning at school”) and how connected they felt to school (e.g., “I feel like I belong at this school”).

Throughout each school day, the AmbientArt generated by students was displayed on large screens in the classrooms and the cafeteria. The AmbientArt visual system allowed students and staff to see their art “come to life” before their eyes. The art rotated throughout the day and cultivated an art-focused community, providing opportunities to experience pride in their art and serving as a reminder for mindful attention and emotion regulation.

LAUGH time participants were observed during a 5-minute observation period to assess how engaged they were with the program over time. The observation period was divided into ten 30-second intervals. Engagement was measured by being “on task with their eyes on the screen.” Participants

who were distracted or disengaged from the task for more than 10 seconds (or greater than one third of the 30-second interval) were rated as “off task” during the observation period. Off-task intervals were recorded and analyzed by demographic characteristics. The classroom teachers completed a short survey about student behaviors since starting LAUGH time at school. They were asked about the degree to which students were calm when learning and whether they perceived that their students felt a bond with the school environment.

LAUGH Time Results

Participants

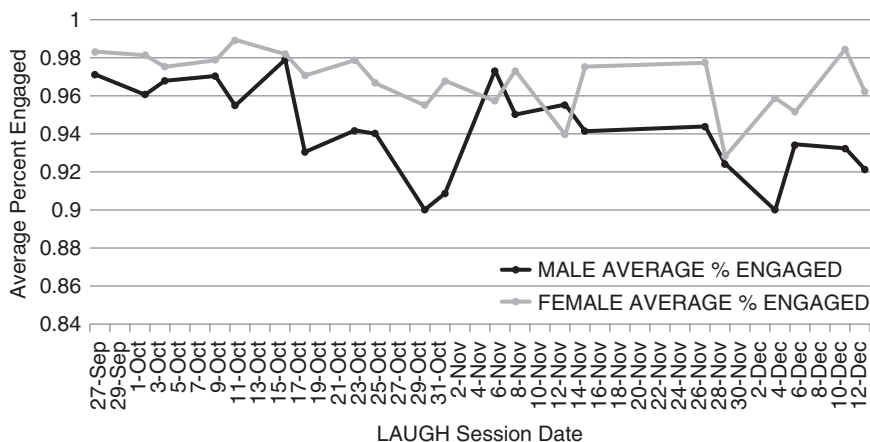
There were 81 students in the second and third grades who completed the first 10 weeks of LAUGH time. Of the students, 51% were male, 49% were female, and less than 1% were nonbinary or gender nonconforming. The children in the four classrooms were also a diverse population. The largest proportion (36%) were African American or Black, 29% were of White or European descent, 12% were African Immigrants, 6% Latinx, 4% Asian or Pacific Islander, and 5% mixed race students.

Engagement With LAUGH Time

The research team collected data twice a week throughout the pilot phase of the project to determine the degree to which participants were remaining engaged in LAUGH time. The team observed small groups of students in 30-second intervals to record incidents of off-task behavior that last 10 seconds or more. Behaviors considered off-task included not using headphones, looking away from the iPad screen, talking to other students, ignoring the app during mindful breathing (and not breathing along), and leaving their desk. Across the 10 weeks of LAUGH time, the average level of student engagement was 95.6%.

When considering levels of engagement by gender, an interesting pattern was found. The average level of engagement for girls was 96.8%, whereas for boys, average engagement was 94.2%. As shown in Figure 3.2, over time, there was a slight decline in LAUGH time engagement with girls until around Week 5. A similar pattern was present for boys, but the decline was faster and more severe, down to a low of 90% engagement. However, a notable change occurred around Week 5. During Week 5, the LAUGH app was updated to include new sample images for students to use as inspiration for their art. At this discovery, there was significant excitement in the classroom (observed by the research team and also reported by the teachers). This update seemed to maintain engagement for girls; however, after a few weeks, boys’ engagement began to decline again. As a result of the observation findings, we opted to refresh the inspiration pictures in the app every 5 weeks to maximize the opportunity to maintain engagement levels for the remainder of the school year.

FIGURE 3.2. Let Art Unleash Great Happiness Engagement by Gender Across 10 Weeks



Teachers' Perceptions of the Impact of LAUGH Time

We collected evidence of the impact of LAUGH time from teachers and students. Teachers were invited to complete online questionnaires, whereas students were asked to either verbally respond to a question or draw or write responses on paper on a day that LAUGH time did not occur. Impact was measured by perceptions of students' desire to learn in school, school connectedness, and moods as described by the students.

LAUGH time classroom teachers were periodically asked about their students' desire to learn and students' feelings of school connectedness. The items were as follows: (a) My students are excited about learning new things in class, (b) My students are calm when working and learning in class, (c) My students feel like they belong at school, and (d) My students feel respected and cared for at school. Teachers response options were *almost always*, *mostly*, *sometimes*, and *rarely*. The pilot study results showed that 50% of the teachers believed that their students were almost always excited about learning, and the other 50% were mostly excited. Sixty-six percent of teachers indicated that their students were mostly calm in the classroom. Teacher ratings of student belonging were more variable. Eighty-three percent of teachers rated their students as almost always feeling respected and cared for, whereas only 16% rated their students as sometimes feeling that way.

The teachers were also invited to give feedback on the ways that children were responding to LAUGH time throughout the day. Several mentioned the effect of LAUGH time on student emotional states. One teacher said,

Students definitely enjoy LAUGH time, especially drawing and creating on the iPads. I also think it is great that they have time and space to just focus on their breathing when they first walk in the classroom. It provides a dependable relaxed start to the school day, which helps to counteract the stress students might experience in the morning at home.

Similarly, another teacher reported, “I prefer the mornings that we do LAUGH time because the kids are calmer and more engaged in the classroom.”

Two teachers expanded the discussion of the effect of an established smooth routine. For example, in response to the routine of having LAUGH time, one teacher said, “Our mornings run much smoother on LAUGH time. The students respond well to the structured routine and are more engaged than on other days. They also act calmer on those days as a result of LAUGH time.” Another said,

I definitely think LAUGH time is a great routine for the morning. It is reliable and students miss it when it does not happen on a Monday or Wednesday (since they expect it). On the other days students are not as sure what they are going to be doing, which can add stress to their morning. LAUGH time also provides a buffer for students who are late. This makes their start to the day less stressful as well, because they know they already know what to do when they arrive.

Students’ Perceptions of the Impact of LAUGH Time

Students in the classrooms had similar reactions, which resembled the teachers’ responses about emotional states related to LAUGH time. When asked to offer “one word that describes how LAUGH time makes you feel,” 31% of the children said “happy,” 30% said “calm,” 9% said “good.” The remainder of students selected individual positive emotional adjectives, except one student who said, LAUGH time makes them feel “bored.” For the most part, it was apparent that the students enjoyed LAUGH time and recognized it as a way to regulate any strong emotions in the morning on arrival.

Overall Impact of LAUGH Time

By the end of the school year (September 2017–June 2018), most students completed between 30 to 50 sessions of LAUGH time and created more than 12,000 works of art that were displayed as AmbientArt on screens in each classroom and the school cafeteria. Students completed short questionnaires about their joy for learning and school connectedness and rated their mood on the mood meter during each of these sessions. Analyses of each of these variables showed that over time, LAUGH time is making a difference to student learning. The two key findings from the intervention were improved mood scores and increased joy of learning scores.

Improved Mood Scores

As mentioned previously, students completed a special version of the RULER “mood meter” before and after LAUGH time for each instance that they interacted with the app. We explored the number of interactions each student had with LAUGH time and the patterns of changes in their mood and energy level over time. Using the number of sessions as an indicator of LAUGH time dosage, we found a clear effect over time: The more students interacted with the LAUGH app, the more their moods improved. For example, 53 students participated in LAUGH time for 40 sessions during the academic year. Those students showed a statistically significant increase in mood score (1.43 points)

by the final three sessions of LAUGH time ($p < .0001$). Similarly, 59 students received 35 sessions of LAUGH time and showed a significant improvement in mood (1.30 points).

Increased Joy of Learning Scores

The joy of learning questions from the Student Subjective Wellbeing Questionnaire (Renshaw, Long, & Cook, 2015) were used to identify student levels of excitement about learning new things in class, their level of interest in the things they were doing at school, their level of enjoyment with working on projects and assignments, and their degree of happiness when they were working and learning at school. When comparing their ratings from the first three sessions of LAUGH time to the last three sessions, the results were similar to the mood changes—the more sessions of LAUGH time, the greater the impact. For every 14 sessions of LAUGH time, student scores on the Joy of Learning scale (Renshaw, Long, & Cook, 2015) increased by .72 points. Those who interacted with the LAUGH app the most showed more than 1 standard deviation improvement in joy of learning scores ($p < .05$).

The LAUGH program shows excellent potential for engaging students in mind—body wellness strategies at the elementary school level. The students responded well to the routine of LAUGH time and recognized the program as a resource for their emotional well-being. This study has implications for school-wide prevention programs as well as for interventions that could be implemented at a time when a child is experiencing emotional dysregulation. For example, during the second year of the program, the LAUGH app was being used as a Tier 2 intervention by the behavior intervention team when students were dysregulated and unable to be in their classroom. The team members used the LAUGH app to help restore calm and assist the student to reengage in learning in their classroom. Tapping into a familiar routine, engaging the senses, and allowing for the production of a meaningful product (art) has been shown to be just the technique that can be used by school mental health professionals, teachers, and administrators to deescalate students when they are unable to do so using traditional verbal strategies of deescalation. Thus, schools can incorporate prevention programs as established routines so that all students benefit from the skills, and when necessary, the components of the prevention program can be scaled into interventions. This approach provides a built-in mechanism for multitiered systems of care for students in school.

CONCLUSION

Provision of health services at the ontogenic level based on the medical model is needed; however, application of the most state-of-the-art therapeutic interventions is no replacement for preventing problem behaviors at their inception. Within the school setting, educators and school professionals can

implement universal interventions to promote protective factors associated with resilience and positive emotional development, thus extending interventions beyond individual students and into the ecology of the schools, where systemic efforts influence factors of students' academic and behavioral success (Doll & Cummings, 2008). In partnership with community agencies, schools can expand health services to provide resources to students in areas that typically fall outside the scope of an educational system. Connections to community resources can provide students and families with enhanced services with sustainability beyond the traditional hours and months of the academic year.

The ecological and public health opportunity of schools highlights the vital role of prevention of and early intervention for problem behaviors, especially because some of the most serious health and social problems confronting American society today are caused, in large part, by the behavior patterns established during youth (Kolbe, Collins, & Cortese, 1997). Incorporating wellness goals into the mandates of public education systems requires a paradigmatic shift of educators, political leaders, and the larger community. The work of schools is to enhance the education of our nation's youth. Yet, students' capacity to learn in these environments is influenced by a number of factors, including the amount of available support services. The examples provided in this chapter highlight the expanded opportunities for school personnel to support wellness and promote healthy development, while also directing resources to those with the greatest needs. In communities that experience disparities in access to health services, creative endeavors to incorporate schools and community agencies can address this "silent epidemic" that has grave implications for students, families, and communities (Anderson & Cardoza, 2016).

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4

Neuropsychological Impact on Mental Health and Associated Treatments for Children With Chronic Illness

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Although there are variations, a *chronic* illness or condition generally includes the presence of a health or medical problem that lasts at least 3 months, requires ongoing medical care at some point, affects normal activities, and is associated with functional impairment of some kind (e.g., Thabrew, Stasiak, Garcia-Hoyos, & Merry, 2016). The prevalence of chronic illness is estimated to have increased over the past few decades (Brown, Daly, & Rickel, 2007; Halfon & Newacheck, 2010), with ranges from 10% to 35% of children and adolescents with a chronic health condition that interferes with daily living. According to a national survey, 14% of children under 18 years of age have a health problem treated with medication within the previous 3 months (National Center for Health Statistics [NCHS], 2012). Approximately 7% to 9% of children have a chronic illness severe enough to consistently interfere with their normal school or life activities (NCHS, 2012).

Some of the more common chronic illnesses requiring medical intervention include asthma (Al Ghriwati, Winter, Everhart, & Fiese, 2017), cancer (NCHS, 2012), epilepsy (Schraegle & Titus, 2017), sickle cell disease (Daly, Kral, & Brown, 2008), Type 1 diabetes (Savage, Farrell, McManus, & Grey, 2010), and congenital heart disease (Compas, Jaser, Reeslund, Patel, & Yarboi, 2017). Depending on how it is defined, chronic illness also can include other chronic conditions (e.g., attention-deficit/hyperactivity disorder [ADHD], autism spectrum disorder, learning disabilities) that may or may not involve medical intervention. Alternatively, these are considered behavioral health concerns.

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Given the complexities and broad range of chronic illness, neurodevelopmental models can provide a perspective on the interaction of brain development and function in relation to mental health in children and youth with chronic illness.

CHRONIC ILLNESS AND BRAIN FUNCTION

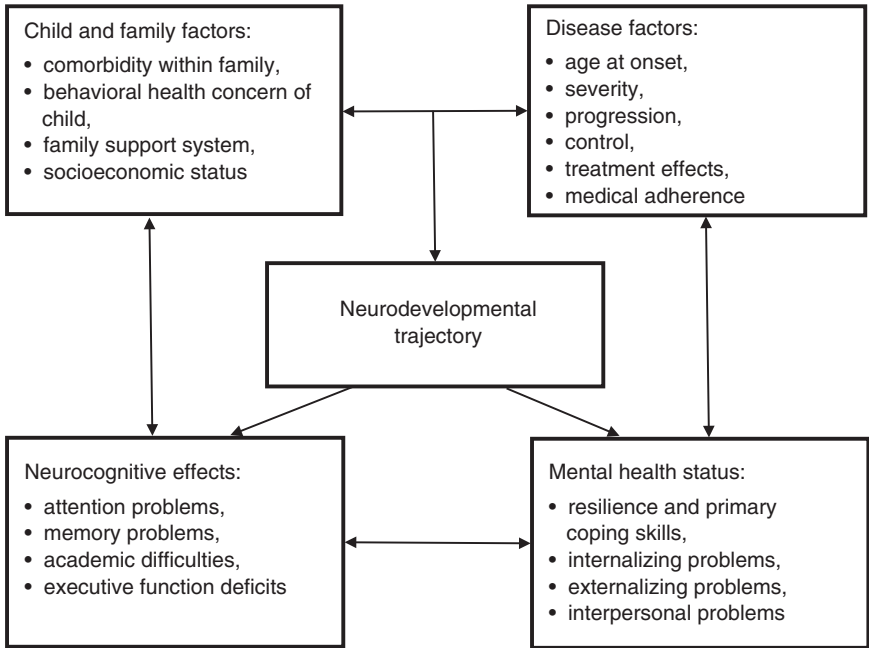
Regardless of the chronic illness, there is potential for the underlying disease to reflect atypical brain function and/or to affect brain function and development, either directly or indirectly. When considering chronic conditions with medical involvement, historically, the focus of treatment has been on survival. With increased rates of survival and technological advances, there has been improved understanding of the ways in which disease processes and treatments can have an impact on brain development and function (Armstrong, 2006) and the potential for reciprocal effects from illness or injury, as well as from prenatal exposure to toxins (Riccio, Drake, & Sullivan, 2016).

When typical development is disrupted by a disease or treatment process, neurodevelopmental changes arise from the subsequent changes in neural function and connectivity. This is not unlike the models for disorders such as ADHD, learning disabilities, or autism that hypothesize that some change or alteration occurred prenatally, resulting in atypical neurodevelopment (e.g., Finn et al., 2014; Schweren et al., 2016). With chronic illnesses, these changes may be the result of observable structural changes due to neurosurgery for a tumor or intractable epilepsy (Riccio, Pliego, Cohen, & Park, 2015); a vascular injury associated with a stroke (Daly et al., 2008); decreased oxygen available to the brain in conjunction with cardiac abnormalities, respiratory conditions, or anemia; or acute alterations in glucose levels, as may occur with diabetes (Savage et al., 2010). Although some effects may be transient, permanent changes in neural function can occur, with immediate effects or late effects on neurodevelopmental trajectory and function (Armstrong, 2006). Many models have been developed to consider the myriad factors that contribute to outcome, both in terms of educational outcome and mental health (Armstrong, 2006; Guilfoyle et al., 2017). Models generally consider the biological mechanisms of the diseases and treatments, child and family context, and neurocognitive and mental health factors (see Figure 4.1).

Disease-Related Factors

In neurodevelopmental models, disease-related considerations include the severity of the illness, what is involved in the disease process, the effectiveness of treatment in controlling the disease process, side effects of the treatment, and adherence to the medical protocol (e.g., medication, diet). Severity can be viewed in terms of physical effects and interference with typical activities and intensity of treatment required (e.g., extent of hospitalization, number of

FIGURE 4.1. Neurodevelopmental Model of Effects of Chronic Illness



medications, surgery, radiation protocol, chemotherapy protocol). For example, the amount of time an individual is out of school and in the hospital has been found to influence the development of psychosocial issues and academic achievement (Compas et al., 2017). Further, severe baseline disease status was associated with the greatest decrease in quality of life (Werner et al., 2017). Control of the disease process and decreased symptomatology is a key factor for physical health and adjustment (e.g., Werner et al., 2017). For some chronic illnesses, such as cancer, the treatment may have significant effects on brain function (e.g., Campbell et al., 2007). Adherence is of particular concern with regard to both physical effects and impact on academic and social functioning. It is estimated that nonadherence to medical protocol occurs among 50% to 75% of adolescents and young adults (Rapoff, 2010).

Age of onset is also a consideration. For chronic illnesses such as cancer or epilepsy, it is presumed that the child evidenced typical development until the illness manifested (Armstrong, 2006). As such, the later the disease manifested, the better the outcome for the child (i.e., the more typical the foundational neurodevelopmental trajectory). This is what differentiates the neurodevelopment of those with chronic illness (e.g., epilepsy, cancer, asthma) from those with other chronic conditions (e.g., learning disabilities, ADHD, autism). Although confirming the effects of disease factors on overall adjustment, Werner and colleagues (2017) also noted that these factors only explained a small proportion of variability in their sample of children with inflammatory bowel disease.

Child and Family Factors

Child and family factors have to be considered because they have been found to be directly related to both physical and mental health (e.g., Al Ghriwati et al., 2017). Family context, including socioeconomic status, parent mental health, and family functioning, has been found to impact not only disease factors but also the child's mental health and quality of life (e.g., Anclair, Hjärthag, & Hiltunen, 2017). Notably, higher levels of parental stress and anxiety were associated with behavioral health concerns and lower quality of life for children with chronic illness (Whittemore, Jaser, Chao, Jang, & Grey, 2012). For children with asthma, the relationship between family factors, asthma severity, and depressive symptoms was significant (Al Ghriwati et al., 2017). Further, there are bidirectional interactions that take into consideration illness-related concerns (e.g., Lagor, Williams, Lerner, & McClure, 2013), as well as supports and services available for the child with the chronic illness and other family members.

Neurodevelopmental Model and Epilepsy

Epilepsy is the most common neurologic condition, often identified in children and continuing into adulthood, with long-term effects that include behavioral health comorbidities (Guilfoyle et al., 2017). There is a wide range of seizure types, all involving recurring central nervous system dysfunction that results in alterations to consciousness, sensory function, and/or motor function. Notably, for approximately one third of individuals with epilepsy, there is no identified etiology (Berg et al., 2010) and there is no cure. Various antiepileptic drugs are used to control seizure activity; however, these are not without side effects (e.g., Loiselle, Ramsey, Rausch, & Modi, 2016). When medication is not effective, surgical options are considered (Guilfoyle et al., 2017).

For individuals with epilepsy, when seizures are localized to the frontal region of the brain, there is a greater likelihood of problems with response inhibition or self-regulation of behavior (e.g., Riccio et al., 2015). Alternatively, with temporal localization, there is a higher likelihood of problems with mental flexibility, attentional control, and inhibition (Rzezak, Guimarães, Fuentes, Guerreiro, & Valente, 2012). It has been argued that the neurobiological underpinnings of epilepsy, shared with other disorders such as ADHD, contribute to the high co-occurrence of these disorders (Guilfoyle et al., 2017). For example, it is estimated that about 30% to 40% of children with epilepsy exhibit behavioral symptoms of ADHD (i.e., problems with inhibition, concentration, organization; Cohen et al., 2013). Children with new or recent-onset epilepsy exhibited altered neurodevelopment with more pronounced differences in the frontal lobes (Hermann et al., 2010). Moreover, research has suggested differential effects depending on the primary activation site (i.e., right temporal, left temporal, or frontal; Riccio et al., 2015). Individuals with epilepsy also evidence a high co-occurrence of autism spectrum disorders (e.g., Thomas, Hovinga, Rai, & Lee, 2017).

MENTAL HEALTH AND CHRONIC ILLNESS

As with epilepsy, it is not infrequent for children and youth with a chronic medical condition to also evidence behavioral health concerns. Given the medical and social stressors often associated with chronic illness, it is not surprising that affected children and adolescents are at increased risk of emotional and behavioral problems (e.g., Piquart & Shen, 2011). According to existing research, although some children with chronic illness are more resilient than others (Hilliard, McQuaid, Nabors, & Hood, 2015), chronic illness is associated with psychological adjustment problems (e.g., Piquart & Shen, 2011). More important, studies have identified a bidirectional interaction between illness-related factors and psychological stress for both epilepsy (e.g., Tang, Michaelis, & Kwan, 2014) and asthma (e.g., Chiang, Ma, Huang, Tseng, & Hsueh, 2009).

Resilience and Protective Factors

Historically, the focus in the literature has been on the risk factors and negative outcomes associated with chronic illness (e.g., Hilliard et al., 2015). In the past decade, however, the focus has shifted to protective factors and resilience in children and youth with chronic illness. Resilience has been conceptualized as those processes by which children and youth, as well as their families, adjust and cope with chronic illness in ways that allow them to have good health outcomes and a positive quality of life (Parsons, Kruijt, & Fox, 2016; Wallander & Koot, 2016). As such, consideration of resilience includes “emotional, behavioral, or health outcomes that match or surpass normative developmental milestones, behavioral functioning, or emotional well-being” despite the challenges of living with and managing a medical or developmental condition (Hilliard et al., 2015, p. 837). Child and family protective factors have accounted for significant variance in depressive symptoms for children with Type 1 diabetes (Monaghan, Clary, Stern, Hilliard, & Streisand, 2015) as well as for high health-related quality of life (Hilliard, Harris, & Weissberg-Benchell, 2012).

For adolescents and youth with cancer, social integration and support, as well as strong coping skills, accounted for significant variance (Haase et al., 2017). Notably, the protective and resilience factors that have been identified (Comeaux & Jaser, 2010; Hilliard et al., 2015) align with the child and family factors of the neurodevelopmental model. These include the following:

- children’s behavioral control or self-regulation and executive function skills (Traub & Boynton-Jarrett, 2017),
- positive parent–child relationships (e.g., Comeaux & Jaser, 2010; Monaghan et al., 2015; Traub & Boynton-Jarrett, 2017),
- active connectedness with friends and family (e.g., Tillery, Cohen, Berlin, Long, & Phipps, 2017),

- active and primary coping strategies or secondary coping with lack of predictability (Compas et al., 2017; Haase et al., 2017),
- decreased parental stress and anxiety and maternal mental health (Hilliard et al., 2015; Traub & Boynton-Jarrett, 2017), and
- increased social supports and social integration (e.g., Compas et al., 2017; Haase et al., 2017).

Unfortunately, many children with chronic illness do not evidence these factors, resulting in externalizing, internalizing, or peer difficulties (e.g., Guilfoyle, Monahan, Wesolowski, & Modi, 2015; Pinquart & Shen, 2011). Children's behavioral strengths (e.g., self-control, initiative), as well as their coping style, also have emerged as protective factors (Compas et al., 2017).

Internalizing Problems in Conjunction With Chronic Illness

The most common comorbid concerns that occur in conjunction with chronic illnesses are internalizing problems such as depression, anxiety, and withdrawal. Anxiety and depression are the most commonly occurring comorbidities that can precede, co-occur, or develop over time in relation to chronic illness (Schraegle & Titus, 2017). For example, 23% to 41% of children with epilepsy experience symptoms of anxiety, depression, or withdrawal (Gur-Ozmen, Leibetseder, Cock, Agrawal, & von Oertzen, 2017; Schraegle & Titus, 2017). The high levels of comorbid internalizing symptoms have been associated with epilepsy-related stigma (Schraegle & Titus, 2017), as well as fear of having a seizure, social isolation, and restrictions to activities (Clary, Vander Wal, & Titus, 2010). Children with chronic illness may have to deal with increased dependency on parents and intermittent isolation from peers (e.g., Kraaij & Garnefski, 2012). Developmentally, adolescents with epilepsy demonstrate a greater risk of internalizing psychopathologies, such as depression and anxiety (Schraegle & Titus, 2017), coinciding with the need and desire for them to attain greater autonomy and independence. Chronic illness, particularly when not well-controlled, also may result in sporadic school attendance, along with associated academic difficulties and difficulty in social-emotional areas (e.g., Shaw & McCabe, 2008). In particular, poor peer relationships have been found to be associated with later academic problems and a range of behavioral problems (Hymel, Rubin, Rowden, & LeMare, 1990), as well as some indications of increased risk of suicidal ideation or behavior (Favreau, Bacon, Joseph, Labrecque, & Lavoie, 2012; Greydanus, Patel, & Pratt, 2010).

Externalizing Problems in Conjunction With Chronic Illness

Notably, some children with chronic illness demonstrate more disruptive behaviors (Forrest, Bevans, Riley, Crespo, & Louis, 2011; Pinquart & Shen, 2011), which sometimes manifest in noncompliance to medical protocol or

diet. Externalizing problems include hyperactivity and other aspects of behavioral self-regulation (e.g., Lansing & Berg, 2014). From a neurocognitive perspective, the domain of executive function is implicated when considering attentional control, behavioral inhibition, planning of behavior, problem solving, and shifting of behavior in response to contextual cues (e.g., Anderson, Jacobs, & Anderson, 2008; Miyake et al., 2000). In combination, these skills are considered critical for social and emotional development and subsequent mental health (e.g., Lah & Smith, 2015). As noted with epilepsy, these deficits may manifest in symptoms consistent with ADHD. Similarly, executive function may contribute to coping and behavior associated with childhood cancer (e.g., Campbell et al., 2007). As with other chronic illnesses, the age of onset, severity, and extent of control, as well as medication effects, contribute to impaired neurocognitive deficits associated with executive function (Black et al., 2010; Luton, Burns, & DeFilippis, 2010). The links between executive function and externalizing problems have emerged in the research across populations (e.g., Granvald & Marciszko, 2016).

FOSTERING RESILIENCE AND IMPROVING MENTAL HEALTH

A number of component programs have been studied in attempts to address the protective and risk factors for behavioral health concerns. Most recently, there has been an increased awareness of the need for integrated health care that incorporates these approaches, singularly or in combination, in conjunction with traditional physician-administered medical care. From the integrated health perspective, a collaborative treatment approach is orchestrated such that mental health services are integrated into a primary care setting (Asarnow, Rozenman, Wiblin, & Zeltzer, 2015; Godoy et al., 2017; Kolko & Perrin, 2014). Given recent research on factors that contribute to resilience and the agreement that resilience is malleable (Hilliard et al., 2015; Monaghan et al., 2015), it is important to consider the protective and resilient factors noted earlier in terms of prevention, as well as in response to difficulties. Further, given the importance of family and peers to positive adjustment, activities aimed at fostering resilience and improving quality of life should address family members and peer relations, as well as the individual child or adolescent with the chronic illness. Of the potential concerns, the most often addressed are coping strategies (Compas et al., 2017) and treatment adherence (Gonzalez, Tanenbaum, & Commissariat, 2016), with an emphasis on adaptive behaviors, including problem solving and seeking support (Hilliard et al., 2015).

Educational Interventions

To address some of the stress and anxiety surrounding a chronic illness for the child, parents, and teachers, some degree of educational activity is needed

(Guilfoyle et al., 2017). Education is considered a modifiable target for intervention that addresses knowledge, beliefs, and related cognitive constructs (Gonzalez et al., 2016). Educational interventions serve to empower the child and his or her family, with some evidence of improved coping skills and treatment adherence as a result (Kintner et al., 2015). Educational programs have been developed for epilepsy (e.g., May & Pfäfflin, 2005), asthma (Kintner et al., 2015), and pain management (e.g., Tang et al., 2014). Illness uncertainty may have a significant influence on psychological functioning, distress, and coping associated with chronic illness (Szulczewski, Mullins, Bidwell, Eddington, & Pai, 2017). With increased levels of education for children and parents, illness uncertainty may be reduced, leading to much more favorable outcomes for their psychological functioning, as well as treatment adherence. Training of physicians and medical staff to increase awareness of the potential mental health issues is also a consideration. Similarly, including education on various chronic illnesses to allay fears and myths of peers and school staff may be appropriate.

Direct Instruction

Researchers have identified strong executive function skills as predictive of resilience (e.g., Shields, Moons, & Slavich, 2017). Shields et al. (2017) suggested that the enhancement of executive function potentially could reduce stress-related health problems. From a neurocognitive perspective, and given that the most frequent deficits across chronic illness are in attention, self-regulation, and working memory, emphasis should be placed on the targeted behavior when considering interventions and the rehabilitation process (Riccio & Gomes, 2013). Encompassed under the general domain of executive function, accommodations and direct instruction in executive function skills can be helpful with treatment adherence, as well as more general problem solving (Riccio & Gomes, 2013). Only a few studies have used a neurocognitive approach to address deficits in executive function with children with epilepsy, with positive effects noted for medical adherence (e.g., Modi, Guilfoyle, Mann, & Rausch, 2016). Similar research with diabetes, asthma, and other chronic illnesses are needed.

Cognitive Behavior Therapy

The use of cognitive behavior therapy (CBT) has been studied in conjunction with chronic illness, and research has supported the effectiveness of this approach. For example, one of the recent meta-analyses concluded that skill-based CBT interventions designed to train adaptive coping strategies, delivered over multiple sessions, may be the most effective for children dealing with chronic illness (Sansom-Daly, Peate, Wakefield, Bryant, & Cohn, 2012). Others have developed CBT with a positivist focus and an emphasis on hope, adjustment, and well-being. The problem-solving approach coupled with

the psychoeducational component of CBT may be one of the reasons for the overall effectiveness of CBT with this particular population. CBT has been developed for youth with epilepsy, with improvement in some areas of adjustment (Wagner, Smith, Ferguson, van Bakergem, & Hrisko, 2010, 2011). CBT techniques also have targeted other chronic illness such as functional abdominal pain (Levy et al., 2010), juvenile primary fibromyalgia (Kashikar-Zuck, Swain, Jones, & Graham, 2005), and pediatric brain injury (Wade, Carey, & Wolfe, 2006).

Additional research is needed to determine the efficacy of CBT approaches across ages and chronic illnesses. Further, parent ability to provide care can be supported directly by allowing the parents agency (Swallow et al., 2013) and indirectly through the provision of CBT to the children. Research is needed on CBTs to better address parent agency and the effect of training positive parenting to reduce stress, as well as the effect on child function (Monaghan et al., 2015). Others have concluded that family therapy approaches may be beneficial (Savage et al., 2010). Given the importance of child–parent relationships and familial support, it has been recommended that interventions include the family, rather than only the child (Lansing, Crochiere, Cueto, Wiebe, & Berg, 2017).

Mindfulness Approaches

There is some research to support the use of mind–body interventions with children with chronic illness (Bray, Root, Gelbar, Bruder, & Menzies, 2017; Kohut, Stinson, Davies-Chalmers, Ruskin, & van Wyk, 2017). Mindfulness involves a focus on the present, having the individual attend to and regulate how they feel in the moment. Mindfulness approaches have been successfully used with youth with asthma, as well as other chronic health conditions. These approaches may include meditation, relaxation, and guided imagery. The use of mental imagery, as a part of relaxation and guided imagery, and specific to human anatomy and physiology, has been shown to yield successful outcomes in hormone regulation, glucose levels, and lung functioning, along with positive mental and physical effects in the parents of children with various illnesses (Bray et al., 2017). Some of these approaches (i.e., relaxation, guided imagery) may be suitable for use in the schools (e.g., Peck, Kehle, Bray, & Theodore, 2005).

Acceptance and Commitment Therapy

Acceptance and commitment therapy (ACT) combines components of CBT with mind–body approaches. ACT has been used successfully for individuals with chronic illness (Ernst & Mellon, 2016; Graham, Gouick, Krahé, & Gillanders, 2016) and for chronic pain (Veehof, Oskam, Schreurs, & Bohlmeijer, 2011). Ernst and Mellon (2016) argued that ACT is a behavioral therapy to foster resilience through improved psychological flexibility. Some components to ACT include opening up to and accepting negative or aversive thoughts,

consideration and reflection of the present moment, identifying what is personally meaningful, and commitment to take actions consistent with their values (Ernst & Mellon, 2016; Graham et al., 2016).

CONCLUSION

More and more children are being identified with chronic illness and surviving into adulthood. From a neurodevelopmental perspective, it is not sufficient to focus on disease-related factors. Disease processes and treatment effects cause changes to neural function with neurocognitive and social–emotional effects. These changes may be subtle or more global, with late effects evident over time as neurodevelopment continues (Armstrong, 2006). Many factors contribute to outcome, including disease-related factors that have bidirectional effects with child and family factors. At the same time, there are bidirectional effects between disease-related factors and child and family factors with behavioral health. These bidirectional effects provide an impetus for integrated behavioral health care (e.g., Asarnow et al., 2015; Kolko & Perrin, 2014).

Consistent with the neurodevelopmental model, it has been suggested that psychological adjustment problems occur and change over time as a function of disease status, overall control, and availability of newer approaches to treatment (Stanton, Revenson, & Tennen, 2007). The need for ongoing monitoring of neurocognitive functioning, as well as social–emotional development and quality of life, has been commonly suggested across all chronic illnesses (Compas et al., 2017; Schraegle & Titus, 2017). Although some children and youth with chronic illness are more resilient, chronic illness is a risk factor for neurocognitive deficits and mental health issues for the affected children and their families. Unfortunately, the existing research has suggested unmet mental health needs associated with chronic illness (see Mahendran, Speechley, & Widjaja, 2017). The behavioral health concerns may be a function of disease factors or child and family factors; they may manifest as noncompliance or nonadherence, internalizing problems, or externalizing problems.

One path to improve overall adjustment and well-being is through additional research to identify those protective factors and processes that foster resilience and the ability to adapt and cope with chronic illness over the lifetime. Intervention programs should take a variety of approaches and be adapted to the individual child, illnesses, co-occurring concerns, family, and school context to address risk factors and promote protective factors. Integrated behavioral health models focus on the interaction of medical professionals and the family, and educational efforts should begin at that level.

Direct instruction, CBT, mind–body approaches, and ACT programs have been developed to address the needs of children with chronic illness, but the evidence base may be for specific groups of children (e.g., for children with asthma). More research is needed to establish the evidence and ensure that

the materials are developmentally appropriate and individualized to the issues facing the child (Thabrew et al., 2016). Research to increase the involvement of other family members and targeted interventions to address family members' experiences and coping from a family perspective are needed. At the same time, children and youth spend considerable time in the schools; a fully integrated care model would include consideration of the school context by extending education and support to teachers and peers.

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5

Practitioner Self-Care

Mind–Body Best Practice

Paula Gill Lopez

Consider the following analogy. At the beginning of every flight, passengers are told that in the event of a drop in cabin pressure to put on their oxygen masks before helping others. These instructions recognize that people cannot help those in their charge unless they help themselves first.

A healthy school psychologist has appropriate boundaries, objective insight into the issues of those with whom they work, the ability to self-regulate their behaviors, and the capacity to model wellness and adaptive coping. This can only happen through ongoing self-care. Educational professionals are encouraged to thoughtfully develop self-care plans with strategies that fit their interests and lifestyle and adjust them as often as necessary. It is posited here that proactively practicing self-care is a necessity for school psychologists and all school professionals to productively manage stress and prevent burnout and as such should be required by all professional documents, including those that guide ethical behavior and training. There are precedents to guide us. To truly engage in mind–body best practice, we must begin with self-care.

The following verbatim reflection was written by a school psychology intern enrolled in a program that emphasizes self-care. The assignment required interns to submit weekly reflections to process anything of their choosing.

As a child, my parents always taught me how important it was to go to work. They embodied the concept of a “Protestant work ethic” and expected me to follow in their footsteps. Regardless of their health condition, they would arrive at work to do their duty and make sure to take care of their responsibilities. In addition to going to work, they would ensure that everyone else’s needs were

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Promoting Mind–Body Health in Schools: Interventions for Mental Health Professionals,
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met before their own. They always emphasized hard work, dedication, and most importantly putting others before you. No matter what, they found a way to take care of family members, coworkers, and friends even at the expense of themselves. Therefore, when I began this program I found it very difficult to grasp the concept of self-care.

As I began to practice self-care, I struggled to fully accept the idea and was concerned that practicing self-care would be contrary to my family's values. In fact, at times, I felt like putting myself first was selfish or even self-indulgent. Certainly, I did not want to be accused of being self-absorbed. However, I found that taking a small amount of time to practice self-care helped me to feel better and be more efficient. In the end, I found myself having an internal debate about self-care.

As the new school year approached, I started to think about how I could be the best me and what goals I could set for myself. While searching the web, I found a quote that spoke to me: "Self-care is not selfish. You cannot serve from an empty vessel." The more I thought about the quote, the more I realized that I needed to make self-care a priority. I have come to accept that I need to take care of myself and that self-care is an act of survival. I need to find a way to be as compassionate toward myself as I am to others. I recognize that self-care is not narcissistic or selfish but an act of self-respect. So, this year, I promise myself to take time to practice self-care and take time off when I am ill. Ultimately knowing that taking the time to practice self-care will help me to be healthier, happier, and better equipped to do my job. All that being said, I am proud to say that when I got sick recently, I stayed home. Despite feeling a bit guilty, I resisted the temptation to go to work ill. I was proactive and went to the doctor. While this may not seem like a big step to some, this was a huge success for me. Overall, I am thankful that my graduate program has challenged me to practice self-care.

This reflection from a graduate student is not an uncommon internal dialog when it comes to self-care. Approximately one third of school practitioners who participated in self-care workshops ($n = 108$) cited as one of their biggest takeaways the notion that self-care is not selfish; to serve others, one must practice self-care (Gill Lopez et al., 2018). Like the intern, workshop participants' initial opinions that self-care is selfish and self-indulgent gave way to the understanding that self-care should be prioritized because "you can't serve from an empty vessel." This chapter presents a three-pronged argument to persuade readers that, indeed, self-care is an act of survival but, moreover, it is essential for best practice. In addition, various self-care strategies are described along with their mind-body health benefits.

In this discussion, *self-care* is defined as the intentional, proactive pursuit of integrated wellness through balancing mind, body, and spirit personally and professionally (Gill Lopez, 2017). This definition has several components. *Intentional* indicates self-care is a purposeful act—it should be planned and scheduled to ensure it is accomplished. To be *proactive* is to be preemptive—doing something before it must be done; it is the difference between treating mental illness and promoting mental health. *Integrated* refers to caring for and functioning as a whole person—mind, body, and spirit. Finally, to achieve *balance*, one must attend to all aspects of their person with equal frequency.

Self-care can be divided into two categories—temporary and enduring (Gill Lopez, 2017). When using *temporary* strategies, neurotransmitters are released in the brain depending on what is happening in different brain regions. For

example, dopamine is released when an act of kindness is practiced, whereas norepinephrine is discharged when looking at a picture of a loved one (Hanson, 2013). Examples of temporary strategies are spending time with friends (addressing the spirit), eating more protein (body), and reading for pleasure (mind). These strategies do not have long-lasting effects because the “feel good” neurotransmitters are released and then subside.

Enduring strategies permanently strengthen the neurological functioning of the brain. Simply put, when information flows through the nervous system, consciously and unconsciously, and neurons fire collectively in regular patterns based on the information represented, neural structures can change (Carter, 2015; Davidson & Begley, 2012; Hanson, 2013, Newberg & Waldman, 2010). Enduring strategies are activities to which sustained focused attention is applied.

A THREE-PRONGED ARGUMENT FOR SELF-CARE

Self-care is a nonnegotiable necessity. This claim is supported here by three perspectives: (a) ethical codes, (b) burnout literature, and (c) neuroscientific research on the development of the prefrontal cortex.

Ethics

The case for self-care begins in the field of ethics. Regardless of the discipline, the universal ethical principle across all professions is “do no harm.” Specifically, “School psychologists have a legal as well as an ethical obligation to take steps to protect all students from reasonably foreseeable risk of harm” (National Association of School Psychologists [NASP], 2010, p. 2).

The NASP (2010) Principles for Professional Ethics hold school psychologists to the highest standards. Yet, noticeably absent is any explicit mention of self-care in service of that high calling. The same omission is made by the American Psychological Association (APA; 2017) *Ethical Principles of Psychologists and Code of Conduct* (APA Ethics Code). However, self-care is implied in both documents where they highlight the importance of psychologists, in their words and actions, demonstrating respect for and a commitment to just and fair treatment of all individuals with whom they work (APA, 2017; NASP, 2010).

Jacob, Decker, and Hartshorne (2010) criticized ethical codes “because they tend to be reactive” (p. 3). Take for instance NASP (2010) Standard II.1.3:

School psychologists refrain from any activity in which their personal problems may interfere with professional effectiveness. They seek assistance when personal problems threaten to compromise their professional effectiveness.

Similarly, APA’s (2017) Ethics Code states,

2.06 (b) When psychologists become aware of personal problems that may interfere with their performing work-related duties adequately, they take appropriate measures, such as obtaining professional consultation or assistance, and determine whether they should limit, suspend, or terminate their work-related duties.

Although self-care is necessary to ameliorate one's "personal problems," in a field that has prevention as one of its 10 prioritized domains, proactive self-care should be one of psychology associations' ethical standards in its own right. In the same way that mental health is much more than the absence of mental illness, proactively nurturing positive emotional states through self-care is on the other end of the continuum as alleviating harmful, disruptive emotional states. There is a precedent for including proactive self-care in ethical codes in an attempt to avoid personal problems. The American Counseling Association's (ACA) Code of Ethics (2014) names self-care as an ethical requirement:

Section C. Professional Responsibility—Introduction

Counselors engage in *self-care* [emphasis added] activities to maintain and promote their own emotional, physical, mental, and spiritual well-being to best meet their professional responsibilities. (p. 8)

Likewise, the Feminist Therapy Code of Ethics states the following:

IV. Therapist Accountability

E. A feminist therapist engages in *self-care* [emphasis added] activities in an ongoing manner outside the work setting. She recognizes her own needs and vulnerabilities as well as the unique stresses inherent in this work. She demonstrates an ability to establish boundaries with the client that are healthy for both of them. She also is willing to self-nurture in appropriate and self-empowering ways. (Feminist Therapy Institute, 1999)

In addition, the American School Counselor Association (ASCA; 2010) mandates that school counselors "practice wellness" for best practice.

Professional school counselors:

E.1.b. Monitor emotional and physical health and *practice wellness* [emphasis added] to ensure optimal effectiveness. (ASCA, 2010).

Jacob and colleagues (2010) defined *ethics* as a "system of principles of conduct that guide the behavior of an individual" (p. 1). School psychologists are required to use best practice; to accomplish this they must be at their absolute best. If this is true, it follows that one of the principles of conduct that guides behavior in the field of school psychology must be without question to practice integrated and balanced self-care proactively.

Combating Burnout

There is an epidemic of stress in our society today. Working in schools can be the epitome of stress—especially in the current climate. Stress that is not mitigated effectively can lead to burnout. Those who practice in the mental health field have high burnout rates due to the stressful nature of the work (Barnett, Baker, Elman, & Schoener, 2007; Shapiro, Brown, & Biegel, 2007; Sherman, 1996; E. H. Wise, Hersh, & Gibson, 2012). Moreover, school psychologists may have the highest burnout rates among all helping professionals (Burden, 1988; Huebner, 1993; Huebner, Gilligan, & Cobb, 2002; Mills & Huebner, 1998; P. S. Wise, 1985).

This could be due to a number of factors. First, research has found that mental health professionals who work in agency settings (hospital or community based) were more susceptible to burnout than those who work privately (Lim, Kim, Kim, Yang, & Lee, 2010; Morse, Salyers, Rollins, Monroe-DeVita, & Pfahler, 2012). Schools qualify for the higher risk category. Second, “psychologists employed by the schools may have less control over aspects of service delivery than practitioners in private practice” (NASP, 2010, p. 2). Finally, school psychologists often provide care to caregivers (e.g., teachers, parents, administrators), possibly resulting in compassion fatigue (Figley, 2002). Similarly, Weaver and Allen (2017) purported,

School psychologists are often required to interact with a large number of different stakeholders and colleagues. . . . These might include students, parents, teachers, and school administrators. Because each of these “customers” of various ages and perspectives are expecting good, supportive service in their interactions with the school psychologist, there is an implicit requirement of emotional management (e.g., expressing positive and suppressing negative emotions). (p. 277)

This results in heightened emotional labor.

According to Maslach (1986), *burnout* is defined as “a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who work with people in some capacity” (p. 61). Emotional exhaustion develops when work demands exceed personal resources, resulting in weariness to the point of no longer caring. Depersonalization happens as a consequence of not seeing people as people any longer but instead as problems to fix. Perceptions of reduced personal accomplishment foster learned helplessness, the realization that no matter how hard one tries, nothing makes a difference. Maslach and Leiter (1997) cited seven work variables that can lead to burnout: work overload, lack of control, insufficient reward, unfair treatment, breakdown of community, values conflict, and lack of fit between the person and job. There is a strong likelihood that anyone who works in schools has experienced at least one of these work variables at some point in their career.

To counteract the negative mental health effects of stress and burnout, practitioners must take care of themselves before they can care for others; otherwise, those with whom they work may be put at risk. “Poor therapist self-care is associated with increased personal vulnerability, reduced self-monitoring, poorer judgment, and, as a result, greater ethical breaches” (Keith-Spiegel & Koocher, 1985, as cited in Porter, 1995, p. 248).

Huebner and colleagues (2002) conceptualized a risk and resiliency model of burnout where risk factors interact with an individual’s strengths and weaknesses to predict resilience. Organizational and individual protective factors can lessen or prevent the negative effects of stress, promoting wellness and preventing burnout. One of the individual protective factors identified by Huebner et al. was a commitment to a personal self-care plan.

Wityk (2003) agreed: “Self-care is one of the primary methods of preventing and treating therapist burnout” (p. 5). Further, when discussing the sometimes

seemingly insurmountable stressors psychologists face that can lead to burn-out, Barnett et al. (2007) pleaded, “We must engage in active attempts to effectively manage these challenges and demands through ongoing self-care efforts. Failure to do so may result in harm to our clients, our profession, ourselves, and others in our lives” (p. 603).

To address concerns about maintaining well-being and practicing effectively given the stressful educational landscape, promoting self-care to practitioners in the school community seems logical. But are arguments cautioning against ethical breaches and burnout sufficient to extract a long-term voluntary commitment to practice self-care?

A Neurophysiological Explanation for Modeling

Education professionals can be perverse when it comes to self-care. Self-sacrifice and putting others first can be perceived as mandatory. Neuroscience research describing the development of a child’s prefrontal cortex (Hatfield, Cacioppo, & Rapson, 1993; Montgomery & Schore, 2013; Moore et al., 2012; Porges, 2004) may persuade practitioners to put themselves first for the sake of the children with whom they work. The prefrontal cortex, where responsible decision-making and self-regulation occur, continues to develop until the mid-20s and beyond. Youth learn to self-regulate through emotional contagion (being “infected” by another’s emotions and unconsciously mimicking facial, vocal, and postural feedback) and mirror neurons (transmission of internal states from one to another). The state of adults’ nervous systems greatly influences children and youth—more so than what comes out of their mouths. A child’s parasympathetic nervous system is incomplete; it is completed through the unconscious attunement with significant adults in their environment—for better or worse.

According to the neuroscience regarding how a child’s brain develops, it is critically important for adults to provide a calm, regulated presence for students’ parasympathetic nervous systems to emulate. This is especially crucial for those children who may have unstable, dysregulated adults in their home environments. Given the often-frenzied day-to-day happenings in schools, it can be challenging to maintain composure and put one’s well-being at the forefront. It can be next to impossible to remain calm, cool, and collected when one does not intentionally pursue self-care. But school professionals must strive to practice self-care to model a serene, regulated emotional state for the sake of their students’ developing prefrontal cortexes.

SAMPLE SELF-CARE STRATEGIES AND THEIR MIND-BODY HEALTH BENEFITS

To be effective, self-care has to be intentional, proactive, integrated, and balanced. In the next section, different self-care strategies empirically linked to specific physical and psychological benefits are described. Individuals must

find practices that work for their distinct lifestyle and preferences because one size does not fit all. As mentioned, two types of self-care have been conceptualized for the purpose of discussion—temporary and enduring strategies. Examples of both are provided in the hope that the reader might be inspired to learn more or even practice some of the strategies described.

Enduring Self-Care Strategies

There are two types of enduring strategies—habits and mindfulness practices. Habits change the structure of the brain by burning neural pathways that create “grooves,” making behavior automatic. Habits initially engage the prefrontal cortex to establish the behavior intentionally through repetition; however, once the habit becomes automatic, it is housed in the basal ganglia, and cognitive energy from the prefrontal cortex is no longer required (Duhigg, 2012). The other type of enduring strategy has a mindfulness component. Unlike habits, mindfulness changes brain structure by building the prefrontal cortex, increasing its physical mass and ability to focus (Davidson & Begley, 2012).

Mindfulness Practices

Mindfulness is an enduring self-care practice because it permanently changes the physical brain structure through neuroplasticity and strengthening and building the prefrontal cortex. Further, temporary self-care strategies can become enduring with the addition of a mindfulness component. *Mindfulness* has been defined as “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experiences moment by moment” (Kabat-Zinn, 2003, p. 145).

In 1979, Jon Kabat-Zinn, long-time mindfulness practitioner, author, and founder of the mindfulness-based stress reduction (MBSR) training program, implemented his newly developed MBSR program with chronically ill patients at the University of Massachusetts Medical Center. With the data he collected from his patients, he was able to demonstrate the efficacy of mindfulness for ameliorating the negative effects on various maladies, such as chronic pain, generalized anxiety, major depression, and terminal illness (Kabat-Zinn, 2003). To a large extent, research on his program has paved the way for mindfulness to enter today’s business world, hospitals, professional sports, and education by providing empirical support for what for centuries had been a religious practice. For instance, there were no studies on mindfulness in 1980, whereas in 2012 there were 477 (Mindful Staff, 2014).

Richard Davidson offered insight that is particularly relevant for a mind–body discussion (Davidson et al., 2003). Davidson and his colleagues at the University of Wisconsin–Madison’s Center for Healthy Minds have been pioneers in the neuroscientific exploration of mindfulness. Technology has emerged in the last decade that permits a literal look at brain structure and function before, during, and after meditation. Functional magnetic resonance imaging (fMRI) measures changes in brain activity by detecting blood flow. Where once there were only self-report measures to determine the efficacy of mindfulness

interventions, the advent of fMRI technology moved the scientific community closer to being able to support the claim that mindfulness can change the structure of the brain (Basu, 2018).

The 8-week MBSR program has produced research findings that include positive changes in the brain associated with affect and immune function (Davidson et al., 2003); reduced blood pressure and cortisol levels (Carlson, Speca, Faris, & Patel, 2007); significant improvements in depressive symptoms, anxiety, stress, quality of life, and physical functioning for adults and children (Gotink et al., 2015); general psychological well-being (Carmody & Baer, 2008); and enhanced cognitive functioning (Jha, Krompinger, & Baime, 2007). In addition, data from MBSR participants revealed a thicker prefrontal cortex in 8 weeks, similar to the increase in gray matter found in traditional, long-term meditation practitioners (Gotink, Meijboom, Vernooij, Smits, & Hunink, 2016; Hölzel et al., 2010; Lazar et al., 2005). A tangible change in the physical structure of the brain after mindfulness interventions is the reason mindfulness infused self-care is enduring or permanent.

Through their neuroimaging work, Britta Hölzel and her colleagues (2011) identified four mechanisms by which mindfulness works and the associated brain areas: (a) attention regulation (anterior cingulate cortex), (b) body awareness (insula, temporoparietal junction), (c) emotion regulation (prefrontal cortex, hippocampus, amygdala), and (d) change in perspective on the self (prefrontal cortex, posterior cingulate cortex, temporoparietal junction). Their work and the work of other neuroscientists have highlighted in a concrete way the mind–body connection mindfulness establishes.

Regardless of the data collection method or the type of mindfulness practiced, most researchers have agreed that mindfulness produces two primary benefits: (a) greater focused attention and (b) greater self-regulation (Hölzel et al., 2010). An emerging literature has suggested that the benefits of practicing mindfulness can help educators avoid burnout. One study found that teachers' mindfulness was negatively correlated with Maslach's burnout components (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013):

Educators' mindfulness is one aspect of social–emotional competence that may protect them from experiencing burnout and its negative consequences . . . the protective effect of mindfulness was most pronounced among more stressed and more ambitious educators. This study adds to accumulating evidence that mindfulness promotes resilience in educators and may foster healthy educators, classrooms, and students. (p. 57)

There are other researchers who have found similar results using mindfulness as a primary self-care intervention for educators and therapists to effectively manage stress and combat burnout (Flook, Goldberg, Pinger, Bonus, & Davidson, 2013; Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013; Roeser, Skinner, Beers, & Jennings, 2012; Shapiro et al., 2007).

Common mindfulness practices anchor attention in the present moment through focusing on the breath and sensations in the body, observing thoughts, and practicing loving kindness and mindful movement or yoga. Researchers have begun to study how these different types of mindfulness yield slightly

varied benefits (Kok & Singer, 2017; Sauer-Zavala, Walsh, Eisenlohr-Moul, & Lykins, 2013). Education professionals who feel there is not enough time in the day to accomplish everything will be happy to learn that the benefits of mindfulness can be obtained from short, consistent periods of practice (Gotink et al., 2016, Hölzel et al., 2010, Lazar et al., 2005), bringing nonjudgmental focused attention to daily tasks, such as washing dishes, driving to work, folding laundry, cooking, eating, and so forth (Hanley, Warner, Dehili, Canto, & Garland, 2015).

Practicing mindfulness can create the ability to pause after being triggered emotionally. This pause is facilitated in the brain through deactivating the amygdala and bringing the prefrontal cortex online to create a space to choose how to respond versus reacting automatically. Deactivating the amygdala stops the release of stress hormones into the body (Hölzel et al., 2010). Chronic stress can cause irreparable damage to the hippocampus, where information is stored and retrieved. Identifying one's chronic stressors is an important step in creating the right self-care plan.

Although mindfulness produces a range of positive outcomes for practitioners, there are self-care strategies that address specific chronic stressors. Suppose, for instance, one has a harsh inner critic who is always thinking, "I can't do anything right. I'll never be good enough." Practicing self-compassion can help alleviate the chronic stress of the inner critic. Self-compassion has a mindfulness component and is associated with reduced self-criticism; lower amounts of stress hormones; increased self-affirmation, self-encouragement, and resilience; and diminished effect of deep psychological wounds from childhood (Leary, Tate, Adams, Allen, & Hancock, 2007; Neff, Kirkpatrick, & Rude, 2007). Given these findings, greater self-compassion may act as a buffer against burnout and help to make peace with one's inner critic. Self-compassion can be practiced in a variety of simple ways. Loving-kindness meditation guides one to send good wishes to the self and others. Writing a love letter to oneself focuses on what is innately good and of value. To foster self-compassion, some people literally surround themselves with meaningful quotes as reminders of their strengths and goals.

Mindful gratitude is another self-care practice that has produced many positive benefits, evidenced by over 20 years of research (Emmons & McCullough, 2004), including physical benefits (stronger immunity, fewer body pains, lower blood pressure, better sleep), psychological benefits (greater positive affect, more alertness, joy, and optimism), and social benefits (more generosity, helpfulness, compassion, forgiveness, outgoingness). One recent gratitude study found a lasting change in the brain 3 months after the intervention (Kini, Wong, McInnis, Gabana, & Brown, 2016). Popular ways to cultivate gratitude are by keeping a gratitude journal, making as few as three to five journal entries a week, and simply counting one's blessings regularly each day. Recording gratitude, either mentally or in writing causes the recorder to scan their world for positive acts of kindness, resulting in a more optimistic outlook (Emmons, 2007).

Habits

Practicing self-compassion and gratitude can be distilled into habits. Habits have three components: (a) a cue that triggers and (b) a routine behavior that result in (c) a reward that reinforces the “habit loop” (Duhigg, 2012). To make self-compassion a habit, Fogg (2019) suggested that one should begin with a “tiny habit.” This can be done by creating a statement such as, “Before I close my eyes to go to sleep at night [cue or trigger], I will say one positive self-affirmation about the day [behavior].” The reward in this example is the “feel good” hormone dopamine (actually referred to as the “chemical of reward”) that is released as a result of the successful accomplishment of a task.

Temporary Self-Care Strategies

Self-care may seem out of reach for those who think they are too busy (or too anxious, depressed, emotionally or physically hurt, etc.). But there are temporary strategies that can reduce perceptions of busyness—for example, being awed and inspired by admiring nature (Carter, 2015). Selecting the right self-care activities and applying them consistently several times a day can help to alleviate the negative effects of stress (Carter, 2015; Hanson, 2013). Small efforts can produce big returns. Some examples are described next.

Savoring the Good

Hanson (2013) provided a method for savoring or “taking in the good,” as he called it: (a) look for positive facts and let them become positive experiences; (b) savor the positive experience—focus on it for 10 to 30 seconds, note how it feels in the body and emotions, and intensify it; and (c) absorb the positive experience through the five senses and let it soak into the brain and body, registering it deeply in emotional memory. Once the positive experience is “recorded,” it can be revisited at any time to evoke positive feelings. For example, revisiting a sunny, blue-sky July day at the beach can lift one’s spirits on a gray, gloomy day in February.

Minimum Effective Dose

When thinking about integrated—mind, body, spirit—self-care, many fall short in the area of body health. The minimum effective dose has major implications for busy people and exercise. Christine Carter, a former marathon runner, described adjusting her expectations so she can be more efficient with her time, ultimately feeling less busy and doing more. She wrote that she has become stronger, physically healthier, and pain free and regained her prepregnancy athlete weight by exercising consistently in small doses (Carter, 2015). It is better to do some exercise for even a short amount of time than to do none at all.

Honoring Ultradian Rhythms

In a 24-hour period, humans sleep and wake according to patterns. All mammals are governed by circadian (sleep wave cycle) and ultradian (intense work

wave cycle) rhythms. When people are awake, the brain cycles through different patterns, including ultradian rhythms. When engaged in intense, focused work, such as writing a psychological report for tomorrow's planning and placement team meeting, one can only be optimally effective for a certain period. Every 1 1/2 to 2 hours, there is a significant "ultradian dip" when energy drops drastically. People often work through the dip with caffeine and stress hormones. This results in an impaired "fuzzy brain" performance. When the body's natural rhythms are consistently ignored, clinical levels of depression and anxiety, stress-related illnesses, and substance abuse problems can result. Honoring ultradian rhythms with a break can help refresh and reset the brain in order to think clearly and be able to continue working effectively with cognitive intensity. The break need only take a few minutes, but it must be restful or playful and must not be anything on your to-do list or something you have to do anyway such as eat lunch. Examples include watching a short funny or heart-warming video or sitting outside for 5 minutes (Carter, 2015).

Boundaries

Choose to say "no" to create space for an intentional "yes." Boundaries provide us with a strategy to better manage our time and to practice self-care. There are several reasons people say yes to something they do not want to do. Reasons include wanting approval at any cost, not wanting to miss anything, not wanting to appear unable to do a task, needing control, thinking no one can do the task as well, and wanting to believe they can do it all. Developing the ability to say "no" according to a set of priorities can provide a greater sense of control and ability to get things done (Gill Lopez et al., 2018).

Self-Care in the Background

Being surrounded by things that evoke a feeling of joy can create a positive mood without having to do anything. For instance, if an individual loves the sound of wind chimes, all that is required to orchestrate self-care in the background is to buy chimes, hang them up, and pause every so often to hear their song. Similarly, if a pleasantly stimulated olfactory sense brings joy, diffusing favorite essential oils can create an atmosphere of relaxation (lavender) or energy (wintergreen). As a bonus, bringing mindful attention to the object of joy for a short time transforms a temporary self-care strategy into an enduring one (Gill Lopez et al., 2018).

EFFORTS TO PROMOTE SELF-CARE IN SCHOOLS

In the field of school psychology, practicing self-care requires a drastic paradigm shift. One way to affect a shift is to institutionalize it through professional documentation. Several authors writing in the area of clinical psychology have urged to "begin self-care at the top" (Norcross & Guy, 2013, p. 752) by

petitioning professional associations to explicitly include self-care in their ethics, accreditation standards, and other professional materials (Barnett et al., 2007; Norcross & Guy, 2013; E. H. Wise et al., 2012).

At least one helping profession agrees. Section 2.F.1.l. of the Council for Accreditation of Counseling & Related Educational Programs (2019) states “*self-care* [emphasis added] strategies appropriate to the counselor role” must be included in the training curriculum included in Area 1. Professional Counseling Orientation and Ethical Practice. A current lobbying effort is underway to persuade the NASP to include explicit language to mandate self-care in the current revision of the NASP ethical code and training standards.

The goal is not just to mitigate burnout but to proactively promote well-being. There are numerous articles extolling the merits of self-care for helping professionals and documenting efforts to implement self-care programs with in-service practitioners (Baker, 2003; Gill Lopez, 2017; Jennings et al., 2013; Norcross & Guy, 2013; Shapiro et al., 2007; Skovholt, 2001; E. H. Wise et al., 2012). However, few of the efforts have been specifically implemented with school personnel. See, for instance, Jennings et al.’s (2013) work with teachers and my work with school psychologists (Gill Lopez, 2017).

The importance of emphasizing and practicing self-care in preservice training programs increases the odds that self-care will be practiced in service (Bamonti et al., 2014; Barnett et al., 2007; Christopher et al., 2011; Gill Lopez, 2017; Huebner et al., 2002; McAllister & McKinnon, 2009; Newell & MacNeil, 2010; Shapiro et al., 2007; Smith & Moss, 2009). Some of the most persuasive data that self-care is a worthwhile preservice initiative are two unsolicited reflections from interns enrolled in a school psychology program that teaches self-care. One was shared earlier. Another is shared next.

In the past week, I developed a tonsil infection. . . . Being sick and having to slow down has made me focus a lot on self-care, which has made me reflect on the impact of our program on my practice of self-care. The truth is, I have taken horrendous care of myself through my academic career and hadn’t really realized the extent to which until this week. . . . Practicum Supervision really woke me up to the amount of stress I was under and how little I did to cope with that stress. . . . Sure enough, as I started to make changes, I started to feel a little better. . . . Without the facilitation of honest reflection and skill building that has been built into our program, I know now that I would have burnt out. I have been too hard on myself with the standards that I set for my own behavior and what I expect that I should be able to do in a day. I have to slow down and listen to my body. . . . I think this is something that many more academic programs need to explicitly teach as a prevention strategy.

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6

Crossing Cultural Boundaries

Integrating Eastern Mind-Body Techniques for Diverse Western Learners

Yuan Yuan Wang, Rik Carl D'Amato, Catherine Van Damme,
and Saba Mahmood

This chapter focuses on the application of mind-body techniques to diverse learners with a focus on Eastern practices for Western school environments. To help the reader understand the main concepts, all Eastern approaches have been organized into six main categories. Accordingly, this chapter has six main headings, which reflect the six Eastern-focused practice categories. These categories have been developed for heuristic purposes and represent no special order or special word use. We have developed these categories to help the reader classify a variety of critical techniques. It is important to note that some techniques are dealt with in depth (e.g., healing environments), whereas others receive only a brief review (e.g., artistic therapies). This is related to the space available in the chapter and not the usefulness or breadth of research that underlies these procedures. In addition, techniques covered in other chapters are dealt with only briefly.

The traditional Western approach to education has been practiced since the inception of our modern educational system (D'Amato, Zafiris, McConnell, & Dean, 2011). From this viewpoint, children have been taught to integrate their internal thoughts with their external environment. Thus, in the first few years of education, children learn to suppress their inner thoughts and focus on external stimuli such as lectures and oral reading. Later, children learn to read or think verbal thoughts without speaking or moving lips. Such is not the case in a more Eastern-based society (Bray & Maykel, 2016a, 2016b; D'Amato, 2016; Davis & D'Amato, 2014; Nastasi, Arora, & Varjas, 2017; van Schalkwyk & D'Amato, 2015a, 2015b).

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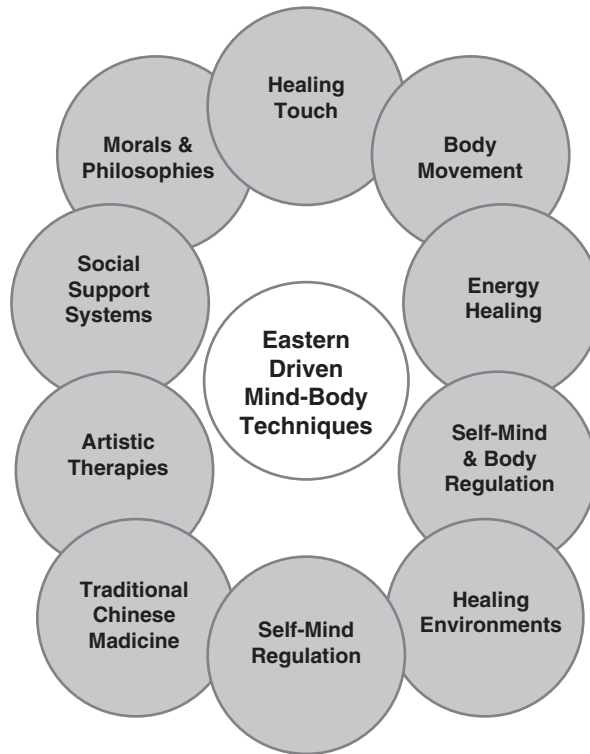
Promoting Mind-Body Health in Schools: Interventions for Mental Health Professionals,
C. Maykel and M. A. Bray (Editors)

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For many decades, D'Amato and colleagues (e.g., Davis & D'Amato, 2014; Witsken, Stoeckel, & D'Amato, 2008) have argued for two drastically different neuropsychological approaches for evidence-based school practice: the Lurian or Eastern qualitative approach and the North American or Western quantitative approach. This categorization follows the same split and is identical to the Eastern versus Western approaches. The Eastern approach is more theory driven, systemic, observation oriented, case focused, flexible, subjective, process oriented, and clinical and describes behavior, searches for patterns, and considers the functional system. The Western approach is more data driven, analytical, evaluation oriented, group focused, product oriented, objective, differential diagnosis related, fixed, group linked, and standardized and actuarial. The purpose of this chapter is to show how we in the West have compartmentalized the mind and body and help practitioners and learners understand that only through integrating and connecting these two dimensions can harmony be reached (D'Amato, 2016; Davis & D'Amato, 2014). This has been an Eastern focus for more than 2 centuries.

In drastic contrast, the integration of mind–body techniques has been a focus of mainstream Western culture for only a decade (van der Kolk, 2014), and special issues have been offered on this topic in highly regarded journals (Bray & Maykel, 2016a, 2016b; Nastasi et al., 2017; van Schalkwyk & D'Amato, 2015a, 2015b). Some related techniques such as play therapy, talk therapy, biofeedback, and eye movement desensitization and reprocessing are widely practiced in the West (Power & D'Amato, 2018; van der Kolk, 2014). Beside those techniques, there are several Eastern-style mind–body practices, including healing touch, body movement and mind healing, healing environments, traditional Chinese medicine, artistic therapies, and social support systems (see Figure 6.1). We have introduced Eastern culture-based specific practices (e.g., van Schalkwyk & D'Amato, 2015a, 2015b) to provide broader, cultural-driven activities to be considered in Western school-based settings. It is critical to consider these approaches and establish ways to test these empirically; however, although powerful and unique (D'Amato, 2016), it is evident that these techniques must become the research base, and hopefully, this chapter will stimulate future research linking Eastern mind–body techniques to an evidence-based foundation. Nonetheless, it is important to approach Western school-based techniques as an individual approaches using the Thematic Apperception Test (Power & D'Amato, 2018; van Schalkwyk & D'Amato, 2015a, 2015b). When viewing each picture, the individual sees stimuli that are unique for them, and thus, each card is a different and distinct test. Therefore, traditional reliability and validity are inaccurate with these data. Likewise, Eastern approaches must be viewed differently but using the same lens we use with qualitative tests, which can offer extraordinary details and unique insights (D'Amato & Wang, 2015; Power & D'Amato, 2018; Teglassi, 2010). From one view, Eastern approaches could be seen as magical.

All the procedures discussed are widely used for healing in the world. It is useful to integrate Eastern mind–body approaches to promote the effectiveness

FIGURE 6.1. Eastern Mind-Body Techniques

of school-based interventions in our Western educational environment. Next, we introduce Eastern mind-body approaches (see Exhibit 6.1), discuss the application of each approach, and explain how to apply each approach in a traditional school-based setting. Just understanding some of the techniques allows for easy application to change the climate of a school.

HEALING TOUCH

Two types of healing touch are discussed here: massage and Reiki (spiritual energy healing).

Massage

Massage is sometimes seen as a Chinese invention. It can be traced back to the Shang dynasty (1600–1000 BC), which advocated applying manual pressure to the body to prevent disease and maintain health (Fan, 2006). Massage is one of the most widely used therapeutic healing touch techniques throughout the world. The classic book *The Yellow Emperor's Classic of Internal Medicine* (Veith, 1972) documents massage as an important healing technique (Fan, 2006). One study found that a combination of Chinese massage and core

EXHIBIT 6.1**Components of Eastern Driven Mind-Body Techniques**

1. Healing touch
 - Massage
 - Reiki
 2. Body movement and mind healing Tai Chi
 - Zen meditation
 - Yoga
 - Qigong
 - Progressive relaxation and clinical hypnosis
 3. Healing environments
 - Horticultural therapy
 - Japanese rock gardens
 - Chinese art gardens
 - Chinese fountains
 - Aroma therapy
 4. Traditional Chinese medicine
 - Food as medicine
 - Tea Ceremonies (Japanese)
 - Acupressure
 - Acupuncture
 - Moxibustion
 - Foot massage or reflexology
 5. Artistic therapies
 - Music therapy
 - Play therapy
 - Art therapy
 - Creative dramatics or drama therapy
 6. Social support systems and philosophies
 - Confucianism
 - Education
 - Relationships
-

stability exercises can decrease the recurrence rate of nonspecific low back pain (Zhang, Tang, Chen, & Liu, 2015). A meta-analysis revealed that Chinese massage might be a beneficial adjunctive treatment for patients with essential hypertension (Yang, Zhao, & Wang, 2014). Massage has a variety of important relaxation-related benefits, which have been shown to increase productivity (Zhang et al., 2015). The traditional high-stress school environment could easily benefit from healing touch interventions.

Reiki

Reiki (spiritual energy healing) is rooted in the ancient Tibetan sutras (a medieval teaching text). The technique came to the modern world in the 1800s. Mikau Usui, the head of a Christian seminary in Kyoto, Japan, in

the mid-19th century, searched the world to find keys for healing. He read the Tibetan Buddhism ancient sutras about life and found that one key to healing is to activate and direct our universal life energy. Usui named this process Reiki, a combination of the Japanese words *Rei* (free passage) and *Ki* (universal life energy). This technique combines what we have come to call positive psychology with energy healing. Usui offered his students five guidelines to reach a peaceful mental demeanor: (a) just for today, do not anger; (b) just for today, do not worry; (c) be humble; (d) be honest in your work; and (e) be compassionate to yourself and others (Miles & True, 2003, p. 63).

Reiki can be considered Japanese hands-on healing, which requires a certified practitioner to place his or her hands on or near the individual's head, throat, chest, abdomen, knees, and feet to redistribute stagnant energy. Reiki practitioners and masters believe the life energy is always around and available. Reiki is not limited to a specific religious context; it is used by Buddhists, Baptists, Catholics, and Hare Krishnas. Reiki aims to heal the person as a whole, rather than relieve or cure a single symptom (vanderVaart, Gijsen, de Wildt, & Koren, 2009). It is typically taught in three levels: Level I focuses on recovering the natural healing abilities of the body, Level II focuses on the deeper understanding of energetic flow, and Level III stresses the development of inner spirituality and spiritual consciousness (vanderVaart et al., 2009). Reiki has been used to treat a variety of physical and psychological symptoms (vanderVaart et al., 2009). For example, Reiki healing has been used in the promotion of health and enhancement of problem solving for registered nurses in the United States (Raingruber & Robinson, 2007). The popularity of Reiki has increased over the past few decades. It can be used as an alternative and complement to traditional medical treatment. Because the underlying mechanism of Reiki remains unclear, it has been criticized (Miles & True, 2003). Although the foundation of Reiki's subtle energies cannot be measured by current technology, it is generally accepted as a low-risk intervention with a positive mental focus (Miles & True, 2003). The link this treatment has to the development of positive mental health is compelling. More research is needed to develop an evidence-based foundation for healing touch.

BODY MOVEMENT AND MIND HEALING

In this chapter, body movement and mind healing are separated into five main areas: Tai Chi, Zen meditation, yoga, Qigong, and progressive relaxation or clinical hypnosis.

Tai Chi

Tai Chi, also known as *Tai Chi Chuan*, *Taijiquan*, or *Taiji*, is an ancient form of traditional Chinese fitness exercise and martial art that was developed in the 17th century in China, which incorporates both aerobic exercise (body) and

meditation (mind). This technique has been listed in this category because it is primarily a body movement and secondarily a mind technique. It is executed with the body, although it heals the mind. Tai Chi movements can be used as self-defense when practiced quickly. The Chinese term *Tai Chi* can be translated as “supreme ultimate.” Tai Chi is a slow speed exercise, in which diaphragmatic breathing is matched with graceful motion throughout the practice. Tai Chi, especially its slow and supple movement, is rooted in the Chinese philosophy of Taoism. It is believed that Tai Chi arose from opposing forms of yin (inactivity) and yang (activity). Tai Chi has gradually evolved many styles, including the oldest Chen style and the most popular Yang style (Lan, Chen, & Lai, 2008). Tai Chi contains and integrates the components of relaxation and mental concentration, and together it can promote well-being during daily practice (Esch, Duckstein, Welke, & Braun, 2007). It has been found to be effective in improving the psychological health of both Chinese and Western populations (Esch et al., 2007). This popular activity that many individuals practice daily clearly links the mind and body; many people are seen practicing this activity outdoors in China (D’Amato, 2016).

Tai Chi and Mindfulness-Based Stress Reduction (MBSR) were used in a Boston public middle school setting as a 5-week educational program, and children aged 11 to 13 years were found to experience well-being, increased self-care, self-awareness, calmness, relaxation, improved sleep, and a sense of interconnection and interdependence with nature (Wall, 2005). Wall (2005) also argued that Tai Chi and MBSR could be used as tools in educational programs for middle school-aged children. Research in China has found that Tai Chi can decrease the number of symptoms of attention-deficit/hyperactivity disorder in school-age children (Y. M. Chen & Cheng, 2016). Tai Chi is popular in Chinese schools, and about half the students showed an interest in it according to a sample of 988 high school students (Li, 2011). Other research did not find Chen-style Tai Chi in Junior secondary school students to be beneficial in stress reduction (L. Y. K. Lee et al., 2013). These researchers used the Perceived Stress Scale (L. Y. K. Lee et al., 2013) for the measurement of stress, and it is possible that the beneficial effect of Tai Chi may not be identified by the use of a single stress-focused inventory. In recent years, some simplified, shorter forms of Tai Chi have been developed (Lan et al., 2008). Activities similar to these could be offered as part of elementary to university physical education programs, allowing students to release stress as well as train their minds.

Zen Meditation

Various styles of meditation are widely practiced around the world and have been found to have both physiological and psychological benefits (Jiang, Ryan, & Zhang, 2018). *Zen meditation* is a particular style of meditation that emerged in China in the 6th century as one of the schools of Buddhist thought, and certain aspects can be traced back to India (Brenner, 2009). Zen

incorporated Buddhist thoughts with Taoist influences (Davis & D'Amato, 2014), which emphasized the use of meditation to develop a state of mindfulness (Brenner, 2009). This method of meditation aims to control attention intentionally from moment to moment; awareness and attention are the fundamental components of Zen (Brenner, 2009). Zen focuses on the here and now, as well as on an awareness of the holistic environment rather than simply self-control (Jiang et al., 2018). This is important because the Chinese cultural context is melded with the holistic view of the here and now (see the Healing Environments section of this chapter). Research has shown that there are many neural effects of Zen meditation. Functional magnetic resonance imaging studies have shown that Zen meditation increases the blood oxygen level–dependent response in brain areas that are involved in meditation (Pagnoni, Cekic, & Guo, 2008). Some research has found an increase in cortical thickness in the brains of Zen meditators (Pagnoni & Cekic, 2007) and that gray matter loss caused by old age was reduced by Zen meditation (Pagnoni et al., 2008). It is clear that many benefits, both behavioral and physical, stem from meditation. Zen meditation is offered in Chinese temples, and people can receive brief guided practices and experience “meditation camps” (Jiang et al., 2018). As discussed in other chapters, many social and academic benefits have been shown relating to the practice of meditation in public schools.

Yoga

Yoga is an integrative physical and spiritual practice that originated in ancient India and means “yoke” or “union” to emphasize the interconnection of mind, body, and spirit. Yoga practitioners tend to be more resilient to stressful conditions, and the practice of yoga has been shown to be a mitigating factor in a variety of diseases, especially cardiorespiratory diseases (Parshad, 2004). School-based yoga programs have been found to be effective in addressing adolescent mental health issues and stress (Frank, Bose, & Schrobrenhauser-Clonan, 2014). A comparison of different styles of yoga practices is needed before general public-school use can be advocated. See Chapters 13 and 20, this volume, for additional details.

Qigong

Qigong is another traditional mind–body technique that incorporates body movement and mindfulness components. Unlike Tai Chi, Qigong is internally focused (i.e., with a focus on the inner world rather than the external environment) and is not a martial art. Qigong has been widely applied in various health conditions, such as hypertension, mental disorders, stroke, and muscular dystrophy, to help people relax and manage their disorder (M. S. Lee, Lee, Choi, & Chung, 2003; Sancier, 2001; Sancier & Hu, 1991; Tsang, Fung, Chan, Lee, & Chan, 2006). Research in Hong Kong has shown that regular Qigong

practice can reduce depression and improve well-being, including self-efficacy (Tsang et al., 2006). Researchers have argued that Qigong has biopsychosocial effects on the human body (Tsang, Mok, Au Yeung, & Chan, 2003). For example, researchers found that the benefits of Qigong practice generalized to other aspects of life besides promoting health (e.g., self-concept, social relationships), and the beneficial effect lasted for a relatively long period (Schure, Christopher, & Christopher, 2008). Although no clear explanation about the physiological mechanism of Qigong has been offered, it has been proposed that the psychophysiological effects of Qigong could involve the neuroendocrine and immune systems, speculated to be related to the hypothalamic–pituitary–adrenocortical axis and corticotropin-releasing hormone (M. S. Lee, Kang, Lim, & Lee, 2004). This means that when one changes the body, the brain too can be changed. The difficulty, of course, is that many of these traditional Chinese techniques, practiced for centuries, have not been empirically researched.

Progressive Relaxation and Clinical Hypnosis

Although space does not permit more than a mention of this technique, when used together, relaxation and hypnosis turn the mind and body into powerful allies. Around 1600 BC the noted Chinese medical leader and healer Wong Tai was said to have investigated techniques that were later developed into hypnosis. See Chapters 11 and 18, this volume, for details on progressive relaxation and hypnosis.

HEALING ENVIRONMENTS

Individuals have long attempted to understand the relationship between the individual and the world in which they live (D'Amato et al., 2011). In this section, we focus on healing environments, including horticultural therapy, Japanese rock gardens, Chinese art gardens, and aromatherapy. Although space does not permit comprehensive coverage of each area, it is important to at least introduce these approaches and interventions.

Horticultural Therapy

Horticultural therapy (HT) originated at the end of the 17th century (Lin & Jin, 2009). Research in the United Kingdom has demonstrated that gardens improve well-being by establishing a connection with nature and offering a chance to express one's creativity (Dunnett & Qasim, 2000). HT applies a nature-oriented view that can be used for healing, restoring, and improving health, learning, and well-being. HT has recently again become popular in China (Lin & Jin, 2009). This therapy is seen as integrative in helping an individual to become one with the earth through movement. In addition,

healthy foods can be grown in gardens in school settings and shared with local families.

Japanese Rock Gardens

The Japanese rock garden, also known as the dry landscape garden, Zen garden, or *karesansui*, is created using arrangements of rocks, moss, gravel, or sand as a metaphor for nature. For example, a rock can be a symbol of a mountain, whereas waves of sands (*samon*) can represent water waves. The appearance of the garden is designed to aid meditation related to nature, human beings, and life. According to Gestalt psychologists, the human brain groups visual cues together and perceives them as a meaningful whole (Koffka, 2013). The Gestalt school describes a set of laws for grouping perceptions into meaningful arrangements, including proximity, similarity, smoothness, enclosedness, simplicity, and so forth. Japanese rock garden guidelines are analogous to the Gestalt visual perception laws relating to how the brain sees and groups items. Some therapists use small sand trays as individualized rock gardens in a type of play therapy. Schools or universities can offer a Japanese rock garden as an environment for students to relax, improve aesthetic understandings, and practice meditation. For example, the University of Macau designed a Japanese rock garden for one of the residential colleges to provide a place for students to relax and learn to appreciate art. Water can also be used in the garden, and at times fountains and fish ponds are also incorporated to help individuals relax.

Chinese Art Garden

Many Chinese people appreciate the Taoist idea of “nature and man in one”; they admire nature and believe that human beings can become one with nature (Cui & Hu, 2015). They believe that human beings should behave according to the rules of nature to achieve ideal unity while living in nature. This Chinese philosophical wisdom is also applied to the Chinese art garden, which aims to enable people to feel at harmony with nature without the obstacle of artificial designs (Cui & Hu, 2015). That is, an arrangement of hill stones should elicit a feeling of natural construction rather than artificial design. The classical Chinese art garden is focused on evoking a spiritual state of admiring nature and developing an exquisite arrangement as a reflection of natural Chinese philosophical rules (Cui & Hu, 2015). Another principle of the Chinese art garden is to find important things within ordinary things; the beauty of artistic conception should also meet people’s psychological needs (X. Chen, Lin, & Luo, 2014). Such a garden leaves one relaxed and ready to learn. Although such gardens may increase productivity in public schools and places of employment, no research was found addressing that issue. Although the peacefulness of the Chinese countryside, waterfalls, and waterways are well documented (D’Amato, 2016), they are typically presented in a more narrative format describing beauty.

Aromatherapy

A related area is aromatherapy, in which essential oils and smells are used to promote physical well-being. Historically, the Chinese used oils as perfumes, drugs, cosmetics, and as means of payment. In addition, current research has noted that aroma is used in marketing, psychology, and therapy (McGonigal, 2011). Aromatherapy may offer a direct link to the brain and may be used to help individuals rapidly relax.

TRADITIONAL CHINESE MEDICINE

Of all the areas discussed in this chapter, the one that has begun to receive the most attention is traditional Chinese medicine (TCM). Books, journals, and many companies have recently started to focus on TCM, which has become an important part of integrative medicine and includes Chinese herbal medicine, acupuncture, and use of functional foods as medicine (Lu, Jia, Xiao, & Lu, 2004; Weng & Chen, 1996). TCM has its roots in the Chinese philosophy of yin-yang and the five elements (*Wu Xing*; i.e., metal, wood, water, fire, earth). It is thought that human physiology and pathology can be managed by Chinese philosophical thinking and systemic and ecological understanding. TCM relies on human sensory awareness rather than supernatural guidance or altered states of consciousness (Kaptchuk, 2002). It is a holistic health approach that aims to bring the body, mind, and spirit into harmony. TCM differs from modern Western medicine, which focuses on using medication to target specific diseases by focusing on a comprehensive view of the syndrome (*Zheng*) and emphasizing the integrity and interconnection of the human body and the surrounding social and natural environment (Lu et al., 2004). Many of these concepts are in direct opposition to the Western traditional medical model, which focuses on diagnosis and treatment. TCM stresses health maintenance and aims to enhance the body's resistance to disease to avoid illness.

In China, TCM has been used for thousands of years in clinical treatments for a variety of diseases and symptoms, such as pulmonary, cardiovascular, and pediatric, as well as mental illness. The integration of TCM and Western medicine has been used in multiple medical centers internationally. Although the mechanisms of TCM remain unclear, many Chinese herbal medicines have been proven to be effective in metabolic activities in well-designed animal experiments (Yin, Zhang, & Ye, 2008). TCM has a great and unique potential for the treatment of metabolic syndromes, such as the control of glucose and lipid metabolism (Yin et al., 2008).

TCM could be used in a variety of ways in public schools. For example, the idea of food as medicine could be easily adapted in school cafeterias. Locating a medical clinic within a school could also help in applying TCM principles to the school population.

Food as Medicine

TCM considers food and medicine to be equally important in the prevention and treatment of disease. Thus, eating the correct foods is an important part of physical health. In the TCM philosophical system, food and medicine are from the same source, and it is common to combine food with Chinese herbal medicines (Weng & Chen, 1996). The history of using functional foods in TCM can be traced back to the West Zhou Dynasty (about 1000 BCE), and the term *medicinal food* (i.e., foods used for medical purposes) was frequently documented in literature from the East Han Dynasty (about 100 BCE; Weng & Chen, 1996). There are several recipes widely used for both disease treatment and gastronomic enjoyment, such as stewed chicken with ginseng for energy improvement (i.e., Qi improvement), fish head soup with gastrodia (*Tian Ma*) for hypertension, duck eggs with green tea for diabetes, pork liver for nyctalopia (night blindness), and rice husk or brown rice congee for beriberi (Lu et al., 2004; Weng & Chen, 1996). In the nutritional theory of TCM, the taste of food has a specific link to maintaining the health of body organs. That is, the taste of bitter, sour, sweet, pungent, and salty is believed to affect the heart, liver, spleen, lung, and kidney, respectively (Weng & Chen, 1996). For instance, bitter tea (e.g., specialized green tea), is believed to improve heart health (Weng & Chen, 1996). The most extensively used health practice is drinking Chinese tea, widely consumed around the world.

The Tea Ceremony

Tea is a prominent part of Asian life and is used for health, ceremonies, and general consumption. The tea ceremony is popular in Asian cultures as a healing and relaxation event, especially in Asian countries such as Japan and China. In Japanese culture, the proverb *Ichigo ichie* (one encounter at a time) is often applied to tea ceremonies as well as to daily living. Tea adds a special component to any occasion because of the notion that each encounter exists in a unique time and space (Mayuzumi, 2006). The idea of a tea ceremony was spread from China to Japan in the 11th century as part of Buddhist meditation practices in monasteries. This philosophy encourages people to be aware of and cherish every encounter and to pay attention to each unique experience. One of the greatest tea masters, Sen Soshitsu XV from the *urassenke* school, emphasized this principle as the core philosophy for Japanese tea ceremonies. The tea ceremony is seen as connecting the mind, body, and spirit (Mayuzumi, 2006).

Formal procedures are followed in a traditional tea ceremony. The tea ceremony guest enters the tearoom with a humble and respectful attitude, sits on his or her knees with an elegant posture on the tatami mat, and prepares for this unique encounter. During the tea ceremony, people learn to cherish life, appreciate the culture of tea (mind), and practice making tea (body).

Enjoying the taste of the tea is not the only purpose of the tea ceremony (Mayuzumi, 2006). In tea making and drinking, which includes the selection of tea leaves and tableware, the environmental setting is important to the overall culture. The goal is for people to develop a feeling of harmony with nature. The tea ceremony allows people to slow down from hurried daily routines to sense the surrounding world and respect, care for, and be in harmony with the environment.

Western schools focus on achievements such as academic learning, reading, writing, and so forth. The tea ceremony could connect the Eastern positive, celebratory, and holistic approach to Western education—a tea ceremony could be held twice a year to honor individual students.

Acupuncture

Acupuncture is an important therapy in TCM and is extensively used in Asian countries such as China, Japan, and Korea (Kaptchuk, 2002). In fact, it is now used in most Western countries. Acupuncture works by inserting fine needles into precisely defined, specific points of the human body to correct disruptions of bodily harmony that cause disease (Kaptchuk, 2002). For example, headaches can be treated by placing needles in the hands, and asthma can be treated by placing needles in the feet (Kaptchuk, 2002).

Acupressure

Acupressure is a traditional Chinese therapy derived from acupuncture. Unlike acupuncture, acupressure is a noninvasive technique that works by stimulating acupoints using pressure from hands, fingers, or thumbs. Research has found that acupressure at the *Sanyinjiao* acupoint (internationally known as Spleen 6, SP6, located on the inside of the ankle, above the ankle bone) is effective in reducing pain and anxiety during dysmenorrhea, and acupressure is recommended for self-care of primary dysmenorrhea (H. M. Chen & Chen, 2004). The effectiveness of acupressure in pain relief can be related to a spinal gate control mechanism and the activation of the endogenous opioid system (Kaptchuk, 2002). In addition, one study found that the acupuncture and auricular acupressure was effective in treating menopausal hot flashes in bilaterally ovariectomized women (Zhou, Qu, Sang, Wang, & Nan, 2011). For women unwilling or unable to take hormone replacement therapy for menopausal hot flashes, acupuncture and auricular acupressure can be offered as an alternative treatment.

Moxibustion

Moxibustion (Ai Jiu) is a TCM that uses heat produced by burning herbs containing *Artemisia vulgaris* (mugwort) to stimulate acupuncture points (Cardini & Weixin, 1998). Chinese randomized controlled trials with 130 pregnant

women found that using moxibustion on acupoint BL 67 (*Zhiyin*) increased fetal activity and correct breech presentation (Cardini & Weixin, 1998). Moxibustion is frequently combined with acupuncture in disease treatment and has been found to be effective (Joos et al., 2004, 2006). Further research is needed if this is to be used with children and youth.

Foot Massage and Reflexology

Foot massage has been used for thousands of years in countries such as Egypt, India, and China. Foot reflexology, one type of foot massage, has recently become popular in many countries, including the United States and the United Kingdom (Fan, 2006). Traditional Chinese foot massage differs from foot reflexology because Chinese foot massage is based on the Chinese medical knowledge of meridians and is applied only at the center of the sole rather than all parts of the foot; in addition, self-massage is preferable to being massaged by others. Foot reflexology could be used in schools by building smooth rock paths for students to walk along to relieve tension.

CREATIVE DRAMATIC THERAPY

Chinese art-related therapies have been in use for many years (Kalmanowitz & Chan, 2012). See Chapter 14 on expressive arts and Chapter 15 on music therapy for additional information. Creative dramatics may also have been developed in early Chinese culture when activities such as shadow puppet shows and child dramatics were common. Western society could benefit from the application of many of these techniques to help children and youth develop and heal from traumatic life events (van der Kolk, 2014).

SOCIAL SUPPORT SYSTEMS AND PHILOSOPHIES

Confucianism

The collectivist nature of the political system and Confucianism have impacted Chinese teaching and learning styles. The Confucian heritage of learning is a major traditional influence on the beliefs and attitudes of many Asians (van Schalkwyk & D'Amato, 2015b). The Confucian learning tradition considers learning to involve not only the study of knowledge from texts but also the practice of moral self-cultivation (van Schalkwyk & D'Amato, 2015a, 2015b). Education is considered cultural transmission as well as moral transformation. To behave virtuously is the central goal of education; Confucius believed that virtuous behavior is essential to ensure individual success and societal harmony. More important, Confucius believed that virtue is achieved by observing, learning from, and imitating models of virtue. From

this perspective, it is important for teachers to set moral examples for students to follow.

Relationships

According to Confucian tradition, teachers are regarded as authoritative parents, and students have to respect and obey them (van Schalkwyk & D'Amato, 2015a, 2015b). The strong hierarchical relationship creates a teacher-centered learning environment (Heffernan, Morrison, Basu, & Sweeney, 2010). Confucian values of modesty and respect for the teacher reduce the likelihood of Chinese students questioning the teacher. Confucius valued effortful learning, which required hard work. He expected students to learn by best effort and believed that effort is much more important than ability. Confucius was willing to teach anyone who wanted to learn, regardless of their social class, ability, or other factors. Western researchers often mistakenly believe that Chinese students learn by passive repetition and do not want to think actively. In the traditional Confucian learning approach, people value hard work and extended effort in learning; however, this does not mean that they ignore the acquisition and practice of knowledge. Students should use what they have learned in a meaningful way, and they should have a social obligation to improve society.

Education

Under Confucianism, people are expected to “cultivate one’s moral qualities, set up family, serve for the country, and work toward equality and a harmonized world” (*Xiu shen, qi jia, zhi guo, ping tian xia*; translated by Yang, Zheng, & Li, 2006, p. 348). Confucian heritage culture is dominant in China and emphasizes a collectivist orientation, interpersonal relationships, in-group cohesion, and cooperative learning strategies (Nguyen, Terlouw, & Pilot, 2006). Students are often taught in large groups, with few one-on-one sessions. Education is a sociocultural process in which the acceptance of cultural values is vitally important when borrowing educational values and practices from another society (Cheng, 1998). The emphasis of collectivism may not fit the concept of self in countries that value individualism.

Teaching and learning in Chinese universities have been reformed with modernization and the influence of Western culture. For example, Chinese students are beginning to consider teachers and students as being in somewhat equal positions rather than in a hierarchical order as stressed by Confucianism. However, under the stress of national examinations, Chinese students today pay more attention to passing exams and less attention to creative expression. It is important for both Western and Chinese people to reconsider and relearn traditional values about teaching and learning; Chinese people should not just copy the somewhat flawed Western education system (Davis & D'Amato, 2014).

CONCLUSION

Many of the mind–body techniques mentioned in this chapter have been applied in the areas of stress reduction, happiness improvement, depression management, and mental health improvement. In the process of adapting those techniques from the East to Western school-based settings, it is important for educators to consider the extensive cultural differences and the acceptance of those techniques from a broad worldview (Bray & Maykel, 2016a, 2016b; Nastasi et al., 2017). For example, some Eastern techniques may be regarded by students from different cultural backgrounds as superstitions or not data-based. It is also crucial to hire appropriately trained professionals to use those techniques accurately in school practice settings. Future research must focus on the reliability and validity of these unique historical techniques. Proof or evidence-based research will be needed before many of these procedures can be used in public schools. Current Western society is quite toxic, and many of these activities can be used to produce harmony within a school setting. It may be time for us to consider again creating schools as havens (e.g., see D’Amato et al., 2011) as opposed to places where detrimental behaviors and violence take place. The magical ecologies of the East could certainly be used to solve many of our school woes (D’Amato, 2016). It is important to note that traditional Chinese mind–body techniques, such as herbal medicine, acupressure massage, nutrition, and Qigong, are often used in combination in the Chinese holistic view of life (Davis & D’Amato, 2014). In addition to the techniques discussed in this chapter, there are also other valuable ideas that could be adopted, such as valuing learning, esteeming parents, growing families, respecting others, and contributing to developing a productive society.

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¹Space did not allow individual studies discussed in the text to be appropriately referenced. Additional citation would support the text but could not be included due to space constraints. Therefore, these additional resources and studies can be found on this book’s companion website (<http://pubs.apa.org/books/supp/maykel/>).

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7

Ethical and Legal Considerations for Using Mind–Body Interventions in Schools

Candy Gunther Brown

Twenty first-century teachers, students, and parents face notable challenges addressed by school-based mind–body interventions. Other chapters in this volume have focused on the benefits of such programs. This chapter brings into the conversation ethical and legal considerations for how such programs might be developed and implemented to mitigate potential concerns. Popular mind–body interventions, such as Transcendental Meditation/Quiet Time, Ashtanga yoga, and Mindfulness-Based Stress Reduction (MBSR), reflect assumptions and values derived from religious and spiritual traditions, including Hinduism and Buddhism (Brown, 2013, 2019). Programs are typically presented as “secular” or “secularized” and as scientifically validated to be effective and safe. This chapter calls attention to research that reveals potential challenging, adverse, and/or religious effects, as well as contraindications and alternatives. Drawing on principles of informed consent, transparency, respect for cultural and religious diversity, and voluntarism, this chapter recommends an opt-in model of program delivery.

Portions of this chapter are from *Debating Yoga and Mindfulness in Public Schools: Reforming Secular Education or Reestablishing Religion?* (pp. 257–305), by C. G. Brown, 2019, Chapel Hill: University of North Carolina Press. Adapted with permission.

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Promoting Mind–Body Health in Schools: Interventions for Mental Health Professionals, C. Maykel and M. A. Bray (Editors)

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AUTHORIAL STANCE

My perspective is that of a historian and ethnographer of religion in America (PhD, Harvard University, 2000). I have spent the past 15 years conducting research related to mind–body interventions, including 5 years studying school-based programs and serving as an expert witness in four legal challenges.

In 2013, parents in San Diego County, California, sued the Encinitas Union School District for allegedly promoting Hinduism through an Ashtanga yoga program funded by the K. P. Jois USA Foundation (*Sedlock v. Baird*, 2013). The plaintiffs asked me to explain *religion* and *Ashtanga yoga*. Viewing my role as a public service, I testified without compensation.

In 2015, attorneys for Pennsylvania school districts asked me to evaluate two charter schools: one based on pranic healing, Arhatic yoga, and Super-brain yoga, the other a Waldorf-methods school premised on anthroposophy (*Education for New Generations Charter School v. North Penn School District*, 2016; *Good Earth Charter School v. Hatboro-Horsham School District*, 2017). I testified in legal hearings, accepting compensation once I realized how much work was involved.

In 2016, a Massachusetts parent and school board member alleged that a school mindfulness program—Calmer Choice—promoted Buddhism (Broyles, 2016). As this controversy unfolded, both the parent and Calmer Choice leaders contacted me. Informing everyone of what I was doing, I consulted with both parties but accepted compensation from neither. My findings are reported more fully in the book *Debating Yoga and Mindfulness in Public Schools: Reforming Secular Education or Reestablishing Religion?* (Brown, 2019). I do not participate in the practices about which I have testified and written, but I respect those who do and share certain values with them. I have two children in public schools, and I teach at a public university. I support the goal of better addressing the multidimensional needs of students and educators.

HOW SECULAR INTERVENTIONS CAN PRODUCE RELIGIOUS EFFECTS

Scientific studies reporting that mind–body interventions improve health or change the brain are often interpreted as evidence of secularity. This inference overlooks studies indicating that many religious and spiritual practices—including prayer and Bible reading—produce physical and mental health benefits (Brown, 2012; Koenig, King, & Carson, 2012). Indeed, functional magnetic resonance imaging research has shown that prayer, like meditation, activates specific brain regions (Galanter, Josipovic, Dermatis, Weber, & Millard, 2017). Some studies commonly cited as validating meditation involved religious practitioners and/or overtly religious practices (Luders, Toga, Lepore, & Gaser, 2009).

Research has suggested that some of the physical and mental health benefits of secularized interventions result from their religious effects (Greeson, Smoski, et al., 2015; Greeson, Webber, et al., 2011). Empirical studies have revealed

that some participants in nominally secular yoga and meditation who expect and want only secular benefits report what they describe as “religious” or “spiritual” experiences, and longer term, more intense practice correlates with changes in self-identification and affiliations (Astin, 1997; Büssing, Hedtstück, Khalsa, Ostermann, & Heusser, 2012; Carmody, Reed, Kristeller, & Merriam, 2008; Farias & Wikholm, 2015; Henrichsen-Schrembs & Versteeg, 2011; Lomas, Cartwright, Edginton, & Ridge, 2014; Park, Riley, Bedesin, & Stewart, 2016; Penman, Cohen, Stevens, & Jackson, 2012; D. H. Shapiro, 1992; S. L. Shapiro, Carlson, Astin, & Freedman, 2006; Wachholtz & Pargament, 2005, 2008).

Drawing on research in language, embodiment, and perception, in *Debating Yoga and Mindfulness* (Brown, 2019), I developed a theory to explain surprising correlations among secular and religious purposes and effects. In brief, sensory and affective experiences shape perception through three interacting processes: (a) intensification and heightened awareness of sensory experiences; (b) reinterpretation of experiences through the lens of assumptions, ethical stances, and worldviews communicated by teachers or recommended resources; and (c) cultural associations that remain available after subtracting religious language.

The best practice recommendations forwarded by this chapter are grounded in four interrelated ethical and legal principles: informed consent, transparency, respect for cultural and religious diversity, and voluntarism. The American Psychological Association’s (2017) *Ethical Principles of Psychologists and Code of Conduct* enumerates related concerns, including “Respect for People’s Rights and Dignity” (Principle E), “Unfair Discrimination” (Standard 3.01), “Informed Consent” (Standard 3.10), and “Avoidance of False or Deceptive Statements” (Standard 5.01).

INFORMED CONSENT

The term *informed consent* originated in health care tort law. In the 1957 medical malpractice case, *Salgo v. Leland Stanford Jr. University Board of Trustees* (1957), a patient awoke from surgery paralyzed, having consented to the procedure without being informed that paralysis was a known, though rare, risk. Performing the procedure without disclosing risks violated the patient’s rights of personal autonomy and self-determination (Faden & Beauchamp, 1986). The *Code of Ethics for Nurses* explains the responsibility of providers to give “accurate, complete, and understandable information in a manner that facilitates an informed decision” (American Nurses Association, 2015, p. 18). Ethical theorists Ruth Faden and Tom Beauchamp (1986) articulated three criteria:

- (1) a patient or subject must agree to an intervention based on an understanding of (usually disclosed) relevant information, (2) consent must not be controlled by influences that would engineer the outcome, and (3) the consent must involve the intentional giving of permission for an intervention. (p. 54)

Providers have an affirmative ethical obligation to volunteer full and accurate information so that participants can base decisions on “personal values,

desires, and beliefs,” including religious beliefs (Faden & Beauchamp, 1986, p. 307). Informed consent also involves transparency about strengths and limitations of scientific support, alternatives, challenging or adverse effects, and contraindications.

TRANSPARENCY

Mind-body interventions are not the only—or necessarily the most effective or safest—options for improving students’ and teachers’ overall health and well-being. Studies have reported similar benefits from nonreligious activities such as aerobic exercise (Moreau, Kirk, & Waldie, 2017), math (Draganski et al., 2006), music (Wan & Schlaug, 2010), and eating a healthy lunch (Gómez-Pinilla, 2008). Many studies of yoga and meditation use uncontrolled, pre-post designs. Others use non-active, treatment-as-usual or wait-list control groups. A summary of yoga research found that “methodological limitations (including small sample sizes, heterogeneity of controls and interventions) limit the generalizability” of findings and concluded that yoga could not be considered a “proven stand-alone, curative treatment” (Büssing, Michalsen, Khalsa, Telles, & Sherman, 2012, p. 6). The National Center for Complementary and Integrative Health (2013) yoga fact sheet noted that “other forms of regular exercise” (para. 2, 12) might produce similar benefits. The fact sheet cited a study of adults with chronic low-back pain ($N = 228$): “Yoga was not superior to conventional stretching exercises” (Sherman et al., 2011, p. 1). Research specific to school yoga found “counterintuitive increases in negative mood state and perceived stress with the yoga” (Khalsa & Butzer, 2016, p. 52), higher perceived stress and feeling worse about stressors (White, 2012), and lower social self-esteem for participants in yoga compared with physical education (Telles, Singh, Bhardwaj, Kumar, & Balkrishna, 2013). A systematic review by the U.S. Agency for Healthcare Research and Quality found that only 47 out of 18,753 meditation studies were randomized controlled trials with active controls; the review found “no evidence that meditation programs were better than any active treatment,” such as exercise or behavioral therapies (Goyal et al., 2014, p. 357). Studies in adults (Creswell, Pacilio, Lindsay, & Brown, 2014) and elementary school children (Schonert-Reichl et al., 2015) have found that although mindfulness participants self-reported decreased stress, biological markers such as cortisol levels indicated increased stress.

Mind-body interventions are not risk free or without contraindications. Therapies can bring strong feelings to the surface or exacerbate prior conditions. The “Varieties of Contemplative Experience” (VCE) study (Lindahl, Fisher, Cooper, Rosen, & Britton, 2017) recruited Western meditators ($N = 60$) in Theravada, Zen, and Tibetan Buddhist traditions who reported meditation-related experiences that participants described as “challenging, difficult, distressing, functionally impairing, and/or requiring additional support” (p. 1). Catalogued experiences included fear, anxiety, panic, or paranoia (reported by 82% of respondents); depression, dysphoria, or grief (57%); change in

worldview (48%); delusional, irrational, or paranormal beliefs (47%); physical pain (47%); reexperiencing of traumatic memories (43%); rage, anger, or aggression (30%); agitation or irritability (23%); and suicidality (18%). Symptom duration ranged from days to over 10 years, with a median of 1 to 3 years; most subjects (73%) indicated moderate to severe impairment, and 17% required hospitalization. Although the study did not address mindfulness-based programs (MBPs) and excluded children, respondents reported “challenging or difficult experiences under similar conditions” as MBPs: “in the context of daily practice [28 percent]; while meditating less than 1 hour per day [25 percent], or within the first 50 hours of practice [18 percent]; and with an aim of health, well-being or stress-reduction” (Lindahl et al., p. 26). Practitioners encountered difficulties with practices “not dissimilar from the primary components” of MBPs, such as “mindfulness of breathing” (Lindahl et al., p. 26). The VCE study is not the first to catalog challenging meditation experiences; it cites 40 reports and reviews of meditation-related difficulties.

Some programs screen for contraindications. MBSR training offered through the Massachusetts Center for Mindfulness in Medicine, Health Care, and Society (CfM) identifies “Screening Criteria for Exclusion from the Stress Reduction Program,” which includes “suicidality,” “psychosis,” “PTSD [posttraumatic stress disorder],” “depression or other major psychiatric diagnosis,” “social anxiety,” and substance “addiction” (Santorelli, 2014, pp. 6–7). Participants sign an informed consent form only after an interviewer explains one-on-one that risks include “feelings of sadness, anger, fear” and that a “history of trauma, abuse, significant recent loss or major life changes, or addiction to substances may heighten these reactions” (Blacker, Meleo-Meyer, Kabat-Zinn, Koerbel, & Santorelli, 2015, pp. 37–38). MBSR screening recognizes that group-based interventions may be inappropriate for more severe issues that require intensive, individualized care and that psychological and emotional challenges may be intensified by meditation.

Not all school programs make similar disclosures. Calmer Choice founder Fiona Jensen introduced her intervention as a “universal prevention program” (Calmer Choice, 2019, para. 1)—delivered to an “entire schools” (Calmer Choice, 2019, para. 3) without asking students to “identify challenges they may be confronting” (Calmer Choice, 2015a, para.1)—promising to reduce risks of “violence, suicide, and self-destructive behaviors in young people” (Calmer Choice, 2014, para. 2). Although MBSR training was—until the 2016 legal challenge—a prerequisite for instructors, Calmer Choice did not articulate exclusionary criteria (Medlar & Kennedy, 2015). Calmer Choice requires school districts to accept legal liability for any adverse effects (Broyles, 2016).

RESPECT FOR CULTURAL AND RELIGIOUS DIVERSITY

Public schools serve children from diverse cultural and religious backgrounds. Many school mind–body programs borrow from Asian religious traditions, as interpreted by middle- to upper-class European Americans, and target

low-income, so-called “inner-city” African Americans and Latinxs. Religious studies scholar Jane Iwamura (2011) used the phrase “virtual Orientalism” to critique American interactions with Asian cultures that involve racialization and cultural stereotyping—the blunting of distinctions among individuals. Iwamura’s analysis can be extended to interpret yoga and meditation programs directed toward non-White populations as dual racialization and cultural stereotyping—of both Asian Hindus and Buddhists and American people of color—and as implying a cultural evolution narrative of convergence on a purportedly “universal” type exemplified by elite American ideals.

The risks are two-fold. The first involves the relationship between nominally secular programs and Asian religious traditions from which they are adapted. Indian American yoga teacher Susanna Barkataki (2016) reflected that “cultural appropriation involves power. Usually a systemic imbalance of power, one that involves exploitation. Power to pick and choose what we take from a culture and to leave the rest behind” (para. 12–13). Barkataki explained that “colonizing powers, such as the British, used to take over the land of colonies then utilize and exploit the labor, natural resources, industrial power, and anything deemed of value inherent to that place” (para. 18). Today, “groups in positions of power colonize a set of ideas, practices, in other words, cultural riches” (para. 20). Yoga teachers “from the dominant culture” who elide the complexity of yoga’s aims are “culturally appropriating yoga. . . . It is taken and claimed as their own without giving any credit to where it came from” (para. 16, 20). Presenting yoga-based interventions as having been secularized may be perceived by religious practitioners as cultural and religious theft.

The second risk involves the relationship between program promoters and those denoted as special beneficiaries. Public school mind–body programs are often advertised as helping struggling, “inner-city” teachers with classroom management. An article in *Teaching Tolerance: A Project of the Southern Poverty Law Center* lauds a “Title I” Atlanta school that uses yoga to quell “bickering, fussing and general behavior problems” (p. 27) and as a “strategy for proactively managing classroom behavior” (Williamson, 2012, p. 28). The British Mindfulness in Schools Project unselfconsciously describes mindfulness as “enjoyable and *civilising* [emphasis added], for pupils and staff” (Weare, 2012, p. 2). Patricia Broderick’s *Learning to Breathe* mindfulness curriculum is marketed as an antidote to “disruptive behavior in the classroom, poor academic performance” (back cover), and “out-of-control emotions” (p. 232) that might provoke “‘acting out’ by taking drugs, displaying violent behavior or ‘acting in’ by becoming more depressed” (Broderick, Kabat-Zinn, & Kabat-Zinn, 2013, p. 10). Such rhetoric suggests reformer anxiety to protect society—and reformers’ children—from the consequences when un-“civilized” youth lose “control,” “acting in” to harm themselves or “acting out” to harm both themselves and others. Funie Hsu, an American studies scholar, education policy analyst, and mindfulness advocate, finds it particularly troublesome when school programs are used as “behavior management for students of color, especially black and brown boys” in a manner that “mystifies the structure of

social oppression” and perpetuates “racial disciplining based on negative stereotypes” (Hsu, 2014, “Right Mindfulness,” para. 7–8). Such programs arguably place undue responsibility on children to ameliorate symptoms of injustice so that public institutions do not have to do it—and carry the message that any failures or negative emotions are the fault of the children, not the system.

Promotional videos typically feature inner-city schools with large minority populations transformed by yoga and/or meditation into oases of non-stressful academic achievement, peace, kindness, and optimism. The film *Room to Breathe* portrays a White woman, Mindful Schools cofounder Megan Cowan, teaching mindfulness to African American and Latinx children in a San Francisco middle school after Cowan has overcome purported “defiance” (Long, 2012). Cowan was doubtless trying to help: acknowledging instead of ignoring neighbors in need, going out of her way to bring them empowering resources, and caring enough to persevere when her overtures met resistance. The unintended consequences can be read more critically. A White authority figure imposes her contemplative tradition on a socially less powerful captive audience, regardless of student goals or priorities. Yoga and meditation emissaries (like Christian missionaries) assume they know best what recipients need—even if beneficiaries do not know they need it or do not want it—thereby condescending to racial and ethnic others as having unenlightened cultural practices, which can be interpreted as paternalism. This may be even more problematic when program promoters exaggerate the strength of research supporting the intervention.

Risks of cultural imperialism may be exacerbated by framing mind–body interventions as secular to enter the public square. Critics caution that secular rhetoric is “capable of violence” because it obliquely “serves as an agent of socialization” (Dueck & Reimer, 2009, p. 220) for a “competing worldview” (Stratton, 2015, p. 103). Many of those serviced by school mind–body programs already have deeply cherished cultural and religious traditions and spiritual resources that they consider efficacious in coping with life’s challenges. African American and Latinx communities are statistically more religiously active—and predominantly Christian—than the non-Hispanic, White American populations who typically fund and administer yoga and mindfulness programs (Kosmin & Keysar, 2008).

VOLUNTARISM

The constitutional value of voluntarism respects the rights of individuals to make choices that may bear on conscience or identity free from overt or subtle coercion (Conkle, 2016). Although yoga is often taught during a single class period, such as Physical Education, mindfulness tends to overflow curricular boundaries. MindUP prescribes using its Core Practice three times daily. Mindful Schools envisions mindfulness as a “way of life” and

“foundation for how we live” (Sofer, 2016, para. 3). Calmer Choice (2015b) aspires to “provide full-school programs” (Calmer Choice, 2019, para. 3) that make mindfulness “part of the school-wide culture” (Calmer Choice, 2015b, para. 10). When mindfulness activities and reminders to remain mindful are scattered throughout the day, opting out may be a practical impossibility, short of withdrawing from school altogether.

When mindfulness is presented as a secular, universal program beneficial to everyone, schools may be no more amenable to allowing opt-outs from mindfulness than math. The goal of actress and movie producer Goldie Hawn is to get MindUP “absolutely mandated in every state. . . . that’s our mission” (Schnall, 2011, para. 67–68). Calmer Choice is a “universal” program that all students are “expected to attend” (Jensen, 2015, p. 3). The Jois/Sonima/Pure Edge Foundation seeks to require Ashtanga-based yoga and mindfulness competency for teacher credentialing and to make them an “essential component of the education system” (Sonima Foundation, 2012, p. O). Congressman Tim Ryan, an advocate of school mindfulness, cautioned, “I don’t think we ever want to be in a position where we are forcing the school districts to do this” (Holland, 2015, para. 21).

Coercion can take subtle forms. Argos Gonzalez is a high school teacher in the Bronx trained through the Mindful Schools Year-Long Certification Program. Gonzalez begins English class using a Tibetan meditation bell to lead a 5-minute mindfulness exercise. One of Gonzalez’s students confided to an interviewer that she had “initially refused to do the exercises, sitting defiantly while others participated. . . . Eventually, though, she realized she was alone in her resistance, and she began to go through the motions, largely because she likes and respects Gonzalez” (Davis, 2015, para. 30). This student still does not find mindfulness valuable; she participates to please her teacher and because all her classmates are compliant. As part of a required class, students have no choice but to participate or watch others day after day; repeated encouragements from a beloved teacher, combined with peer pressure, are difficult to resist.

THE LEGAL INSUFFICIENCY OF OPT-OUT CLAUSES

The First Amendment to the U.S. Constitution, passed in 1791, stipulates that “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof.” Since the mid-20th century, courts have interpreted the Establishment Clause as prohibiting public schools from endorsing religious practices such as prayer (*Engel v. Vitale*, 1962), Bible reading (*School District of Abington Township v. Schempp*, 1963), and Transcendental Meditation (*Malnak v. Yogi*, 1979). Public school students are vulnerable because they are a “captive audience” (*Engel v. Vitale*, 1962, p. 442, Douglas concurring), compelled by mandatory attendance laws to be present and susceptible to influences from teacher role models and peer pressure (*Edwards v. Aguillard*, 1987).

Allowing students to “remain silent or be excused from the room,” as through an “opt-out” clause, is legally insufficient (*Engel v. Vitale*, 1962, p. 430):

[The] Establishment Clause, unlike the Free Exercise Clause, does not depend upon any showing of direct governmental compulsion and is violated by the enactment of laws which establish an official religion whether those laws operate directly to coerce nonobserving individuals or not. (p. 430)

Programs held on campus (*Zorach v. Clauson*, 1952), during school hours (*McCullum v. Board of Education*, 1948), and/or supervised by classroom teachers (*Good News Club v. Milford Central School*, 2001) are particularly likely to send a “message of endorsement or disapproval” (*Lynch v. Donnelly*, 1984, pp. 688, 690, O’Connor concurring). Courts have expressed concern that endorsement of religion can affront religious identities or cause political divisiveness even if there is little risk of causing religious change (Conkle, 2016).

ADVANTAGES OF OPT-IN PROGRAMS

Many educators envision mind–body interventions as secular means to improve physical, mental, and emotional health and to cultivate moral character and ethical virtues. I sympathize with the goal of making helpful interventions accessible to all students and educators. Given the potential of mind–body programs to raise objections and/or produce adverse or religious effects, I recommend against integrating such practices into curricula or “school culture” or implementing them as universal interventions for entire classrooms, student bodies, or school districts. Although one-on-one informed consent interviews are resource intensive, they are more effective than literature distribution for ensuring that individuals (in the case of minors, both children and parents) understand whether practices may or may not be appropriate for them, given their backgrounds, circumstances, beliefs, values, and goals (Britton, 2016).

There is a higher barrier to participation in opt-in (active consent) than opt-out (passive consent) programs (Gillin, 2001). This may be frustrating to program leaders who want to maximize participation and distribution of benefits. Automatically enrolling participants unless they make an active decision to opt out plays on human inertia, herd instincts, respect for authority, and peer pressure. It takes thought, time, and effort to make an active decision to opt in or out. For these reasons, opt-in programs better facilitate informed consent.

Respect for consent decisions involves limiting instruction to designated periods and minimizing the frequency of sessions. Posters on classroom walls or in school hallways encourage passersby to try practices, as do brief encouragements to perform a yoga stretch or mindful breath before a test. Consequently, students who have not opted in or who have opted out may be put in the position of feeling pressured to accept beliefs, values, and/or practices or find it unwieldy to absent themselves multiple times per week or even multiple times per day.

There are many things that teachers are required to do as part of their job. In my considered opinion, yoga or mindfulness should not be one of them. The Equal Employment Opportunity Commission's (2011) interpretation of Title VII of the Civil Rights Acts of 1964 indicates that requiring yoga or meditation competency for teacher credentialing or pressuring teachers to use such curricula in their classrooms—even for the secular reason of improving instruction—constitutes “reverse religious discrimination” (§12-IA.1).

My best practice recommendations for those who want secular school programs that provide the benefits of yoga, mindfulness, and/or meditation may be enumerated as follows.

What to Cultivate

- Informed consent
 - Provide information about strengths and weaknesses of scientific evidence, including study quality, funding sources, and researcher allegiances.
 - Make participants aware of evidence supporting alternatives, such as aerobic exercise or resting with eyes closed.
 - Inform prospective participants of risks of challenging, adverse, and/or religious effects and contraindications (history of trauma, PTSD, or abuse; depression; suicidality; addiction; psychological disorders).
 - Follow an informed consent protocol that includes one-on-one, face-to-face consultations that involve participants and, in the case of minors, parents.
- Transparency
 - Be up-front in communicating with school administrators, teachers, children, and parents about religious roots of secularized practices.
 - Explain how practices have been secularized, specifying what has been removed or modified and what has been retained and for what reasons.
 - Disclose any personal affiliations with religious or spiritual concepts, values, practices, training programs, or communities related to mind-body interventions.
- Respect for cultural and religious diversity
 - Exercise special care to respect the cultural and religious traditions in which the interventions developed, as well as traditions of prospective participants.
 - Be sensitive to economic and racial power dynamics and proactively guard against presenting elite ideals as universal.
 - Be aware that religion takes experiential as well as doctrinal forms. Religion consists of more than language, and practices can not only

express but also instill or reshape beliefs and ethical stances. Mind–body interventions are complex practices that are not reducible to physical techniques.

- Respect and accommodate religious objections, even if authorities deem practices fully secular. For some children, parents, and teachers, no amount of program modification will resolve concerns that mind–body interventions violate conscience. The state cannot determine secularity by fiat.
- Voluntarism
 - Offer programs on a voluntary, opt-in versus opt-out basis.
 - Limit practices to designated instructional times, rather than interspersing activities (yoga stretches or mindful breaths) or attitudinal reminders (to maintain a mindful stance or apply yoga principles) through loudspeaker announcements or posters or during other classes or schoolwide assemblies because students who have not opted in may be present.

What to Avoid

- Terms (whether English, Sanskrit, or Pāli) that are likely to evoke religious ideals
 - *Yoga* or *mindfulness*. Students who experience benefits from practices so denoted may seek out additional yoga and mindfulness resources, many of which are overtly religious, spiritual, Hindu, and/or Buddhist. Instruction in stretching, deep breathing, and focus does not require loaded terminology. Students may be more interested in trying practices labeled as *yoga* or *mindfulness*, but this is partly because these terms have spiritual connotations.
 - *Namaste*, *Om*, *dharma*, or *chakra*. Such terms suggest metaphysical concepts.
 - *Āsana* names, such as *Surya Namaskāra* (sun salutations) or *Padmāsana* (lotus). Many such names are associated with the veneration of deities or enlightenment.
- Movements, gestures, or objects that communicate religious symbolism
 - Sun salutations (even if labeled *opening sequence*), lotus (even if dubbed *criss-cross applesauce*), and resting in *Savāsana* (corpse pose). These poses were developed, and continue to be envisioned by many, as physical acts of prayer and meditation.
 - Praying hands (*añjali mudrā*), wisdom gesture (*jñāna mudrā*), or gazing points (*drṣṭi*). Such gestures and foci of attention are envisioned by many as not only expressing but also instilling religious devotion and/or shaping transcendent realities.

- Tibetan singing bowls, Zenergy chimes, or mandalas. Such objects or images point toward religious traditions and may be envisioned as spiritually powerful.
- Chants, mantras, and guided meditation or visualization scripts (e.g., loving-kindness [*mettā*], even if relabeled *heartfulness*, *friendly wishes*, etc.) that may communicate metaphysical beliefs about self and world
 - Endorsing metaphysical ideas, such as non-duality, impermanence, and interconnection
 - Teaching moral or ethical virtues, such as nonjudgment and compassion, that are premised on religious worldviews and culturally contested, as if they were universal
 - Coercing or pressuring students or teachers to participate
 - Requiring public school teachers to cultivate a personal meditation or yoga practice, enroll in MBSR or yoga studio classes or become certified by the Yoga Alliance (or other organizations whose training includes religious instruction), participate in retreats at religious or spiritual centers, or receive oversight from experts trained in religious or spiritual traditions
 - Delegitimizing expressions of religious concern by insisting that programs are secular
 - Stigmatizing students, parents, or teachers who do not choose to opt in
 - Exaggerating the strength of scientific evidence or minimizing the potential for adverse or religious effects
 - Targeting people of color or low socioeconomic status by offering financial incentives or seeking out vulnerable populations for use in promotional videos or research studies to validate programs
 - Allowing wealthy devotees or foundations to buy access to vulnerable populations
 - Using mind–body interventions as substitutes for addressing systemic racism and poverty

CONCLUSION

School-based mind–body interventions have the potential to benefit students and educators, but they also raise important ethical and legal questions. This chapter calls attention to issues of informed consent, transparency, respect for cultural and religious diversity, and voluntarism. It recommends an opt-in model of program delivery.

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MIND-BODY HEALTH INTERVENTIONS FOR SCHOOL-BASED CONCERNS

8

Positive Psychology and Multidimensional Adjustment

Lea A. Theodore and Bruce A. Bracken

In 1952, Dr. Norman Vincent Peale published his internationally acclaimed book, *The Power of Positive Thinking*. Since then, Peale's book has sold more than 5 million copies, and nearly 70 years postpublication the book retains a four-star rating on Amazon.com. Peale's book, largely based on the power of faith and prayer, emphasizes that positive thinking can influence one's life in many positive and productive ways. During the 7 decades since Peale's book, many writers have espoused the perceived value of positive thinking. In the vein of positive thinking, Martin Seligman (1995) wrote *The Optimistic Child* and began a growing movement within the field of psychology referred to as *positive psychology*. Along the lines of positive human development, Bracken (1992) published the *Multidimensional Self Concept Scale* (MSCS), which is based on a model that emphasizes the importance of six life contexts on a person's developing perceptions of "self": social, family, academic, affect, competence, and physical domains. Bracken's approach to self-concept introduced an acquisition model that recognizes the importance of self and other perspectives and four standards of self-evaluation (i.e., absolute, comparative, ipsative, and ideal)—the model was addressed with emphasis on positive psychology in Gilman, Huebner, and Furlong's (2009) *Handbook of Positive Psychology in Schools*. The focus of this chapter is to frame positive thinking, positive psychology, and the acquisition of healthy multidimensional adjustment collectively in a comprehensive approach.

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POSITIVE PSYCHOLOGY

The importance of positive self-views are evidenced by a broad literature base that reveals that people with positive self-views tend to be happier (Swann, 1990), better adjusted (Dumont & Provost, 1999), and more popular (Jackson & Bracken, 1998); have a better subjective sense of well-being (DeNeve & Cooper, 1998; McCullough, Huebner, & Laughlin, 2000); and profess greater life satisfaction (Diener, 1984; Diener & Diener, 1995; Huebner, 1994; Huebner, Gilman, & Laughlin, 1999; Terry & Huebner, 1995) than individuals who have negative self-views. Hence, the emphasis on “immunizing” individuals against negative self-views and potential pathology by emphasizing positive thinking and positive psychological orientations is highly desirable.

As an introduction to the topic, Seligman and Csikszentmihalyi (2000) explained, “A science of positive subjective experience, positive individual traits, and positive institutions promises to improve quality of life and prevent pathologies that arise when life is barren and meaningless” (p. 5). From these roots, the emphasis on positive thinking and positive psychology has grown exponentially like a tree that branches outward, creating an expanding collection of thoughts and practice. At its core, positive psychology emphasizes the development of a healthy orientation toward life; its branches include intentional positive practices, such as prayer, gratitude, hope, mindfulness, purpose, kindness, optimism, self-acceptance, love, and so on. It is clear that agreement exists among professionals that helping children, adolescents, and adults develop a positive self-view is a worthwhile goal. As such, developing a healthy self-view requires a sound working theory that is focused in its application, oriented both intrapersonally and interpersonally, and context- or domain-specific.

CURRENT INTERVENTIONS IN POSITIVE PSYCHOLOGY

The trend of preventing psychopathology in children, adolescents, and adults has given way to a more proactive approach: to instill and promote strategies and skills that contribute to a meaningful life and that can be used in times of stress and carried out in perpetuity. Indeed, research has shown that numerous psychological, social, and academic benefits are afforded to those individuals who maintain incrementally higher levels of well-being. The branches of the positive psychology tree are too numerous to mention in this chapter, but the most common intervention emphases are addressed, along with their overall effects as summarized in meta-analyses.

Mindfulness

Mindfulness involves the intrapersonal, intentional focus of one’s attention on present experiences occurring in the moment. Mindfulness activities often include various forms of meditation, formal or informal, and related quieting

activities that promote focusing on the present while attenuating past or future thoughts or concerns. Baer's (2003) meta-analysis of mindfulness interventions posited that the literature promotes mindfulness as an agent for positive cognitive change, improved self-management, improved relaxation, and greater acceptance of one's condition related to chronic pain, anxiety, fibromyalgia, psoriasis, or being in psychotherapy for a variety of reasons. Baer reported that mindfulness interventions generally produced moderate to large effect sizes with a variety of positive outcome measures at both posttest and follow-up (e.g., pain, memory, physical symptom reduction, self-esteem). Please see Chapter 9 in this book on mindfulness for additional information.

Forgiveness

As a therapeutic intervention, *forgiveness* focuses on reducing vengeful, angry thoughts and increasing positive thoughts toward the offending person. Overall, forgiveness interventions have resulted in significant changes in depression, anxiety, unforgiving thoughts, and hope (Wade, Hoyt, Kidwell, & Worthington, 2014).

Gratitude

Being thankful for the positive things in one's life is exemplified in one's *gratitude*. It has been surmised that the act of being grateful elicits positivity in areas such as life satisfaction (Froh, Kashdan, Ozimkowski, & Miller, 2009). The question is whether positive outcomes result from enhancing one's level of gratitude through intervention activities. The answer to that question is that gratitude interventions tend to produce small effects in positive outcome conditions, such as psychological anxiety, well-being, and overall sense of gratitude. Gratitude interventions appear to be of limited value as an intervention for anxiety and well-being and produce generally small positive outcome effects (Froh et al., 2009).

With respect to children and adolescents, gratitude interventions used in schools typically focus on strategies such as counting blessings, journaling gratitude on a regular basis (Froh et al., 2009), and using psychoeducational curriculums that teach children how to be grateful (Froh & Bono, 2014; Froh et al., 2014). Research has demonstrated positive correlations between gratitude interventions with adolescents and enhanced overall life satisfaction (Froh et al., 2009), which promote bonding and, consequently, a positive school climate. For additional information, please see Chapter 10 on mindful gratitude.

Hope

As an intervention, hope is a bit nebulous and its benefits less clear. Snyder, Irving, and Anderson (1991) defined *hope* as a positive motivational state based on a derived sense of agency and pathway—that is, goal-directed energy and

appropriate goal-directed planning. Research has shown that there is limited efficacy in the use of hope as an intervention for positive psychology, particularly in the workplace (Reichard, Avey, Lopez, & Dollwet, 2013).

Self-Concept

Self-concept interventions consistently result in moderate to large effect sizes with a variety of positive outcomes, but the effects are greater when the intervention is focused on specific domains of self-concept and when the intervention is intended to improve self-concept intentionally rather than improve self-concept incidentally (e.g., O'Mara, Marsh, Craven, & Debus, 2006). Thus, when using self-concept interventions, consideration should be given to a specific area (e.g., academics, self-esteem) to enhance psychosocial adjustment. O'Mara et al. (2006) concluded,

Given the importance of having a high self-concept and the money and time invested into implementing enhancement programs, it seems timely for researchers and practitioners to capitalize on developments in multidimensional self-concept theory and instrumentation to create an array of interventions that target domain specific facets of self-concept. (p. 201)

Consistent with the specific interventions cited previously, research has shown small to moderate benefits derived from positive psychology interventions, with the exception of mindfulness and self-concept, which seem to produce overall larger effects, especially when domain-specific in orientation (Sin & Lyubomirsky, 2009).

Interventions Summary

In summary, the question of whether various positive psychology intervention approaches generally result in positive outcomes reveals low to moderate effects across the spectrum of approaches used. Just as O'Mara et al. (2006) found that domain-specific self-concept was greatly enhanced through focused interventions, rather than global interventions, it is likely that the application of any positive psychology approach might be far more powerful and yield significantly stronger outcomes if the intervention is focused on a specific life-domain, rather than life in general. The next section of this chapter addresses the domain-specific model of psychosocial adjustment promoted by Bracken (1992, 1996, 2009, 2017), which is proposed as the basis of a domain-specific orientation toward facet-based positive psychology interventions.

A CONTEXT-DEPENDENT MODEL OF POSITIVE SELF-VIEWS

The *self* has been a fertile psychological construct with a history dating back to the early writings of William James (1890/1983). James conceived of self-esteem as a ratio between one's objectively determined skills and abilities and

his or her actual or accurately perceived accomplishments. Although James's formula is illustrative, it fails to take into full account the accuracy of one's presumed abilities or perceived accomplishments or the interactive influence of environmental factors on a person's perceptions and developing abilities and achievement.

By emphasizing the individual rather than the interaction of the individual and the influences of an external environment, James set the stage for a cognitive–affective self-system that emphasizes the self as an important and authentic entity. Over time, the self has contributed to a larger “self-system,” including all varieties of self attributes, including self-actualization, self-control, self-confidence, self-discipline, self-esteem, self-regulation, and so on, wherein the self is responsible for maintaining control, regulation, discipline, or achieving some discernable level of esteem, actualization, or confidence. As such, it is the self then that determines whether it will be happy and positive or unhappy and negative in orientation.

The heart of such a self-system is a presumed controlling agent within the individual called the *self*. This inferred but unseen self has continued to be widely accepted in cognitive and lay circles as the essence of the individual. Skinner (1990) spoke directly to the issue of the self and its relevance to psychology:

In face-to-face contact with another person, references to an initiating self are unavoidable. There is a “you,” and there is an “I,” I see what “you” do and hear what “you” say and you see what “I” do and hear what “I” say. We do not see the histories of selection responsible for what is done and therefore infer an internal origination, but the successful use of the vernacular in the practice of psychology offers no support for its use in a science. In a scientific analysis, histories of variation and selection play the role of the initiator. There is no place in a scientific analysis of behavior for a mind or self. (p. 1209)

From a behavioral perspective then, the self might be thought of as a pattern of behavior that is sufficiently unique to an individual to be identified as the core of that individual (Bracken, 1992). As a psychological construct, the self cannot be seen and evaluated directly as being positive or negative, happy or sad, grateful or ungrateful, hopeful or lacking in hope, but inferences are made just the same based on a person's unique personal behaviors and behavioral patterns.

Following in the tradition of Skinner and behavioral theory, Bracken (1992) proposed a behaviorally oriented model of psychosocial adjustment that uses the term *self* only as a reference to the individual. This model in part describes how healthy individuals develop.

Global Versus Domain-Specific Selves

James's orientation toward the self not only led the field toward a cognitively oriented self-system but it also set the stage for the commonly held perception of self as a unitary human characteristic; that is, there is only one self within an individual.

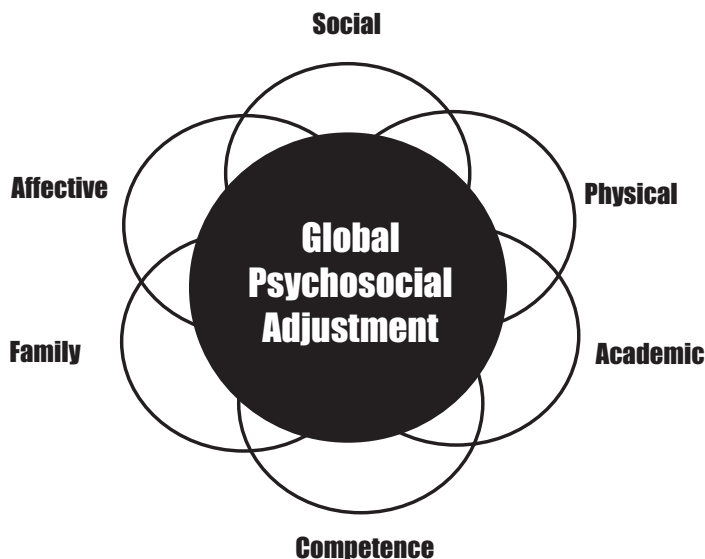
Multidimensional Self

Psychologists now recognize that there are multiple important life contexts in which individuals interact that lead to a person's multidimensional, context-dependent psychosocial adjustment (Bracken, 1992, 1996, 2009, 2017). Bracken proposed six universal life contexts (social, family, academic, affect, competence, and physical) that to some lesser or greater degree shape a person's level of adjustment. Figure 8.1 depicts this model in a Venn diagram that highlights the six important life domains and how the domains overlap with other domains to create specific subdomains (e.g., social and competence overlap to create social competence), and at the heart of the diagram where all domains overlap, there is the representation of global psychosocial adjustment (i.e., general affectivity).

To test the universality of the proposed six context-dependent domains proposed in the multidimensional model, Bracken, Bunch, Keith, and Keith (2000) conducted a multiple instrument factor analysis. The researchers sought to examine the extent to which the six previously mentioned foundational domains were represented in five diverse self-oriented instruments. Although only one of the five instruments was based on the entire six-domain model, the MSCS, items across all five self-concept and self-esteem measures combined reliably according to the six MSCS domains or life contexts (i.e., social, family, academic, affect, competence, physical). This finding suggests that despite the theoretical orientation of various self-oriented scales, the context-dependent domains in Bracken's model were represented in each of the independent measures. That is, there appear to be several orientations to a multidimensional self, but the foundational domains appear to be universal.

In addition to being considered multidimensional, the self is now generally accepted as hierarchically structured. Such a theoretical organization presents

FIGURE 8.1. Multidimensional Psychosocial Adjustment



the global self as embodying all domains together, as in an intellectual general factor, with various intercorrelated foundational domains forming secondary levels of the self (e.g., Bracken, 1992, 1996; Epstein, 1973; Shavelson, Hubner, & Stanton, 1976). The six life domains represented in Bracken's (1992; Bracken et al., 2000) model and a brief definition follow.

Academic Self. The *academic self* represents how a person feels about himself or herself within an academic setting or in relation to the student's academic progress. Factors that affect the academic self-concept include such influences as scholastic successes and failures, ease or difficulty acquiring academic information, the student's overall intellectual or cognitive abilities, the student's relationship with others within the school, and acceptance of the student's ideas, contributions, suggestions, and so on, by others in the school setting.

Affective Self. The *affective self* is a self-evaluative awareness and acceptance of one's emotional state and those issues or conditions that contribute to different demonstrative states experienced by the individual. For example, some students are easily embarrassed, shamed, angered, saddened, or made anxious, and their ability to cope and to be resilient in the face of these negative affective states and to maintain a positive affective orientation is key to maintaining a positive affect self-orientation.

Competence Self. *Competence* is defined here as a person's evaluation of his or her ability to get basic needs met. Those individuals who have the intellectual, verbal, social, physical, financial, or other means to meet their needs in a facile manner are more likely to develop a positive sense of competence than others who are less able or who struggle more to meet their needs.

Family Self. How people feel about themselves as members of a family, within their family milieu, represents a person's *family self*. Family self-concept is dependent on many factors, including such extra-individual characteristics as family constellation, size, and family members' mental and physical health and parenting style and consistency.

Physical Self. The *physical self* is essentially expressed in how a person feels about himself or herself as a physical being, including one's physical appearance (e.g., size, attractiveness, hair or skin color), health and physical characteristics (e.g., chronic health limitations, disabilities, robust health), and prowess (e.g., coordination, stamina, agility, athletic ability).

Social Self. The *social self* reflects how a person feels about his or her ability to interact with others, participate socially, and be accepted within social settings. As with any specific domain, one should realize that there may be subareas of social self-concept that can be acquired, depending on individual successes and failures (e.g., same-sex peer relations, opposite-sex peer relations, same-sex adult relations, opposite-sex adult relations). Importantly,

social interactions and interpersonal relations are key to healthy mental health (Bracken, 2006).

Confluent Selves

Where two or more self-concept domains overlap, more *confluent* subdomains of self are represented. For example, where social overlaps with competence, the resulting segment graphically represents a subdomain that might be thought of as *social competence* or *social skills*. Where family overlaps with affect, the convergence relates to the influence that families have on individuals' affective states.

The shaded area represented in the center of the Venn diagram includes the variance shared by all the primary domains of self-concept and can be thought of as *global adjustment* or *general affectivity*. Such a hierarchical and multi-dimensional model of self-concept makes sense from an ecological and logical point of view and has empirical support (Bracken et al., 2000).

ACQUISITION OF A POSITIVE SELF-VIEW

One of the shortcomings of various positive psychology acquisition or intervention models is the lack of a clear explanation for how best one can use a positive psychology approach to improve the overall or specific area of adjustment within individuals. Bracken's (1992) model incorporates behavioral learning theory to explain how individuals acquire self-views as a function of their direct and indirect interactions with their environment and others within their environment. As individuals interact within their environment, they achieve successes (i.e., reinforcements) and experience failures (i.e., punishing experiences) to varying degrees in specific ecological contexts. People receive environmental feedback about their behavior or attributes from two feedback modes or perspectives: directly from their personal experiences (i.e., *personal perspective*) and indirectly from other individuals within their environment (i.e., *other perspective*). The feedback students receive from their environment then can be evaluated according to four standards (e.g., absolute, comparative, ipsative, and ideal). Detailed explanations of each of the two perspectives and the four standards follow.

Perspectives

Bracken's (1992) model acknowledges and incorporates two perspectives that influence how an individual perceives himself or herself (i.e., personal and other). The *personal* perspective is derived and internalized through one's direct interactions with the environment. The *other* perspective is the view of self that is gained through the eyes of others—parents, peers, teachers, siblings. As such, we incorporate perspectives from one's experiences and the feedback we receive from others to help adopt a self-view.

Standards

When we directly (personal perspective) or indirectly (other perspective) receive feedback from our environment about our performance or our characteristics, we evaluate that information according to four evaluation standards, separately and in combination. The four identified standards of self-evaluation include the (a) absolute, (b) comparative, (c) ipsative, and (d) ideal.

Absolute Standard

An *absolute standard* reflects a fairly objective personal evaluation based on directly observable outcomes. When we interact with the environment, we receive feedback on the absolute levels of our success in that interaction—we passed, failed, did moderately well, and so on. The interaction, whether evaluated privately (i.e., personal perspective) or by others (i.e., other perspective), represents an absolute, direct, and objective evaluation of a personal outcome.

Comparative Standard

The *comparative standard* is used when an individual's behavior or characteristics are contrasted with the behaviors or characteristics of another person or other people. As with the other standards, the comparative standard can be evaluated personally (i.e., personal perspective) or by others (i.e., other perspective).

Ipsative Standard

Ipsative standards represent the evaluation of one's interactions in a specific skill area in light of other individual skills or characteristics possessed by the individual. An individual who is not especially good in one skill area might exhibit positive outcomes in other domains and thereby accept that his or her skills lie not in the first skill area but in one or more of the other areas (e.g., academic).

Ideal Standard

Ideal standards are used when an ideal level of accomplishment is used as the standard of comparison by either the student (personal perspective) or by others (other perspective). Ideal goals seldom reflect realistic expectations but may be used in a healthy manner to motivate individuals to seek maximum improvement. To develop a healthy sense of self, it is important to identify reasonable and attainable goals to work toward and achieve and to work toward being the best person one can be.

When the aforementioned perspectives and standards are applied to the six domain-specific facets of self, the various positive psychology interventions can be targeted toward specific adjustment domains using a practical model of acquisition that considers multiple perspectives and a healthy application of evaluative standards.

DEVELOPMENTAL CONSIDERATIONS

The self is developmental in the sense that as a person ages, his or her behaviors and consequent self-views become increasingly crystallized within individual domains and increasingly differentiated across domains. Because infants have had limited life experiences, they would be expected to have fairly undifferentiated selves; however, as they are exposed to different contexts regularly and they differentially evaluate their interactions with and within those contexts, their context-specific selves become increasingly crystallized. Because children experience somewhat consistent outcomes within similar environmental contexts and somewhat inconsistent outcomes across different environmental contexts, these differential learning experiences accumulate and lead to well-defined, differentiated, domain-specific areas of adjustment. Thus, self-concept domain differentiation begins during infancy and continues to develop through adolescence and incrementally throughout adulthood. As such, it is important to begin emulating and demonstrating positive psychology and positive thinking approaches early in a child's life while setting the stage for healthy perspectives and realistic applications and appreciation for evaluation standards.

Developing a Healthy Self

By linking various positive psychology facets systematically with Bracken's (1992) acquisition model for developing and maintaining, as well as remediating individuals' developing selves, it is likely that more consistent and favorable results will emerge than when less systematic or theoretically sound procedures are used. Interventionists must be cognizant of several important issues to successfully enhance an individual's positive self-view. First, interventionists must recognize that the self is multidimensional, and it is much easier to target one or more individual context-specific domains for change than it is to attempt to improve a person's global or overall self. The more refined, focused, and intense the intervention, the more likely the intervention will succeed.

Second, interventionists must understand that self-views are internalized perceptions of one's successes and failures. To improve a person's domain-specific self-view, interventionists must help the person become or perceive themselves as becoming more successful or become more accepting of their abilities than they were previously. Self-view enhancement is a reasonable goal in itself; however, the goal should also be to help a person become more competent, successful, and self-accepting than he or she was previously.

Third, when we see unconditional love in the eyes of others who are watching and judging us, as well as appreciation, pride, and respect, we are likely to adopt a positive self-view. If parents, teachers, and therapists wish to improve the self-views of clients, they must become less harsh in their judgments, less critical, and less punitive and more supportive, accepting, encouraging, and reinforcing. That is, interventionists must project the hope, gratitude, forgiveness, confidence, and belief in the child that they wish children to feel about

themselves. When children feel safe from physical and emotional threats, they are freer to feel better about themselves. It is important that interventionists realize that the child sees himself or herself in part in the expressions of the viewer and that the viewer should express encouragement, optimism, and unconditional acceptance.

Similarly, the interventionist must understand that children may not have an accurate self-perception and view themselves negatively when a negative self-appraisal would not seem warranted by any realistic standard. In instances of overly critical self-perceptions (e.g., perfectionistic students), interventionists should help “reframe” students’ personal expectations, perceptions, or beliefs. Encouraging mindful reflection, talking openly and frankly about students’ feelings, and helping them to accept a less self-critical and more self-accepting perception will facilitate their adoption of more realistic overall self-expectations and more positive self-views.

Fourth, interventionists must create an environment that is rich with successful opportunities and allow for successive approximations leading toward the end goal. As students acquire confidence that they can successfully complete the range of individual steps leading to the end goal, despite the challenges, the more confident they will feel.

Fifth, interventionists should carefully use each of the four standards of evaluation, helping the student and others in the student’s environment to create a healthy situation for acquiring positive self-views. The comparative standard is one that has potential negative consequences if the contrast between the child’s abilities are highlighted as being considerably lower than the abilities or characteristics of most of his or her peers. The ipsative standard can be used to bring focus onto a child’s strengths in other areas in positive ways, highlighting personal areas of strength. The ideal standard is one that can cause a lot of damage to a child’s self-concept if not applied appropriately. By its very nature, an ideal goal is unreachable for most people. Not everyone can be the best at anything, and virtually everyone must accept that sooner or later they will be topped by someone else. Parents, interventionists, and students, however, can usefully set realistic ideal standards of evaluation and strive not always to be the best, but to be the best that they can be.

CONCLUSION

By combining a domain-specific adjustment focus with well-researched positive psychology approaches, while using a thoughtful self-view acquisition model, interventionists will more likely effect positive self-perceptions among their clients. Interventionists must ensure that rich opportunities for success are made available and that the environment is maximally nurturing and supportive. Given these simple but effective procedures, interventionists can effectively help clients develop healthy self-views by using positive thinking and positive psychology and a sound intervention approach.

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9

Mindfulness-Based Intervention in Schools

Tyler L. Renshaw

Mindfulness has become an increasingly common buzzword in schools. Indeed, developing “mindful teachers” and cultivating “mindful students” has been proposed as a worthy goal in educational settings (Renshaw & O’Malley, 2014; Schonert-Reichl & Roeser, 2016). However, such interest is not necessarily unique to schools; mindfulness has been popularized in many other corners of contemporary society (e.g., self-help and corporate business cultures). Wherever it crops up, interest in mindfulness appears to be undertaken for some therapeutic purpose—using mindfulness as a means to bring about valued personal or social outcomes. When it comes to school-based practice, the primary demand placed on the use of mindfulness has been that it is validated as an “evidence-based” approach to improving student and teacher outcomes. Careful looks at the literature suggest that the evidence supporting the use of mindfulness-based intervention (MBI) in schools is indeed promising (e.g., Klingbeil, Fischer, et al., 2017; Klingbeil & Renshaw, 2018; Klingbeil, Renshaw, et al., 2017). Yet our understanding of how to efficiently and effectively use MBI in schools is far from complete. This is not simply because “more research is warranted” to generalize positive findings across populations or outcomes but also because fundamentally different kinds of research are needed to address critical issues that will help guide school-based practice. The purpose of this chapter is to review the status of

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MBI in schools by raising and answering a handful of key questions that are relevant to researchers and practitioners interested in the topic:

- What is mindfulness and MBI?
- How is MBI structured and used in schools?
- How effective is MBI with students and teachers?
- What is still unknown about MBI in schools?
- How can MBI be applied within a multitiered system of supports in schools?

WHAT ARE MINDFULNESS AND MINDFULNESS-BASED INTERVENTION?

The literature is full of differing definitions of *mindfulness*. Probably the most common definition is that offered by Kabat-Zinn (1994), who described mindfulness as “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (p. 4). A consensus definition developed by a renowned group of scholars defines mindfulness as a two-component construct, consisting of “the self-regulation of attention so that it is maintained on immediate experience” that is paired with “a particular orientation towards one’s experience in the present moment” (Bishop et al., 2004, p. 232). Within applied psychology and education, there seems to be agreement that mindfulness can be conceptualized as a skill (which can be taught and learned like any other skill) and that this skill can be operationalized behaviorally (Renshaw & Cook, 2017). The first behavioral component could be called *present moment awareness* (PMA) and consists of orienting one’s attention to the here and now. In short, PMA is about focusing on what one is thinking, feeling, sensing, or otherwise experiencing right now. PMA can be juxtaposed with remembering or ruminating on one’s past experiences as well as with forecasting or worrying about one’s future experiences. Examples of PMA are a student attending to the experience of her stomach aching immediately before taking a test or a teacher noticing his thoughts regarding how much of a “fantastic failure” the previous lesson was. Non-examples of PMA are a student getting caught up in recollections of past test failures or a teacher pondering about how his failed lesson is an omen of his likelihood of failing further when attempting new and challenging teaching tasks in the future.

The second behavioral component of mindfulness could be called *responding with acceptance* (RWA) and refers to the quality of one’s reactions to the contents of one’s PMA. The core features of RWA are being curious about the nature of one’s experience in the present moment while either (a) intentionally staying in contact with whatever one is experiencing as long as it happens to last or (b) persisting in accomplishing a valued activity with which the experience may potentially interfere (Renshaw, 2017). RWA is antithetical to an *avoidant response*, which is characterized by changing the focus of one’s attention or engaging in other behavior to escape contact with the contents of undesirable experiences. Given that it is experientially possible to engage in PMA without RWA, true mindfulness happens only when PMA and RWA occur together or, more

specifically, when RWA immediately follows PMA. This is why Kabat-Zinn (1994) did not define mindfulness as simply paying attention but rather as paying attention in a particular way. Continuing with the cases examples mentioned earlier, examples of RWA are a student continuing to attend to her stomach aching and—despite being immensely uncomfortable—initiating the test anyway or a teacher noticing how his thoughts about failure simply come and go as he prepares to teach his next section. Non-examples of RWA are a student asking to be dismissed during the test to see the school nurse because of her stomach aching or a teacher scheming to escape from giving the previously failed lesson to another section of students (perhaps by also visiting the school nurse).

Given this two-component, skills-based definition of mindfulness, MBI can be understood broadly as any technique or combination of techniques that train PMA and RWA to bring about changes in valued outcomes. The important characteristic of MBI, then, is not necessarily the structure of the intervention but rather the functions of the intervention. If the intervention increases students' or teachers' PMA and RWA—and these increases in mindfulness are demonstrated to be associated with improvement in other outcomes—the technique may be functionally considered an MBI (Renshaw, 2016). If the technique does not serve one or the other functions, it should not be labeled an MBI. These intervention functions can be thought of as *process* outcomes and *primary* outcomes, respectively (Klingbeil, Renshaw, et al., 2017). It is experimentally possible that a purported MBI could yield changes in the process outcome (i.e., mindfulness) but not in the primary outcome (e.g., emotional symptoms), and vice versa. A verified MBI will have proved itself to produce changes in both. It may seem like a fairly straightforward requirement for any intervention that posits a therapeutic process, such as MBI, to have to empirically demonstrate that the process is activated by the technique and results in positive outcomes. Yet this mandate has not been heeded often in psychological intervention research generally (Rosen & Davison, 2003) or MBI research particularly (Hayes & Shenk, 2004). Although there are several unknowns regarding the use of MBI in schools, probably the most concerning issue is that it is still empirically unclear whether the positive effects of MBI on primary outcomes can be attributed to positive changes in mindfulness processes (Klingbeil, Renshaw, et al., 2017). To put it more bluntly, we still do not know whether it is the acquisition and application of mindfulness skills per se that are responsible for the desirable behavior changes produced by purported MBI (see the section in this chapter titled “What is Still Unknown About Mindfulness-Based Intervention in Schools?” for further support for this point).

HOW IS MINDFULNESS-BASED INTERVENTION STRUCTURED AND USED IN SCHOOLS?

MBI has a long and interesting history, which is beyond the scope of this chapter (see Renshaw & Cook, 2017, for a short tour). Suffice it to say the structure and use of MBI in schools is mostly modeled after the structure and

use of MBI in medical and clinical settings, where it evolved first as a group-based treatment for targeting physical and psychological problems and then, later, as a more intensive approach to treatment (or adjunct to treatment) for targeting more intractable behavioral problems. Currently, several therapeutic approaches could be conceptualized as MBI; they purport that their techniques drive changes in mindfulness processes that, in turn, facilitate changes in valued life outcomes. Some of these therapeutic approaches, such as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), focus exclusively or primarily on mindfulness processes (see Greco & Hayes, 2008). Other approaches, such as dialectical behavior therapy (DBT) and acceptance and commitment therapy (ACT), target mindfulness as one of several potential therapeutic processes (again, see Greco & Hayes, 2008). Although there is some evidence suggesting that MBCT, DBT, and ACT can be used effectively with youth, the majority of research and practice in schools uses MBSR-type programming, which is a small-group-based intervention modified for use in classroom settings. School settings have also given rise to a new form of MBI that combines MBSR-type practices with content and techniques derived from more traditional social-emotional learning (SEL) curricula (e.g., The Hawn Foundation, 2011). Like DBT and ACT, these SEL-type MBIs target mindfulness as one of several therapeutic processes that are purported to drive positive outcomes.

When used in schools, MBSR-type and SEL-type MBIs take the form of treatment packages that are typically structured as educational curricula. These treatment packages are usually administered as “lessons” on a weekly or biweekly basis, either in the classroom or outside it. When targeting students, school-based MBIs can be administered by teachers, other trained school personnel (e.g., school psychologists and social workers), or researchers and outside service providers contracted by the school (e.g., independent psychologists and educational consultants). When targeting teachers, MBIs have historically been administered only by researchers and outside service providers, and they are typically delivered outside the regular school day. Despite varying in format regarding the number and duration of sessions, most MBIs used in schools share several similar structural features: (a) psychoeducation regarding mindfulness and its purported relationship to valued life outcomes, (b) metaphorical and experiential exercises for practicing and applying mindfulness, (c) psychoeducation regarding other emotional-behavioral regulation strategies that might be used in conjunction with mindfulness, and (d) metaphorical and experiential exercises for practicing and applying these other emotional-behavioral regulation strategies. Although detailed descriptions of the several different MBIs available for use in schools is also beyond the scope of this chapter, interested readers can access comparative summaries of available programs via journal articles and book chapters (e.g., Greco & Hayes, 2008; Semple, Droutman, & Reid, 2017). Practitioners and researchers can also directly purchase and review curricula for several common MBIs used in schools, including MindUp (The Hawn Foundation, 2011), Learning to Breathe (Broderick, 2013), and A Still Quiet Place (Saltzman, 2014).

Other MBI curricula, however, are not available to researchers and practitioners until they pay for and receive direct training from the consultant company that created the materials (e.g., Mindful Schools: <https://mindfulschools.org>; Mindfulness in Schools Project: <https://mindfulnessinschools.org>).

As alluded to earlier, one practical barrier impeding the use of MBI in schools is the financial cost and time required for training. Given the treatment package structure of most MBIs, the materials must be purchased—and, in some instances, substantial training must be received—before administering the intervention. Although this is not necessarily “a bad thing,” it is, nevertheless, “a big thing” when considering the scarcity of time and resources available for facilitating intervention in schools. At this point, it is worth recalling the functional definition of MBI provided earlier. Given that MBIs are not dependent on any particular techniques—but rather on their usefulness in improving PMA and RWA—there is no scientific reason to prefer particular trademarked treatment packages, especially because research has yet to demonstrate that any given MBI curriculum is more or less effective than any other (see the later discussion for more on this point). The reason for adopting such marketed curricula is therefore entirely practical, and decisions made by schools or individual practitioners within schools are likely to be based more on the feasibility of a given MBI (e.g., time and resource costs for implementation) rather than its effectiveness (which is fairly comparable across the available options). It is also worth noting that most teachers and other school-based practitioners interested in using MBI in schools do not receive adequate pre-service training and supervision in this approach and are therefore likely to be dependent on the “crutch” of prepackaged curricula and/or consultant-based training. That said, we can imagine that this might not be the case forever; it is possible that future generations of educational professionals may gain fluency with MBI during preservice training.

HOW EFFECTIVE IS MINDFULNESS-BASED INTERVENTION WITH STUDENTS AND TEACHERS?

Original research regarding MBI in schools has proliferated over the past 15 years, especially as it relates to student outcomes. Several systematic reviews and meta-analyses have also been undertaken to summarize the empirical literature so that researchers and practitioners might know how to best proceed with testing and using MBI. The upshot of these reviews has been consistent on at least two points: MBIs appear to have small to moderate, positive effects across a variety of valued student outcome domains, and much more research is needed to further specify the effects of MBIs for particular outcomes and populations. What follows is a selective review of the most recent and comprehensive meta-analyses, not necessarily an exhaustive review of all available systematic reviews. Although interested readers are encouraged to peruse the other systematic reviews, it is noteworthy that scientific and practical conclusions derived from these other reviews do not differ much from

the meta-analyses discussed here (cf. Black, 2016; Black, Milam, & Sussman, 2009; Burke, 2010; Felver, Celis-de Hoyos, Tezanos, & Singh, 2016; Harnett & Dawe, 2012; Meiklejohn et al., 2012).

Zenner, Herrnleben-Kurz, and Walach (2014) published a meta-analysis of MBI conducted with youth and in schools, including 24 studies that used group-based research designs. Their analysis found overall small positive therapeutic effects for MBI across both controlled comparisons and pre-post comparisons (no control group used). Follow-up analyses showed some differential effects, with MBI having moderate positive effects on cognitive measures and small effects on measures of stress and emotional problems. Another meta-analysis, by Zoogman, Goldberg, Hoyt, and Miller (2015), identified 20 group-design studies investigating MBI with youth in schools and other community settings. Findings from this analysis were similar to those of Zenner et al. (2014), showing an overall small positive effect across outcome domains. Additional analyses failed to show differential effects, instead demonstrating consistently small positive effects for measures of mindfulness, psychological symptoms, and non-symptom outcomes. Kallapiran, Koo, Kirubakaran, and Hancock (2015) conducted a similar but more restrictive meta-analysis, using different inclusion criteria and targeting 11 controlled, group-design studies testing MBI with youth across multiple settings. Their analysis again showed an overall small positive effect across outcome domains. The most targeted and methodologically different meta-analysis to date is probably that conducted by Klingbeil, Fischer, et al. (2017), who synthesized the effects of 10 single-case design studies testing the effect of MBI on youths' disruptive behavior across school and other settings. This meta-analysis found that MBIs were moderately effective at decreasing disruptive behavior in individual youth with developmental disabilities and psychiatric diagnoses.

So far, the most comprehensive and broad meta-analysis appears to be the review conducted by Klingbeil, Renshaw, and colleagues (2017), who aggregated the effects of 76 group-design studies published before January 2016. Their analysis is noteworthy given that it identified over 2.5 times more studies than any of the previous meta-analyses (reviewed earlier) and therefore allowed for more targeted exploratory analyses. Like the previously discussed studies, Klingbeil, Renshaw, et al. (2017) found overall small positive effects of MBI across youth outcomes—for both controlled and pre-post studies. Results from a smaller subset of 12 studies that looked at maintenance effects showed that these positive outcomes persisted over time, even after the interventions were withdrawn. Furthermore, analyses demonstrated consistently small treatment effects across all observed outcome domains: mindfulness, meta-cognition and cognitive flexibility, emotional and behavioral regulation, academic achievement and school functioning, externalizing problems, internalizing problems, negative emotion and subjective distress, positive emotion and self-appraisal, physical health, and social competence and prosocial behavior. Exploratory moderator analyses also showed that MBIs were just as effective when implemented in school versus non-school settings.

Taken together, findings from these several meta-analyses suggest that MBIs are generally effective with youth and in schools—that they do indeed work to change several valued outcomes for the better. None of these meta-analyses yielded null or iatrogenic effects for overall or targeted outcome domains, further suggesting that MBIs are safe and ethically sound for use with youth. It is noteworthy, however, that the effect sizes observed when applying MBI with youth and in schools are generally smaller than those observed when using MBI with adults, whether healthy or clinical samples (e.g., Khoury et al., 2013). However, the research with youth also supports a much broader array of positive effects—showing small effects ranging across several more adaptive outcome domains compared with adults. Interpreting these effects, Klingbeil, Renshaw, et al. (2017) suggested that MBI may be best conceptualized as a subtype of preventive intervention based on the SEL principles of self-awareness and self-management (see the Collaborative for Academic, Social, and Emotional Learning: <https://casel.org>); the effects yielded by MBI are similar in magnitude and breadth to other common SEL interventions based on these principles (cf. Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Those advocating the use of MBI with teachers have made similar arguments, positing that mindfulness training is a means of enhancing educators' social-emotional functioning, which, in turn, facilitates positive outcomes in the domains of student-teacher relationships, effective classroom management, and even more effective implementation of SEL-based intervention for students (Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013).

Although much empirical work has tested MBI with clinical and healthy samples of adults, far fewer studies have focused specifically on the effects of MBI with teachers. Indeed, the number of conceptual papers and presentations recommending the use of MBI with teachers seems to rival the number of actual empirical studies testing this practice. Yet it is safe to say that some solid groundwork has been laid for this line of work; at least three systematic reviews on the topic have been published within the last year alone. Lomas, Medina, Ivztan, Rupprecht, and Eioroa-Orosa (2017) reviewed 17 studies using MBI with undergraduates studying education, elementary and secondary teachers, and postsecondary teachers; Emerson et al. (2017) reviewed 12 studies targeting preservice and in-service teachers; and Hwang, Bartlett, Greben, and Hand (2017) reviewed 16 studies focusing solely on in-service teachers. The upshot of these systematic reviews is that MBIs have mostly been used to target teachers' mindfulness, self-efficacy, stress, and burnout and that the observed effects of these interventions have mostly been positive, with the occasional negligible effect. The most clarifying review to date, however, is probably the recent meta-analysis by Klingbeil and Renshaw (2018), which provides the first true quantitative synthesis of MBI with teachers. Findings from their analysis of over 20 group-design studies demonstrated moderate positive overall effects—with small to moderate effects found for the domains of mindfulness, emotional-behavioral regulation processes, psychological distress, psychological well-being, and classroom climate. Although MBIs

with teachers are theorized to indirectly affect student achievement and performance (Roeser, 2016), it is noteworthy that these reviews identified no teacher-based studies that actually investigated student-level performance outcomes.

WHAT IS STILL UNKNOWN ABOUT MINDFULNESS-BASED INTERVENTION IN SCHOOLS?

The evidence supporting the use of MBI with students and teachers is promising, but it is far from definitive or compelling. Much is still unknown, empirically speaking, and thus much more research is needed to establish a true evidence-based approach to using MBI in schools. Although many words have been written about future directions for advancing the science and practice of MBI (e.g., Felver et al., 2016; Renshaw & Cook, 2017), what follows is only an overview of three key unknowns that are especially relevant for guiding future practice in schools. For starters, it is unknown whether some MBI treatment packages or curricula are more or less effective than others. The research with both students and teachers has proceeded primarily by multiplying variants of MBI, only a few of which have been replicated—and none of which have yet to be directly tested in comparison with each other. Thus, to take just a couple of examples, it is unknown whether Learning to Breathe is more effective for decreasing students' psychological distress than A Still Quiet Place or whether the SMART-in-Education program (Roeser et al., 2013) is better than Cultivating Awareness and Resilience in Education (CARE; Jennings et al., 2013) for reducing teachers' work-related stress and burnout. The practical problem resulting from this lack of comparative research is that there is no ready guide for determining which MBI techniques are likely to be more or less useful in helping practitioners achieve particular therapeutic goals. Relatedly, there is a similar lack of comparative research testing the many variants of MBI against other non-MBIs that have similar therapeutic aims, such as traditional SEL curricula for students or other stress-reduction programming for teachers (Klingbeil, Renshaw, et al., 2017). As a result, there is also no current means for determining whether MBIs are likely to be more or less effective than non-MBIs when targeting particular outcomes in schools.

Next, it is unknown whether existing MBIs can be optimized or refined to become more efficient and/or more effective than current status quo arrangements. As mentioned earlier, most MBIs, whether intended for students or teachers, are structured as treatment packages that are implemented as lessons that extend over several weeks or months. These lessons include components focusing on psychoeducation and skill training, and the skill-training components typically include a variety of different experiential exercises. It is therefore unknown whether the effects of Learning to Breathe, for example, are primarily attributable to the psychoeducational components, the experiential components, or both types of components in combination. It is likewise unknown whether it is necessary to use all the experiential exercises included

in the curriculum (i.e., mindful breathing, mindful eating, mindful body scanning, and several metaphorical exercises) to train mindfulness effectively or whether one exercise might be more or less useful compared with other exercises for facilitating overall mindfulness or promoting PMA versus RWA, and so on. The practical problem arising from this lack of component analysis research is that there is no way to determine whether we might be implementing superfluous or ineffective practices within the context of a given MBI treatment package. There is also no way to know whether we might make MBI more efficient or more effective by spending more time on the active ingredients and eliminating the spurious elements. This problem is further magnified when considering MBIs that include non-mindfulness components, such as CARE, which also trains teachers in other emotional-behavioral regulation strategies.

Finally, assuming that all school-based intervention should function within a data-based decision-making framework, it is unknown how assessment procedures and resulting data might be used to inform the selection of MBI as an appropriate intervention in the first place. The *modus operandi* for current practice seems to be matching MBIs with presenting problems based on some precedent of supporting research. Yet the boundaries for problem areas that match with MBIs appear to be ever expanding in the literature—ranging from psychological distress to academic achievement to physical health to subjective well-being and beyond. And the effects of more targeted intervention approaches, which are designed to address specified problem areas (e.g., direct instruction for academic skill acquisition or group contingencies for improving class-wide behavior), are much stronger than the effects of MBI for the same problems. That said, the outcome-matching approach, if used in a true data-based fashion, is unlikely to recommend MBI as the preferred approach for intervening with any particular target problem in schools. It might, however, recommend MBI if the practical goal is targeting multiple problem areas using a preventive approach. But this suggests that MBI is only likely to be useful in schools at the universal or Tier 1 level (see the later discussion for more on this point). An alternative approach might be to select MBIs based on the measurement of purported process variables, such as low scores on a mindfulness screening measure. But this approach makes assumptions that have yet to be supported empirically. Specifically, there is little consensus that the mindfulness measures available for youth are valid for their intended purpose (Renshaw, 2017), and there is little evidence showing that responses to mindfulness measures are sensitive to change via intervention or predictive of responsiveness to intervention (Klingbeil, Renshaw, et al., 2017).

The three unknowns described earlier clearly illustrate that, despite the growth in mindfulness research in recent years, we are still far from establishing a true evidence-based approach to using MBI in schools. This does not mean that it is impossible to get there just that we have yet to arrive. Researchers could help hasten this arrival by reorienting scholarly agendas to address the points laid out previously: (a) comparing the differential effects of existing MBI treatment packages (as opposed to proliferating new variants of treatment

packages), (b) conducting component analyses to identify the active ingredients in current treatment packages (as opposed to advocating the integration of mindfulness techniques with other emotional-behavioral regulation skills), and (c) developing assessment procedures that could be used to determine when MBI would be more or less useful for targeting particular problem areas (as opposed to promoting an uncritical application of MBI that is loosely based on problem matching). Practitioners could likewise help by accurately representing the state of the science of MBI in schools and by being appropriately cautious in selecting and applying MBI with students and teachers. Specifically, practitioners would do well to (a) clearly communicate the nature and limits of the research base supporting MBI to clients, (b) provide a solid rationale for why MBI was selected over other available intervention approaches for targeting a particular problem area, and (c) ensure that the effectiveness of MBI is evaluated in real time by assessing implementation fidelity and monitoring the progress of outcomes. Such tacks are likely to go a long way toward preventing researchers and practitioners from “reaching beyond the data” and “putting the [practice] cart before the [science] horse.”

HOW CAN MINDFULNESS-BASED INTERVENTION BE APPLIED WITHIN A MULTITIERED SYSTEM OF SUPPORTS IN SCHOOLS?

A *multitiered system of supports* (MTSS) is a general framework for organizing efficient and effective service delivery in schools. At bottom, an MTSS seeks to serve all students while also providing differential supports to students as a function of their need for such supports. Traditional MTSS models operationalize this framework in a three-tiered system, where Tier 1 (universal level) is characterized by low-intensity service delivery to all students within a school population, Tier 2 (targeted level) is characterized by moderate-intensity service delivery provided to students who fail to respond adequately to Tier 1 supports, and Tier 3 (intensive level) is characterized by high-intensity services provided to students who warrant even more supports to be successful in school (Stoiber, 2014). Although MTSS was originally conceived of as a framework for promoting student success, this same train of service-delivery logic could apply to supporting the success of teachers and other school staff. What follows, then, is a sketch of how MBI might be applied within an MTSS in schools, for both teachers and students. This sketch is intended to be illustrative, not prescriptive (for other examples, see Felver, Doerner, Jones, Kaye, & Merrell, 2013; Renshaw, Fischer, & Klingbeil, 2017). It also aims to stick as close as possible to reasonable generalizations that can be derived from the current research base of MBI in schools. Thus, although one might imagine more creative or thoroughgoing applications of MBI within an MTSS than those described next, what follows is intended to be a modest portrayal that uses low-level inferences from the research base.

The most straightforward and uncontroversial application of MBI within an MTSS is at Tier 1, where preexisting treatment packages and curricula

might be used at the school-wide or class-wide level for universal prevention or wellness promotion programming. Given that the majority of research testing MBI with youth has been conducted using group designs at the classroom level (Klingbeil, Renshaw, et al., 2017) and that the bulk of research with teachers has used group designs at the school-wide level (Klingbeil & Renshaw, 2018), it is safe to assume that MBIs are likely to be effective when used at this level of service delivery. A nice summary and description of available curricula (of which there are several) that might be used at the universal level with students can found in Semple et al.'s (2017) review article. Far fewer options are available for use with teachers, but examples of treatment packages with some empirical support include CARE and SMART-in-Education, among others. MBIs administered at Tier 1, whether for students or teachers, are likely to range in duration from several weeks to several months and could consist of mindfulness-only content or mindfulness-plus-other-SEL content. Given that mindfulness itself can be considered a core SEL skill (Lawlor, 2016), it also seems reasonable that MBIs could be used at the universal level as adjuncts to traditional SEL or mental health prevention programming, which are both structured and used similarly to MBI in schools (cf. Durlak et al., 2011). Although some scholars have suggested that stand-alone mindfulness exercises—such as mindful breathing or mindful STOP (see Renshaw, Bolognino, Fletcher, & Long, 2015, for a full description of the exercise)—might be used as more parsimonious and efficient Tier 1 prevention practices (e.g., Renshaw, 2012), it is worth noting that there has yet to be a study yielding positive effects of such stand-alone practices outside the boundaries of a traditional MBI treatment packages (cf. Long, Renshaw, & Camarota, 2018). Thus, a “stripped-down” approach to MBI, however feasible it might seem, should not yet be recommended for regular Tier 1 practice.

At Tier 2, the use of MBI with targeted groups of at-risk students is less clearly supported. There are a few studies demonstrating that small-group-based MBIs can be effectively implemented with youth identified as having emotional or behavioral risk, though these studies have all been conducted in clinical or community settings, not in schools (e.g., Biegel, Brown, Shapiro, & Schubert, 2009; Jee et al., 2015; Semple, Lee, Rosa, & Miller, 2010). These studies have also targeted youth with greater levels of risk than what is typically considered to be appropriate for services provided at the “targeted” level in schools. That said, the small-group-based format of service delivery is akin to how other Tier 2 interventions (e.g., SEL or traditional social skills training) are administered in schools, and so it seems reasonable to suggest that MBI might be used in this way at this level. For example, a small group of at-risk students might be removed from class once or twice a week, for 20 to 50 minutes, to attend a “mindfulness group” based on a preexisting treatment package that has shown to be effective, such as Learning to Breathe. That said, the burden on practitioners is to determine whether this approach to Tier 2 intervention, however socially valid it might seem, is likely to be just as effective as other Tier 2 interventions for targeting similar problem areas. If such confidence cannot be established, it is recommended that use of MBI

at Tier 2 be confined to an adjunct component that functions to complement another approach to intervention that has been shown to be more effective. For instance, a brief, stand-alone mindful breathing exercise (e.g., Renshaw et al., 2015) might be added as an adjunct component to a Check In–Check Out intervention, which has been shown to be consistently effective for reducing target students’ disruptive behavior in the classroom (e.g., Todd, Campbell, Meyer, & Horner, 2008). Decisions about how and when to use MBI in this adjunct manner are, admittedly, squarely in the realm of “art” as opposed to “science.”

At Tier 3, the use of MBI is not as strongly supported as it is at Tier 1, but its use at this level is somewhat better established than at Tier 2. As mentioned earlier, results from a meta-analysis of single-case design studies demonstrated that MBIs have been used to effectively reduce disruptive behavior in individual youth with developmental disabilities and psychiatric diagnoses, both in school and home settings (Klingbeil, Fischer, et al., 2017). The majority of MBIs used in these intensive studies were not formal treatment packages or curricula. But at least one approach, known as Soles of the Feet (e.g., Felver, Frank, & McEachern, 2014), has been manualized and may be a viable option at Tier 3 for practitioners with little prior training in mindfulness. An important point for practitioners to remember, however, is that no research has yet shown that MBI can be used effectively for treating youth with severe emotional problems in school settings. In fact, a recent study suggested ambiguous and potentially iatrogenic effects for three students with depression or anxiety disorders that were treated with an MBI in schools (Malboeuf-Hurtubise, Lacourse, Herba, Taylor, & Amor, 2017). Although there is a substantial amount of research showing that MBIs are effective for treating depression and anxiety with adults (Khoury et al., 2013), and there are several studies suggesting that therapeutic approaches that integrate mindfulness as one of several components may be effective for treating adolescents with severe emotional problems in non-school settings (e.g., Halliburton & Cooper, 2015), these findings are not yet generalizable to school-based practice. Thus, practitioners working with students with intensive emotional problems at Tier 3 would do well to only use MBI as a complementary component to other, well-validated approaches for addressing this problem area in schools (see Mychailyszyn, Brodman, Read, & Kendall, 2012, for a meta-analysis of effective approaches).

CONCLUSION

The purpose of this chapter was to review the status of MBI in schools by raising and answering a handful of key questions that are relevant to any researcher or practitioner interested in the topic:

- What is mindfulness and MBI?
- How is MBI structured and used in schools?

- How effective is MBI with students and teachers?
- What is still unknown about MBI in schools?
- How can MBI be applied within MTSS in schools?

Responses to these questions have (a) framed mindfulness as a skill that can be taught and learned like any other skill in schools, (b) shown that the research base supporting the use of MBI with students and teachers is promising across an array of outcome domains, (c) emphasized key shortcomings of the empirical literature that should be addressed to establish a truly evidence-based approach to using MBI in schools, and (d) offered a sketch of how MBI might be reasonably applied—given what is and is not yet known—within multiple levels of service delivery in schools.

The upshot of this overview is that although MBI with students and teachers has become a substantive area of scientific inquiry, our understanding of how to efficiently and effectively use MBI in schools is still far from complete. Researchers and practitioners are therefore encouraged to be scrupulous in their practice and wary of potentially dubious overgeneralizations of the research that are used for the sake of advocating the use of MBI in schools. As Greenberg and Harris observed in 2012, there are many well-intentioned yet overzealous champions for mindfulness whose “enthusiasm for promoting [MBI with youth] outweighs the current evidence” (p. 165). Although the research base has likely more than doubled in the past 6 to 7 years since this warning was published, their sentiment continues to ring true today. Enthusiasm for MBI must be checked and balanced by a realistic appraisal of the available empirical evidence to promote the best outcomes for students and teachers.

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10

Mindful Gratitude in the Schools

Building Capacity Across the Tiers

Evelyn Bilius-Lolis

Schools today beg for practices that support the integrated development of the learner and the simultaneous health of the school system and its constituents. Recent statistics on matters of child mental health are sobering. Just over 20% of school-aged youth (or one in five) either currently or at some point in their life reported having a clinical mental health diagnosis (Centers for Disease Control and Prevention, 2017; Merikangas et al., 2010; National Institute of Mental Health, n.d.). Statistics on childhood stress suggest that physiological indicators of stress often manifest in young children as well as adolescents (American Psychological Association [APA], 2010). Nearly a third of children surveyed in a large national stress study indicated that they experience physical health symptoms that are often associated with stress (APA, 2010). These symptoms included difficulty falling asleep or staying asleep at night (38%), headaches (33%), and upset stomach (31%; APA, 2010). Likewise, research on adolescent stress has suggested that the stress level of teens during the school year far exceeds what they believe to be healthy, topping adults' average reported stress level in the same study (APA, 2013). Further, nearly half of teens sampled reported that they either are not doing enough to manage their stress or are not sure whether they are doing enough to manage it (APA, 2013). Last, and perhaps most eye-opening, is the recent increase in both attention to and research on the topic of the mental health of preschool children (Egger & Angold, 2006; Merikangas, Nakamura, & Kessler, 2009). And this is just a modest snapshot of the literature.

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Promoting Mind–Body Health in Schools: Interventions for Mental Health Professionals,
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Positive psychology is the psychological science committed to uncovering variables and practices that help individuals and systems to flourish (Seligman & Csikszentmihalyi, 2014). Recent literature on the constructs of mindfulness, optimism, connectedness, self-compassion, and gratitude has afforded a plethora of physical and psychological health benefits to individuals engaging in such positive psychological practices (Tugade, Fredrickson, & Barrett, 2004). Likewise, interventions using such methods have similar outcomes—serving to consistently increase psychological well-being, life satisfaction, and social connectedness, as well as improve sleep function and even decrease chances of heart disease (Kubzansky & Thurston, 2007). Thankfully, the positive psychology movement has also begun targeting children and, similarly, education systems (Furlong, Gilman, & Huebner, 2009). This chapter explores one such positive psychological intervention, the practice of mindful gratitude, across a multitiered system of support (MTSS) service delivery model.

GRATITUDE AS SCIENCE

McCullough, Emmons, and Tsang (2002) defined *gratitude* as a “generalized tendency to recognize and respond with grateful emotion” to positive experiences that occur throughout one’s life (p. 112). Similarly, gratitude expert Robert Emmons likewise defined gratitude as binary. Emmons (2010) asserted that gratitude first involves an affirmation of goodness and the identification of some amount of goodness present in one’s life. Second, gratitude involves the recognition that the source of this goodness exists outside ourselves (Emmons, 2010). The latter aspect of gratitude is what makes gratitude innately connecting because it involves what Emmons (2010) referred to as a “humble dependence on others” (para. 7).

Gratitude is considered to be a signature strength in the positive psychology literature and something that, if exercised routinely, enables positive emotions and mindfulness (Emmons, 2008; Emmons & McCullough, 2003). For these reasons, the physiological, mental health, and social benefits of gratitude have gained significant publicity in research and the public eye. Any of the individual outcomes of practicing gratitude are impressive, but when one considers the potential of their integrated effect on the mind–body relationship, the data are even more alluring (Emmons, 2008).

Adults who routinely practice gratitude physically experience improvement in their duration and quality of sleep and report feeling more refreshed in the morning (Emmons & McCullough, 2003; Sansone & Sansone, 2010). Likewise, daily gratitude practice has been linked to stronger immune system functioning, fewer somatic complaints, and an increased likelihood to practice self-care and to exercise (Emmons, 2008). Emotionally, gratitude has been found to increase positive emotions and psychological well-being and promote feelings of joy, pleasure, and optimism (Sheldon & Lyubomirsky, 2006). Socially, the routine practice of gratitude encourages human connection and

intimacy because gratitude requires one to be grateful for something outside oneself (Gordon, Arnette, & Smith, 2011; Murray & Hazelwood, 2011). It also decreases feelings of isolation and loneliness and increases one's ability to forgive (Caputo, 2015; Satıcı, Uysal, & Akin, 2014).

The effect of mindful gratitude also has impactful outcomes for children. Froh and Bono (2012) indicated that grateful young adolescents (ages 11–13), compared with their less grateful counterparts, are happier and more optimistic; have better social support; are more satisfied with their school, family, community, friends, and themselves; and give more emotional support to others. These researchers also found that grateful teens (ages 14–19) are more satisfied with their lives, use their strengths to better their community, are more engaged in their schoolwork and hobbies, have higher grades, and are less envious, depressed, and materialistic (Froh & Bono, 2011; Froh, Bono, & Emmons, 2010). In this way, this type of evidence-based intervention, so rich in protective factors and resiliency, is needed in an MTSS service delivery model.

Perhaps the most impressive part of the gratitude equation is that gratitude is something that can be readily cultivated through the use of certain practices or exercises. One such gratitude intervention includes the practice of mindful gratitude journaling, which involves listing three to five things one feels grateful for on a daily basis in a written journal or online journal or application. This simple practice of identifying three to five instances for which one is grateful in a 24-hour period for as little as 3 weeks has been demonstrated to improve optimism, bolster positive emotions, increase social connectedness, and lead to greater life satisfaction (Froh, Miller, & Snyder, 2007; Froh, Sefick, & Emmons, 2008; Layous & Lyubomirsky, 2014).

Mindfulness involves maintaining a moment-by-moment awareness of our thoughts, feelings, bodily sensations, and surrounding environment through a gentle, nurturing lens (Greater Good Science Center, n.d.). The mindful component of daily gratitude journaling consists of both inviting and channeling intentionality for gratitude throughout the day. This involves slowly training the waking eye to scan the environment for things to be grateful for each day. Likewise, reflecting, recalling, and capturing these moments in a daily journal recording also serves to reinforce and close the mindfulness loop by allocating time for revisiting and savoring the items for which one is grateful.

How, then, do we pave the way for this simple intervention to take root in school systems? From an intervention standpoint, gratitude journaling requires limited fiscal (i.e., the cost of student journals) and time (i.e., the time involved in journaling three to five items daily plus a one-time teacher or student training) cost. Time and fiscal cost have been noted in the literature to be implementation barriers for adopting and carrying out interventions in school settings (Agron, Berends, Ellis, & Gonzalez, 2010). However, like many other initiatives targeting primary prevention and Tier 1 implementation, eliciting teacher buy-in and assurances is highly nuanced, though it should not be difficult given the low time and monetary cost of the intervention and, of

course, the plethora of health benefits that accompany this practice. However, the logistics, especially as they relate to implementing a Tier 1 intervention, require careful attention and planning.

A THREE-TIERED APPROACH TO GRATITUDE JOURNALING

Implementing Gratitude Journaling in the First Tier

Implementing a gratitude journaling intervention at the classroom level requires several careful considerations, even for the most willing teachers and school systems. In fact, the systematic implementation of gratitude journaling involves the very implementation components necessary for launching any behavioral Response to Intervention socioemotional learning program at this level. Specifically, these components include eliciting buy-in and obtaining assurances, teacher and staff training in the intervention area, psychoeducation and a student mini-lesson in gratitude, routine fidelity checks, and necessary progress monitoring (Sugai & Simonsen, 2012).

Many of the implementation obstacles that are described in the implementation science literature involving Tier 1 interventions can apply here. Obstacles can range from differing philosophical beliefs about whether these matters belong in the classroom to those that surround the fidelity of implementing socioemotional interventions at the various tiers of service delivery (Agron et al., 2010).

The following steps offer a recommended course of action for implementing a daily gratitude journaling intervention at the classroom level as a first-tier support to ultimately create a shift in system-level consciousness.

Step 1. Eliciting Buy-in From a “Select” Few

Because gratitude journaling as a part of a Tier 1 routine falls under the auspices of socioemotional learning, it may be vulnerable to implementation obstacles that typically vex this domain. The obstacles include eliciting buy-in, allocating time and training needed to run the intervention, and competing philosophical ideologies of stakeholders (Agron et al., 2010; Greenberg et al., 2003). The first step involves gauging buy-in of constituents. Research on implementing system-wide school initiatives found that 80% of faculty and staff buy-in is necessary when choosing to pursue matters related to school-wide behavioral supports (Sugai & Simonsen, 2012). This, too, is the case with implementing gratitude interventions at the Tier 1 level. Eliciting buy-in many times involves providing school faculty with data that the intervention is indeed successful in their school environment. It is beneficial to start small, build necessary capacity through small intervals of success, and then gear up for a larger rollout once success has been established.

Thus, the most appropriate way to begin a Tier 1 gratitude journaling intervention is to establish a pilot classroom or classrooms of a particular grade level that will serve as the model for future replications. These classrooms can be

selected through a call for volunteers or the direct recruitment of teachers who are receptive to this type of intervention. Pilot programs can work out any kinks that may be specific to that particular system and can establish a model of success on which future recruitment efforts can be built (i.e., increasing future participation for the initiative by having both data and anecdotes to share with the school community).

The school psychologist and other school-based mental health providers will play a critical role in establishing this foundational effort. He or she will work with the pilot teacher(s) to determine the logistics of the intervention as they pertain to the school day. Ideally, the gratitude journaling occurs during a time in the school day when students are not engaged in any instruction. The intervention should take no more than 10 minutes, if that. Morning meeting time or any less structured time at the end of the day are good options for elementary school children. Designating a time at the secondary level will involve a little more deliberation as schedules become more complicated. The homeroom period is an option for middle school children. Beyond that, the school psychologist will have to work with necessary department heads and building administrators to carve out a suitable time for high school students and a subject period (or periods) that can readily accommodate the intervention (e.g., English class, health class, physical education class, advisory period).

Step 2. Eliciting Parental Support

Once the school identifies the teacher or teachers and respective classroom(s) that will take part in the launching of the pilot intervention, the parents of the students should be contacted and provided with proper psychoeducation, and relevant permissions should be obtained.

Parents have to be informed about the nature of the intervention and the rationale for its adoption. The school psychologist can work alongside the classroom teacher to create a memo for parents that reviews the literature on mindful gratitude and summarizes its scientific health outcomes. In urban districts or districts in which there is a large bilingual presence, this memo should also be translated into the prevalent language. Likewise, an in-house presentation with a question and answer opportunity might also work well to help solicit parent support as stakeholders in the process. Ethically, parents should have the option of their child opting out of this exercise. In this case, an alternative daily activity will have to take the place of the gratitude journaling exercise during that time of the school day. Although the intervention itself is a positive psychological intervention and is generally benign, some families may wish to keep their child or children from engaging in routines that involve mindfulness or may not want their child to share information that is personal about the family or home. This should be respected by both the teacher and the school.

Step 3: Teacher Training

Teachers involved in the intervention will have to be trained by the school psychologist in the logistics of the intervention, its scope and purpose, and

their assigned role. This training can be in the form of a brief information packet that can be presented and then shared with teachers as a reference. This packet should include all training components, including the parameters of journal entries and the teacher role in distributing and scanning the journal content daily (discussed later). Teachers should also be provided the opportunity to ask any questions and feel encouraged to work with the school psychologist to tailor the intervention to their specific classroom.

The school psychologist will work closely with classroom teachers to develop a working definition of gratitude for the purpose of the intervention. This definition should be age appropriate and clear in its scope. Attaching this definition to the inside cover of their journals can offer a helpful visual reminder for students. This definition should also be revisited from time to time throughout the duration of the intervention as an additional reinforcing and fidelity boost.

Step 4. Classroom Mini-Lesson

Students should be provided with explicit instruction for how to complete the journal entries. A mini-lesson on gratitude, ideally cofacilitated by the school psychologist (or other relevant school-based mental health worker) and classroom teacher, should take place before the start of the intervention. In this lesson, the teacher and school psychologist should introduce the definition of gratitude, highlight some of the positive research findings, distribute the journal, and discuss the course of the intervention. Students can make their first entry on completion of the mini-lesson. At that time, the classroom teacher and school psychologist should check for understanding as well as answer any questions that students may have about the intervention.

Typically, the instructions for implementing gratitude journaling call for listing three to five items for which one felt grateful within the last 24 hours. The list of items need not be long; however, each grateful mention should be specific and include relevant detail. For example, instead of writing, "I am grateful for my mom," a student would be encouraged to be more specific in terms of the context of that experience of gratitude. An appropriate elaboration could include, "I am grateful for the talk Mom and I had on my way to school this morning." In this way, mindfulness is called to the context of the experience as well as the target of gratitude. Promoting intentionality in the context of the experience will eventually help the student actively and mindfully scan the environment for experiences of gratitude in their day-to-day lives to recapture them in proper context for their journal entries. This emerging call to awareness will allow students to maximize the brain benefits of practicing mindful gratitude.

Step 5. Conducting Content Scans

Conducting brief, daily content scans of journal entries is one of the most vital implementation components both from a treatment integrity standpoint and that of ethical due diligence. Content scans include a brief review of the daily

contents of each student journal once the journals are collected by the classroom teacher and a deeper comb-through of the contents once or twice a week by the school psychologist or other school-based mental health provider.

Daily content scans offer several lucrative benefits. First, they provide the teacher the opportunity to gauge the child's engagement in the intervention and the opportunity to provide feedback as to whether the child is indeed producing three to five experiences of gratitude that are specific in context and adhere to the scope of the definition. The teacher can also offer encouragement or prompt to students who have to complete the task but become side-tracked, lack motivation, and/or need a little guidance. Second, conducting daily content checks also alerts the teacher to the content of the child's gratitude in a noninvasive and quick manner that may offer insight into the nature of the experiences the child cherishes and the key individuals in the child's life, as well as a more holistic understanding of the child. Third, daily content scans allow the teacher to identify students who consistently have difficulty identifying items for which to be grateful, and this can build a bridge for dialogue, follow-up, and even referral. In the same vein, teachers should be trained to flag entries that may suggest or disclose that a student is struggling emotionally and/or if they are in harm's way. Last, daily content scans provide a formative basis for built-in fidelity checks.

This lends itself to the last critical component of the routine content scans: clinical vigilance and ethical due diligence. Gratitude journaling has been found to have many promising health and academic outcomes for children. However, when children are provided the formal opportunity to reflect on their lives through a journal-type free-writing exercise, there is the possibility of unintended outcomes. One would assume that the bulk of students will respond favorably to the exercise with modest encouragement and support and that the content of the daily entries will be clinically uneventful. However, engaging in such an exercise at the classroom level may provide outcomes or insights that are unforeseen.

For example, a child who continuously lacks the ability to come up with experiences to be grateful for is a child who may need to be evaluated by a clinician for depression, psychosocial stressors, self-harm, and so forth. Similarly, a child may disclose something in the content of their daily entry that may need immediate attention, such as passive or active suicidal ideation or being harmed and/or hurt in some way by someone else (i.e., abuse, bullying).

Thus, the content of gratitude entries should be scanned daily by the classroom teacher and at least once a week by a school-based mental health provider or designee. Teachers will have to be trained in flagging items that raise concern, and these entries should be evaluated by a school mental health professional before the end of the same day so that he or she can interview the child and assess the matter properly. These precautions should become common practice if a teacher or school plans to use a gratitude journaling intervention at the Tier 1 level.

Students With Disabilities

Gratitude journaling formats should also take into consideration students with disabilities and thus be adapted accordingly, like any other Tier 1 curriculum or service. Such adaptations could include access to computers for journaling, assistive technologies such as dictation applications, additional time in the day to complete the submission, and/or use of picture drawings or any other innovative adaptations that would foster better accessibility for students with disabilities and/or English language learners. A similar case can be made to support English language learners. There is no reason this practice cannot be accessible to all students. The school psychologist, with the help of special educators or other pupil support team members, can readily work to enhance the accessibility and inclusivity of this intervention and, with it, the potential to affect positive change for all learners.

Implementing Gratitude Journaling in Tiers 2 and 3

The implementation of a gratitude intervention in a small group or one-on-one counseling setting also follows the aforementioned implementation steps. The school psychologist or school-based mental health worker can incorporate a gratitude intervention as part of any counseling group targeting children at risk of socioemotional difficulties, including but not limited to depression, anxiety, social stress, academic stress, and/or anger management. One of the main differences in using the intervention at this level is that students will become responsible for engaging in the daily gratitude entries on their own time, and thus content checks will not be as frequent as in the general classroom. Given the implications of this risk, the school psychologist or counselor may wish to engage the parent in the process, if applicable, and elicit their help with content scans. Another feasible option is to allow students to drop off their journals to the school psychologist's office midweek for a midweek content scan and then pick up their journals at the end of the day. These are but a few suggestions. The school-based mental health professionals will have to creatively resolve this aspect of the intervention to create a system for providing the necessary content checks in the advanced tiers.

Gratitude interventions also readily lend themselves to one-on-one therapeutic work in schools. In such cases, the school psychologist or school-based mental health clinician can assess the benefits of the intervention more formally by conducting pre–post measures for target variables such as anxiety, depression, stress, and connectedness. The intimacy of the individual counseling setting can also serve to better allow for the tweaking of the intervention more routinely along the way, perhaps eventually graduating to a different kind of gratitude intervention once the daily journaling becomes standard mindful practice for the student. For example, once students have engrained the journaling practice, one-on-one counseling (and group sessions as well) can be used to practice gratitude meditations or move on to focus on cultivating grateful acts such as gratitude visits (e.g., writing formal thank-you notes

to individuals whom the child never properly thanked and sharing them) and to more formal gratitude curriculums (Froh & Bono, 2012). Working such positive psychological interventions into the advanced MTSS tiers and individual counseling plans helps to capitalize on the vast socioemotional and physical health benefits in a more intimate setting. Although Tier 1 gratitude interventions allow for the potency of these interventions to reach all students, therapeutic gratitude interventions in the advanced tiers offer more concentrated promise and perhaps deeper learning. However, just like academic interventions, interventions in the advanced tiers are conducted in addition to those that are being implemented at the primary level. In this way, slowly and surely, a steady wave of gratitude consciousness can pulsate through the school community.

CONCLUSION

Proponents of child mental health continuously seek means to bolster the emotional health of children through interventions that are backed by research and feasibly implemented. The school is one such setting in which mental health practitioners can work with educators to promote child wellness across the curriculum and through initiatives that promote socioemotional learning, resiliency, and holistic wellness in learners.

Implementation science tells us that interventions that are perceived to be cost- and time-effective, as well as minimally disruptive to the classroom routine, have the best chance of being adopted and succeeding (Sugai & Simonsen, 2012). Positive psychological interventions, such as promoting mindful gratitude in children, have made their way into the school setting with facility and ample treatment potency. They are easy to implement, are cost- and time-friendly, and offer outcomes that are impressive for health, learning, and school success. Promoting a culture that values and practices mindful gratitude is one way schools can counter the plethora of stressors that weigh heavily on children, leaving them at risk of diagnoses, negative coping outlets, and academic suffering.

Creating a space for mindful gratitude routines within the context of the educational day is one way to invigorate the first tier and provide classroom environments with a shift that is substantive and effective. The process, like that of any change process at the whole-class or system level, will require careful crafting and time and celebrating small successes on the way to building larger capacity and enthusiasm.

Like the practice of mindful gratitude, yoga is a mindful practice that offers considerable physiological and socioemotional benefits for children (Birdee et al., 2009). In recent years, schools across the nation have begun adopting school-based yoga programs (Butzer, Ebert, Telles, & Khalsa, 2015). Gratitude interventions can also slowly become aligned into such integrated models that seek to fuse whole child wellness, psychological well-being, physical

health, and academic achievement in schools (Greenberg et al., 2003; Miller, Gilman, & Martens, 2008). Similarly, future research explorations may wish to examine school-based service learning opportunities and how engagement in such activities can reinforce mindful gratitude in the learning community (APA, n.d.). Given the current status of the child mental health landscape, perhaps the time is finally ripe to call into action practices that bolster resiliency, socioemotional wellness, and mind–body health in learners.

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11

Relaxation and Guided Imagery for Mind–Body Health

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Relaxation and guided imagery (RGI) is an evidence-based mindfulness intervention that involves guiding individuals through envisioning specific images to promote relaxation of the mind and body (Costa & Barnhofer, 2016). This intervention is the culmination of a wealth of mind–body health research documenting the connection between psychological experiences and physiological well-being. Historically, guided imagery and relaxation practices have been used in combination with techniques such as progressive muscle relaxation, meditation, and hypnosis (Charalambous et al., 2016; Costa & Barnhofer, 2016). Although RGI has been successfully used in combination with other relaxation and mindfulness techniques, it has shown great utility as a stand-alone intervention (Louie, 2004; Mizrahi et al., 2012). RGI has been well researched in many fields, including psychology, education, neurology, immunology, pulmonology, and cardiology, for its effects on the mind and the body (Hucklebridge et al., 2000). This research has revealed the success of RGI in improving physical, biochemical, and psychological outcomes (Gruzelier, 2002). In addition to producing favorable outcomes for both the mind and body, RGI is also easily implemented across a diversity of settings, including hospital, home, community, and school (Dobson & Byrne, 2014; Louie, 2004; Peck, Bray, & Kehle, 2003; Walker et al., 1999). Finally, and by far the most useful aspect of RGI, is its adaptability. Because implementers of RGI can use a multitude of guided relaxation techniques and imagery scenarios, RGI can be easily implemented across virtually any setting with any population. In this chapter, readers

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learn about RGI: its definition, uses, and empirically based outcomes. Readers also receive information on applications of RGI in the school setting, such as its use within a Response to Intervention (RTI) model, and a case example.

RELAXATION AND GUIDED IMAGERY DEFINITION

RGI consists of two major components: (a) promoting relaxation by reducing uncomfortable thoughts and feelings and (b) distracting the mind by focusing attention on envisioning specific images or scenarios (Adeola et al., 2015; Nilsson, Forsner, Finnström, & Mörelius, 2015). To implement RGI, interventionists use relaxation techniques in combination with a detailed description of a specific image or scenario given in the second person point of view. RGI interventions may vary in length to suit the needs of the individual and have been implemented in sessions as long as 50 minutes (Mizrahi et al., 2012) and as short as just a few minutes (Kim, Newton, Sachs, Glutting, & Glanz, 2012). Despite these varieties in session length, research findings have shown similar effectiveness in long and short RGI sessions. Because RGI is adaptable to the needs and circumstances of the individual, effective implementation of RGI begins with intervention planning. Before the implementation of RGI, the interventionist must identify and construct the content of the intervention through an initial evaluation. For example, in the school setting, the interventionist sits down with the student who will be receiving the RGI intervention to (a) evaluate what the student finds relaxing and (b) identify enjoyable and/or calming images or scenarios.

As previously mentioned, much of the utility of RGI lies in its adaptability to situations, individuals, settings, and so forth. Because of this, it is important that the interventionist gathers comprehensive information because this will inform the type of relaxation practices and imagery that will be used in the RGI intervention. After the initial evaluation of a student's needs, the interventionist selects relaxation techniques that would be most effective in promoting mind and body relaxation through minimizing uncomfortable thoughts and motor reactions and maximizing the reduction of encountering external stimuli (Achterberg, 1985). These techniques may include the use of calming music, rhythmic breathing, and meridian tapping. Following this, the interventionist uses the information provided by the student in the initial evaluation to inform the selection of images and/or scenarios that are enjoyable and calming (Adeola et al., 2015; Nilsson et al., 2015). Examples of commonly used RGI images and scenarios include beaches, mountains, or the person's home. When implementing RGI, these images and scenarios are described from the second-person point of view as the interventionist guides the student through the imagery. For example, when using beach imagery, interventionists can describe a scenario involving "warm sand moving beneath your feet as you walk to the crystal-clear blue water." Alternatively, images specific to the target concern such as disease, feelings, pain management, and so on may be visualized as part of the guided imagery process (Peck et al., 2003; Weydert et al.,

2006). For example, students experiencing asthma symptoms may benefit from guided imagery involving picturing “clean, cool air entering your lungs, oxygenating the blood, and leaving your lungs through your throat and nose.”

Instead of planning individualized RGI sessions, implementers can also make use of prescribed or prerecorded RGI sessions. While this is the case, construction and individualization of RGI sessions may be a more appropriate method for school-based practitioners to implement RGI to accommodate time constraints and appeal to the interests of the student. Additional benefits from preconstructing scripts can include facilitation of RGI in a consistent and standardized manner, ability to record the individualized script for easier implementation, and ability to use a consultation model to both inform the construction of the script and implement the RGI intervention across settings.

RELAXATION AND GUIDED IMAGERY IN ADULTS

RGI has been supported in the literature as an evidence-based intervention to improve the health of the mind and body. To date, much of the research on RGI has focused on adult populations with a variety of physiological and psychological health complications. Applications of RGI in clinical and home settings have been well researched; overwhelming support has been found for this intervention for improvement of a host of mind–body symptoms.

RGI was implemented to reduce stress and promote wound healing in a sample of 60 patients in the hospital setting who were undergoing a laparoscopic cholecystectomy procedure. RGI was implemented remotely through a 45-minute CD that patients were instructed to listen to daily for 3 days presurgery and 3 days postsurgery. The Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) was administered to all participants pre- and postsurgery. Results indicated that patients who had access to the RGI intervention had significantly decreased levels of stress and a significantly increased rate of wound healing (Broadbent et al., 2012). Another study supporting the use of RGI to improve hospitalized patients psychological and quality of life indices found that levels of anxiety and depression and ratings of bodily discomfort were all improved following an RGI intervention (León-Pizarro et al., 2007).

An RGI intervention consisting of three 50-minute recorded RGI sessions was found to be successful at reducing stress, anxiety, and pain symptoms while improving the overall quality of life in a sample of participants with inflammatory bowel disease (Mizrahi et al., 2012). Researchers have also found RGI to be successful in improving symptoms of dust-mite allergies in adult asthmatics (Lahmann et al., 2010). Specifically, RGI was significantly effective at decreasing total serum immunoglobulin E, leading to a decrease in the antibody activity responsible for symptoms of dust-mite allergy.

Rees (1995) examined the effects of RGI on anxiety, depression, and self-esteem in a population of women giving birth for the first time. Following childbirth, women who participated in an RGI intervention had significantly

decreased levels of anxiety and depression and increased levels of self-esteem compared with a non-RGI control group. Another study done with pregnant women looked at the effects of RGI on psychobiological well-being during pregnancy (Urech et al., 2010). A 10-minute RGI intervention to assess the effectiveness of RGI in enhancing levels of relaxation and cardiovascular responses (systolic blood pressure, diastolic blood pressure, and heart rate) indicated that RGI significantly increased rates of relaxation and decreased cardiovascular responses of blood pressure and heart rate in pregnant women (Urech et al., 2010).

SCHOOL-AGED POPULATIONS, UNSPECIFIED SETTINGS

Although much of the literature on RGI has been researched using adult populations, there is a volume of research on the use of RGI with child and adolescent populations. RGI has been well supported in the literature for use with children with physiological ailments. Shockey et al. (2013) found that RGI significantly decreased anxiety and feelings of being scared in a sample of 12 children being treated for cancer. This study incorporated belly breathing as a relaxation technique and individualized guided imagery visualizations. Each RGI session was approximately 60 minutes in length and occurred directly before patient procedures in the hospital setting. Outcomes of this study supported the use of RGI to decrease levels of preprocedural distress in the participant sample. In a study to determine the efficacy of RGI in decreasing pain perception and analgesic use and increasing self-efficacy and school attendance in a sample of children with sickle cell disease, Dobson and Byrne (2014) found RGI to be effective on all measures except increasing self-efficacy. This study implemented RGI at a dosage of 5 to 10 minutes per day for the duration of the intervention and supports the use of RGI with young children (ages 6–11) to improve pain management.

Adding to the literature of RGI use with children, Weydert et al. (2006) evaluated the effectiveness of RGI with children experiencing recurrent abdominal pain. Baseline measures were evaluated using a psychobiological assessment battery consisting of multiple assessments for various gastrointestinal and psychological symptoms. Results after four weekly sessions of the RGI and progressive muscle relaxation intervention showed that participants had a significant decrease in the number of days they experienced pain and a decrease in the days of missed activities due to the pain. Charette et al. (2015) examined the effect of a short 30-minute guided imagery DVD intervention on pain management. The Brief Pain Inventory (Daut, Cleeland, & Flanery, 1983) was used to measure perceived variables of pain (intensity, location, frequency). Additional measures to assess secondary variables of anxiety, coping strategies, and emotional stress were also used. RGI was found to have a significant effect on decreasing levels of pain in the experimental group compared with the control group.

SCHOOL-AGED POPULATIONS, SCHOOL SETTINGS

The literature has supported the use of RGI in a school setting. Kapoor, Bray, and Kehle (2010) researched the effects of RGI on students with asthma and concomitant anxiety disorders. Theirs was one of the first studies to examine the implementation of RGI in schools and consisted of individualized RGI scripts based on student-identified preferences. Specifically, researchers in this study questioned students about what made them happy to inform the construction of the RGI scripts. In combination with student preferences, RGI scripts consisted of a step-by-step story noting progression toward the lungs becoming healthy and concluded with a final visualization of a healed lung. The intervention was administered 3 days a week during 20-minute sessions in the school nurse's office. Results found that RGI was correlated with lung functioning improvement, as measured by a spirometry device that measures the volume of air in an exhaled breath, and lower anxiety scores. Additional measures indicated improved perceived quality of life and feelings of happiness (Kapoor et al., 2010).

Further support for the use of RGI in the schools was found by Scrimin, Mason, and Moscardino (2014), who conducted a study examining the effects of RGI following a procedure to induce a negative mood in school-aged children. Students receiving the intervention watched a video clip of a school-related stressor. Immediately following this negative mood-inducing video clip, students were exposed to an RGI intervention. Results indicated that RGI was associated with decreased rates of negative mood following the video clip. In addition, decreased math scores were found for students who did not receive the RGI intervention following the video clip. The study concluded that RGI was effective in improving mood related to school stressors and may positively impact academic performance.

Hashim and Zainol (2015) added to the support of RGI as a school-based intervention by studying the effectiveness of RGI on emotional distress, short-term memory abilities, and sustained attention. The Depression Anxiety Stress Scale-21 (Lovibond & Lovibond, 1995) was used to measure levels of depression, anxiety, and stress. Further, short-term memory was assessed using the Digit Span test, a subtest from the Wechsler Memory Scale—Third Edition (Wechsler, 1997). Sustained attention was measured using the Digit Vigilance Test (Lin et al., 2018). The intervention was administered to different groups of students during their health class. Results from the study concluded that RGI in a school-based setting was successful in increasing short-term memory abilities after at least 12 sessions of the intervention.

In a study examining the effectiveness of RGI delivered by school nurses on students' experiences of pain and salivary cortisol levels, RGI was found to be effective in reducing salivary cortisol levels. Progressive muscle relaxation was used as the relaxation technique, coupled with guided meditation. School nurses implemented this intervention directly before administering vaccinations (Nilsson et al., 2015). Similar effects were found in a study researching the effects of RGI on anxiety related to venipuncture procedures done as part

of a celiac disease screening in a school-based sample of 12-year-old students (Forsner et al., 2014).

SPECIAL CONSIDERATIONS

These studies outline the effectiveness of RGI for a variety of mind and body health issues. However, some studies have found mixed results for RGI across different settings and conditions. For example, Costa and Barnhofer (2016) investigated the use of RGI in two groups of adults with depression. Participants received the intervention in a single training session and were then directed to maintain practices on their own for 1 week. Results indicated that depressive symptoms decreased, and self-regulatory functioning increased; however, the skills learned in one training session did not maintain the improvement in emotional regulation. Similarly, a study in Hawaii looked at the effects of an RGI intervention on levels of self-esteem in children 8 to 12 years old. A sample of 60 children at an elementary school was randomly assigned to experimental or control groups. Results after the 12-week intervention period revealed significantly higher levels of general self-esteem. Levels of social and peer-related self-esteem and parent- and home-related self-esteem increased but not significantly (Omizo, Omizo, & Kitaoka, 1998). In addition, a study examining the effects of a 10-week, daily RGI intervention on levels of pain, self-efficacy, functional status, and levels of distress found that there were significant effects in improving daily pain, functional status, and self-efficacy but no improvement on levels of psychological distress (Menzies & Kim, 2008). Studies that include mixed or no effects should be considered when evaluating the usefulness of RGI interventions and their implementation in school settings.

It is important to recognize that RGI interventions use a wide variety of formats, session lengths, relaxation techniques, and imagery. Although these factors largely contribute to the adaptability of this intervention across settings and populations, decisions on how to execute RGI largely lie with the clinical judgment of the practitioner. We have deemed the process of creating and implementing the RGI script outlined earlier to be the most applicable and useful in the school setting according to the literature. This outlined process, however, is descriptive, not prescriptive. Practitioners are encouraged to use their clinical judgment and knowledge of students and their needs when implementing RGI interventions.

APPLICATION OF RELAXATION AND GUIDED IMAGERY WITHIN A THREE-TIER INTERVENTION SYSTEM

Prior research has supported the use of RGI as an effective school-based intervention (Forsner et al., 2014; Hashim & Zainol, 2015; Kapoor et al., 2010; Nilsson et al., 2015; Scrimin et al., 2014). As the use of the RTI and multitiered

systems of support frameworks continue to gain popularity, it is important to dictate where RGI can be used within these delivery models. At Tier 1, RGI can be used as a universal intervention in a large group or whole school setting. Tier 2 specifies the use of the intervention in smaller groups of students, and in Tier 3, interventions are implemented in an individualized manner (Tilly, 2008). This chapter focuses on the application of RGI interventions in the school setting that are specific to student mind–body health purposes.

Application at Tier 1

RGI has been used in a wide range of settings that can be modified to fit within tiers of a school. As a universal Tier 1 intervention, RGI could be implemented daily, weekly, or as needed by the school principal or classroom teachers with their individual classes. RGI can be effective at Tier 1 because of its utility as a protective intervention for reducing the negative impacts of many common psychological distressing factors. RGI research has shown success with improving levels of depression and anxiety (Costa & Barnhofer, 2016), improving abilities of short-term memory (Hashim & Zainol, 2015), increasing levels of self-efficacy (Kim, Newton, Sachs, Glutting, & Glanz, 2012), and decreasing levels of school-related stress (Scrimin et al., 2014). Implementing an RGI intervention as a morning routine for a school, for example, can serve as a proactive way to reduce the experience of negative emotions, improve functions of the mind, and improve the ability to cope with stress while students are at school.

In addition to its uses as a protective intervention at Tier 1, RGI can also be used as an intervention to address more global difficulties students are already experiencing, such as test-related anxiety. Using RGI as a Tier 1 intervention for test anxiety is particularly relevant due to the rising rates and overwhelmingly negative implications of anxiety with adolescents. Test anxiety rates have increased due to the more frequent use of tests, testing at younger ages, and the increased pressure parents and society put on students in schools (King et al., 1989). Because of this, it is estimated that the prevalence rate of test anxiety in school-aged students is 25% to 30%. Numerous studies have found high test anxiety to result in lower performance on tests, poorer global academic outcomes, and more negative psychological and physiological outcomes across multiple subjects (Horn & Dollinger, 1989; Prins, Groot, & Hanewald, 1994; Zatz & Chassin, 1985). An appropriate approach to implementing RGI to address test anxiety at Tier 1 may include a classroom teacher using a script to guide the entire class through calming imagery to reduce feelings of nervousness and anxiety surrounding testing.

When implementing RGI at Tier 1, special considerations should be made for how the delivery of such interventions would differ from a typical RGI intervention. For example, RGI has been implemented in 30-minute and even 60-minute sessions with some individuals (Weydert et al., 2006). As a Tier 1 intervention, it would be more realistic to have all students guided through the RGI process by the announcement speaker for a few minutes at the beginning

of a school day. The duration of RGI at Tier 1 would be short to accommodate the schedule of the school day. Another option for implementing RGI at Tier 1 would be to have classroom teachers guide their students through the RGI process using a short script or 5- to 10-minute recording. At Tier 1, RGI should be implemented as a short intervention and should not necessarily target specific symptoms or emotions. It should be used as a universal guide to initiate positive thinking and reduce stress for students at a school.

Application at Tier 2

RGI can be appropriately implemented at Tier 2 by targeting difficulties of at-risk students. An RGI intervention at Tier 2 can be used as an intensive intervention specific to the needs of a small group of students. RGI sessions at Tier 2 should be conducted in groups no larger than four to six students with common needs. For example, RGI can be used for students with physical disabilities that may cause discomfort or pain during the school day. Students who experience these symptoms can be given RGI instruction during the school day in a resource classroom to help improve aches and pains as a result of their disability. An RGI intervention for students experiencing physiological pain can include imagery descriptions such as “your body is feeling light like a feather, there is no pressure on your joints and bones, and your breathing is calm and rhythmic like waves in an ocean.” Several studies have found support for RGI interventions improving physical discomforts of children with disorders such as sickle cell disease and chronic abdominal pain (Dobson & Byrne, 2014; Weydert et al., 2006). Using RGI at Tier 2 can provide students who experience chronic physiological pain with comfort during the school day, which is necessary to facilitate learning and to reduce the number of missed school days due to disease and disability.

Application at Tier 3

Much of the research on RGI focuses on highly individualized, small group interventions, making RGI ideal for use with Tier 3 populations. At Tier 3 in an RTI model, students receive high teacher-to-student ratio and small group specialized interventions. Students receiving Tier 3 services traditionally have not responded to prior attempts to manage school-based academic, social, and behavioral concerns. Because of this, when implementing RGI in a Tier 3 setting, it is important to consider students’ preferences, motivating factors, and areas of concern when constructing the relaxation exercises and guided visualizations. This information should be gathered through an informal evaluation such as asking students what they enjoy or, for nonverbal students, evaluating physical cues of enjoyment (e.g., smiling, nodding, making enthusiastic hand or body gestures) after prompting on specific images or themes. If constructing an RGI intervention to involve imagery related to an area of concern, it is suggested that school-based practitioners in a Tier 3 setting research and become familiar with the concern before constructing the imagery. Consider consulting with a school psychologist or school nurse before

implementing guided imagery interventions that will walk the student through the process of a physiological concern. It should also be noted that certain relaxation techniques, such as progressive muscle relaxation, may be unsuitable for some students, such as those with significant physical impairments or degenerative illnesses. After careful consideration of the student's preferences and limitations, a scripted RGI intervention can be created. At this tier, individual, face-to-face implementation of relaxation practices and guided visualizations would be appropriate.

As mentioned earlier, RGI as a Tier 3 intervention would only be appropriate for students who have not responded to any interventions given either school wide or in a small group setting. For example, a student with autism spectrum disorder that has not responded to any intervention to address externalizing behaviors, such as inappropriate self-stimulatory behavior, may benefit from RGI at this level. An RGI intervention for a student such as this would consist of imagery that is highly appealing to the student and make use of relaxation techniques targeted to reduce motor movement that are appropriate to the student's ability level. For example, progressive muscle relaxation may not be a useful relaxation technique if the student has trouble with motor control (a common symptom of autism spectrum disorder; Fournier, Hass, Naik, Lodha, & Cauraugh, 2010).

By implementing RGI at Tier 3, practitioners have the benefit of assessing the student's response to the intervention while it is occurring to inform any script modifications that may be beneficial for the student. Another delivery method appropriate for a Tier 3 population is audio recording the RGI script and providing the recording to students and their guardians. This method can facilitate the generalization of RGI use in home and school settings.

CASE STUDY

This contrived case study is based on a combination of studies that have used RGI interventions. The presenting problem concerns students with asthma. The Centers for Disease Control and Prevention reported in 2015 that the national prevalence rate of asthma in school-aged children to be 8.4%. Given these statistics, there is a strong likelihood most schools will have students that have asthma. Students with asthma experience symptoms such as rapid and intermittent breathing, coughing spells (especially during play, at night, or while laughing or crying), pain and tightness in the chest, wheezing, loss of breath, tightened neck muscles, feelings of weakness and tiredness unjustified by physical exertion, and overall low levels of energy (Banzett, Dempsey, O'Donnell, & Wamboldt, 2000). Asthma symptoms are often displayed intermittently during everyday functioning but can also appear with more intensity and impairment during episodes called *asthma attacks*. Because of these symptoms, children with asthma are often limited when participating in physical activities, which may lead to feelings of sadness, loneliness, exclusion, stress, and so forth. Reducing symptoms of asthma can improve physical health by increasing lung capacity, regulating breathing, and improving lung functioning.

These improvements can foster increased participation in school-based and extracurricular activities, and reduced stress and can serve as a protective factor against a host of negative psychological outcomes.

Background

Maxwell was a 10-year-old student in the fourth grade who had asthma and experienced the related symptoms described earlier. He had to sit out at recess because of frequent asthma attacks he had at the beginning of the school year. During asthma attacks, Maxwell fell to the ground and clenched his chest, tried to catch his breath, and turned pale or even blue. These attacks happened after games of tag and soccer. Because of these recurring episodes, he was limited to activities such as sitting on the “friend bench” on the edge of the playground and chatting with other students or playing seated games on the blacktop. He was not allowed to play basketball, kickball, or any of the other activities he used to enjoy. Maxwell’s teacher reported that after recess each day, he became quiet and withdrawn. His teacher reported that he also had days when he came back from recess crying because he saw his friends having fun playing sports and felt left out. Maxwell often did not complete any schoolwork assigned at the end of the day due to lack of motivation and intense sadness resulting from his experiences at recess. The school psychologist determined that RGI may help relieve Maxwell’s symptoms.

Intervention

Step 1

Parent permission was obtained to use an RGI intervention with Maxwell.

Step 2

Maxwell was informed that before recess each day he would report to the school psychologist’s office and complete a short activity with the school psychologist to help his lungs feel better and improve his asthma symptoms so that he could play at recess.

Step 3

Before implementation sessions began, the school psychologist met with Maxwell to talk to him about what he liked and what made him calm and his favorite places and things to do and other things that could be used during RGI sessions.

Step 4

According to Maxwell’s interests, the school psychologist created the following RGI script that was then recorded by the nurse:

Maxwell, now we are going to relax; please close your eyes. I would like you to think about your breathing. Notice how the cool air goes in through your nose, and warm air comes out. Let’s practice some breathing together. Together we are

going to breathe in for 5 seconds and breathe out for 5 seconds. Let's try now: [audible breathe-in sound] one, two, three, four, five, [audible breathe-out sound] one, two, three, four, five. Good job, Maxwell. Now that your body is nice and relaxed, we are going to imagine your favorite place, the school playground. Maxwell, you are standing in the playground at school. What do you see? Notice the things around you, the brightly colored monkey bars, the blue and red rubber floor. Notice the sounds around you? Listen to the sounds of the creaking swings and the laughter of your friends. Notice your breathing. Do you smell anything? Breathe in the smells the cafeteria is making and the fresh air around you. Take a moment to stand here and feel relaxed. Maxwell, I am going to count backward from five now; once I hit zero you will be back in the nurse's office, and you can open your eyes: five, four, three, two, one, zero. Welcome back, Maxwell. When you are ready, please meet me at the school psychologist's desk.

Step 5

When Maxwell arrived at the school psychologist's office for each session, the lights were dimmed, and soothing music he enjoyed was played to avoid distractions and other noises.

Step 6

Maxwell sat in a cushioned chair with a footstool and armrests. He was given a minute to settle into the chair, put his feet up, put his arms on the rests, and close his eyes. The school psychologist then started the RGI recording.

Step 7

Maxwell did the RGI intervention daily for 1 week while continuing his recess activities. After completing 1 week of sessions, he continued to receive the intervention before recess, but could then participate in his preferred recess activities, such as kickball. Maxwell was monitored for symptoms of asthma while at recess. He continued to receive the intervention for at least 4 weeks; when the intervention showed signs of success, the intervention frequency was reduced and faded.

Outcome

Maxwell's symptoms of asthma significantly decreased. He had no episodes of asthma attacks at recess and was able to play games such as kickball, basketball, and freeze-tag with his friends. Maxwell had normal responses to running, such as breathing heavily and quickly, but not the severe symptoms of asthma he had experienced in the past. The frequency of the intervention was reduced to three times a week after 4 weeks of successful implementation. After 5 months, Maxwell no longer needed the RGI intervention before recess.

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12

Physical Activity Interventions in the School Setting

Cheryl Maykel and Marlena Minkos

There are many benefits to engaging in regular physical activity that can be realized in a school setting. These include well-known physical health benefits; psychological benefits, such as improved cognition (Fedewa & Ahn, 2011) and executive functioning (Tomprowski, Davis, Miller, & Naglieri, 2008); academic gains (Centers for Disease Control and Prevention [CDC], 2010); and improved classroom behavior (Mahar et al., 2006; Maykel, Bray, & Rogers, 2018). Despite these benefits, children and adolescents tend to engage in less physical activity than recommended on a regular basis (CDC, 2012). However, it is possible to integrate more physical activity into the school day and for schools to become community leaders in helping youth to meet the recommended amounts of daily physical activity.

Opportunities for younger students to engage in physical activity during the school day typically include recess and physical education class. However, such opportunities are often offered less frequently than one might assume and involve low levels of physical activity. Many students choose to engage in sedentary activities during recess (Gibson et al., 2008). Physical education class is rarely offered every day, and students are not engaged in moderate to vigorous physical activity for most of the class period (see Coe, Pivarnik, Womack, Reeves, & Malina, 2006). Older students have even fewer opportunities for physical activity at school.

Yet, schools are often considered an ideal place to intervene on behalf of children because they spend so much time at school and many students can

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be addressed at once in the school setting. In addition, by involving students in regular physical activity while they are young, schools may increase the likelihood that students will continue to participate in physical activity later in life (Telama et al., 2005).

COGNITIVE HEALTH BENEFITS

Studies of physical activity involving school-age children have grown in recent years as concerns about childhood obesity and associated long-term health risks have risen. Some studies have focused on weight or body mass index and other physical health indicators (Hollar et al., 2010), whereas others have expanded to include cognitive and behavioral outcomes that might help sway stakeholders on the fence about increasing the amount of physical activity included during the school day. Along with a growing research base to support the cognitive health of adults, particularly with an aging population, studies focusing on these same types of outcomes among school-aged children and adolescents have been gaining momentum in the literature.

Fedewa and Ahn (2011) included 59 studies in a meta-analysis that found there are significant, positive effects of physical activity on cognition and achievement among children and adolescents. The study also found that the greatest cognitive impact of physical activity results from a program that occurs 3 or more days a week and involves aerobic exercise. Furthermore, Davis and colleagues (2007) supported the concept that more is better with the finding that longer daily sessions of physical activity (40 minutes vs. 20 minutes) had greater cognitive benefits for overweight children aged 7 to 11 years.

The type (acute vs. chronic) of physical activity engagement may determine the cognitive benefits (mainly attention vs. more global cognitive benefits respectively; see de Greeff, Bosker, Oosterlaan, Visscher, & Hartman, 2018, for a review) such that there are some benefits immediately following a session of physical activity and others that may develop as part of a regular physical activity routine over time. A meta-analysis conducted by Álvarez-Bueno and colleagues (2017) found substantial support for the claim that physical activity does have a positive impact on various aspects of executive functioning and metacognition. Interestingly, physical activities with higher cognitive demands may produce more cognitive benefits than physical activities that involve simpler, more repetitive movements (see Álvarez-Bueno et al., 2017).

In a review by Tomporowski and colleagues (2008), it was found that the greatest effects of physical activity on children's cognition were in the area of executive functioning, a set of skills known to contribute to academic achievement. Executive functions are related to various forms of behavioral control and are often impaired in individuals with attention-deficit/hyperactivity disorder (ADHD; Barkley, 2003).

One possible explanation for the effects of physical activity on cognition may be related to neurotransmitter functioning in the brain. There is a

relationship between the neurotransmitter group of monoamines and exercise (Chaouloff, 1989), as well as between monoamines and ADHD (Arnsten, 2006). Though the complex nature of these relationships is yet to be fully understood, the medications that are most commonly used to treat the symptoms of ADHD do so by acting indirectly on monoamine systems (Arnsten, 2006). These medications typically result in the release of specific neurotransmitters or fewer of these being broken down. In either case, more are available for use by the brain (Iversen, Iversen, Bloom, & Roth, 2009).

Children with ADHD may naturally and subconsciously use movement as a compensation strategy and have been observed to increase movement during more cognitively demanding tasks (Rapport et al., 2009). Also, in ADHD rat models, exercise was found to be as effective at reducing specific behaviors considered typical of ADHD, including ignoring irrelevant stimuli and hyper-social activity, as two commonly used ADHD medications (Robinson, Eggleston, & Bucci, 2012). Although all students can benefit from increased attention and behavioral control, studies such as these suggest the potential for physical activity as an effective intervention for students with ADHD.

One study demonstrated that various cognitive markers, as well as arithmetic and reading comprehension, were significantly greater in students with and without ADHD following a 20-minute treadmill activity compared with 20 minutes of reading (Pontifex, Saliba, Raine, Picchietti, & Hillman, 2013). Another study found that 8- to 12-year-old boys with ADHD who engaged in more moderate to vigorous amounts of physical activity performed better on executive functioning tasks involving planning (Gapin & Etnier, 2010).

BEHAVIORAL BENEFITS

Some studies have focused on physical activity and behavioral outcomes in the classroom. The results from these studies have suggested that following a period of physical activity, students have higher rates of time on task (TOT) and are more engaged in the classroom. In one study, TOT was assessed among third- and fourth-grade students who participated in 10-minute breaks for physical activity as part of the Energizers program (Mahar et al., 2006). Higher rates of TOT were observed following the physical activity breaks. In addition, the students who had the lowest rates of TOT before physical activity made the greatest improvements of all students following the activity (Mahar et al., 2006). In another related study, a class of third-grade students was observed following both periods of seated classwork and 10-minute breaks for physical activity in the classroom (Maykel et al., 2018). Students in this study had significantly higher rates of TOT following the physical activity compared with their rates following standard, inactive periods in the classroom. Similar results were also found by Grieco, Jowers, and Bartholomew (2009). The Texas I-CAN! Program engaged third graders in 10 to 15 minute physically active lessons. It was found that although students had significantly lower

rates of TOT after an inactive lesson, rates improved after an active lesson. As in the study by Mahar and colleagues (2006), it was found that the active lesson had the greatest impact on the students who demonstrated the lowest levels of engagement before the intervention (Grieco et al., 2009).

Physical activity interventions have been successful among special populations of students, in addition to those with ADHD. Nicholson, Kehle, Bray, and Van Heest (2011) found improved academic engagement among four third-grade boys with autism spectrum diagnoses following 12 minutes of jogging and 5 minutes of walking and stretching. In another study (Medcalf, Marshall, & Rhoden, 2006), TOT was observed following physical education class among four 15-year-old male students with emotional and behavioral difficulties. The researchers noted improved rates of TOT as well as less variability in rates after the period of activity.

ACADEMIC BENEFITS

The cognitive and behavioral benefits of physical activity likely contribute to the academic benefits that were noted in a CDC (2010) review that found that physical activity programs implemented at school can have a positive impact on both grades and standardized test scores. Given that time is a major barrier to implementing school-based interventions, some studies have integrated physical activity into the curriculum. Among these, Donnelly and colleagues (2009) implemented the Physical Activity Across the Curriculum program as part of a randomized controlled trial involving second- and third-grade students at 24 schools. Physical activity was integrated into a grade-appropriate curriculum administered in 10-minute sessions throughout the school day. Students in the intervention schools demonstrated improved achievement on Wechsler Individual Achievement Test (2nd ed.; The Psychological Corporation, 2001) composite reading, spelling, and math scores from year one pretests to year three posttests compared with students in control schools. Another program, Take 10!, also involves the integration of physical activity into the curriculum and has demonstrated that in-class physical activity can engage students in the recommended moderate to vigorous intensity of activity (Stewart, Dennison, Kohl, & Doyle, 2004).

SPECIAL CONSIDERATIONS

When implementing physical activity interventions in a school-based setting, school staff should plan accordingly to provide appropriate accommodations to students with disabilities. Given their expertise and training in supporting students with disabilities, school psychologists are ideally suited to guide teams in the implementation of individualized accommodations. Students with specific behavioral and/or learning needs (e.g., students with autism, learning

disabilities, ADHD, emotional or behavioral disabilities) may benefit from a presentation of the intervention in a highly structured manner, incorporating clear rules and instructions, similar routines, and repetition of content. This can be achieved by using a consistent intervention schedule that is visible and accessible for all students. Additional visual supports may be used to communicate intervention content and behavioral expectations. Zhao and Chen (2018) used the Treatment and Education of Autistic and Communication Handicapped Children (TEACCH) model (Panerai, Ferrante, & Zingale, 2002) to enhance the effectiveness of a physical activity intervention for students with autism. The model supported the researchers in providing students with an organized physical environment, clear expectations, visual materials, schedules, and work systems (Zhao & Chen, 2018).

Students with behavioral needs may also benefit from the use of evidence-based, behavior management strategies to increase engagement and reduce disruptive behavior. Such strategies include designing high-interest, age-appropriate activities to promote student engagement, facilitating fast-paced instruction, providing acknowledgment for desirable behaviors, and minimizing attention given to undesirable behaviors. Additional contingencies, such as token economies or class-wide incentive plans, may also be incorporated into physical activity interventions to promote student engagement. Bustamante and colleagues (2016) noted that three specific strategies assisted in decreasing disruptive behavior in their implementation of an exercise intervention with students with ADHD and disruptive behavior disorders: (a) four basic rules regarding behavioral expectations were posted and reviewed at the beginning of each session; (b) a group contingency-based behavior management system (i.e., the Good Behavior Game) was implemented, and students were provided with the opportunity to earn pizza parties; and (c) special notes were sent home to parents praising good behavior.

Special care must be taken in providing accommodations for students with individualized physical needs. It may not be advisable for students with disabilities that impact their motor planning and functioning (e.g., students with cerebral palsy or dyspraxia) to complete some physical activity tasks without modifications. For example, students with balance difficulties may not be able to stand on one leg safely. Planning proactively and providing appropriate alternative movement options (e.g., incorporating positions that involve standing on both legs) can effectively mitigate such difficulties. Movement may also be modified accordingly to provide access to physical activity interventions for students with significant physical needs, such as those who use a wheelchair. For example, tasks can be simplified to involve movement of body parts that can be easily accessed in a wheelchair, such as the arms, hands, or head.

Many physical activity interventions can be implemented in the classroom setting; however, special attention must be paid to providing a suitable space for students to participate in the intervention safely. Desks and other classroom furniture may have to be moved temporarily to provide enough space for the activity. Alternative locations may also be used, such as a gymnasium,

outdoor area (e.g., playground), or motor room, if available. However, consideration should be given to scheduling for other potential uses of the space, as well as any additional supervision needs to ensure the safety of the students.

Physical activity interventions are generally low resource and can often be implemented with few, if any, additional materials or resources. However, some interventions do require the use of specific materials. For example, props such as balls, jump ropes, and resistance bands may be used. Interventions that incorporate music necessitate the use of a device to play the music. Programs that integrate physical activity into the curriculum involve the use of related curricular materials (e.g., reading material, worksheets). Interventions that use online or on-screen guides, such as Go Noodle (<https://www.gonoodle.com/>), warrant special consideration with respect to technology. When implementing such interventions with small groups or individual students, an iPad or tablet may be suitable for displaying the visual content. However, implementation with large groups of students may necessitate the use of a device capable of projecting the visual content onto a larger surface (e.g., SMART Board, projector). Finally, interventions using an exergame format may require the use of a specific video game system. For example, Staiano, Abraham, and Calvert (2012) implemented an intervention with a population of adolescent students that used the Nintendo Wii EA Sports Active video game.

Physical activity interventions do not generally necessitate the use of additional or specialized staff; many interventions have demonstrated success with teacher-led activities (see Fedewa & Ahn, 2011). However, initial training and ongoing support are sometimes needed to facilitate teacher implementation. For example, Donnelly et al. (2009) provided teacher implementers with 6 hours of in-service training at the beginning of each school year to support the implementation of the Physical Activity Across the Curriculum intervention with elementary school students. Of interest, peers may also be trained to serve as intervention leaders to further increase efficiency and use of resources. Jenkinson, Naughton, and Benson (2012) used a train-the-trainer model to prepare adolescent students to facilitate a peer-assisted learning physical activity intervention with younger students. Finally, school psychologists may be used as a valuable resource in the implementation of physical activity interventions because they can assist teachers in differentiating instruction to meet individual student needs. In addition, school psychologists are well suited to assist in monitoring implementation fidelity, as well as identifying, collecting, and analyzing relevant outcome data.

APPLICATION WITHIN A TIERED SERVICE DELIVERY MODEL

Physical activity interventions can be easily integrated into existing multi-tiered system of support frameworks implemented in schools to potentially improve the academic and social-emotional outcomes of students. In a public health model, primary interventions are typically provided to all students to

reinforce prosocial behaviors, promote overall well-being, and improve resilience to disease or disorder (Fedewa, Candelaria, Erwin, & Clark, 2013). Schools have been asked to take an active role in addressing the physical health and overall wellness of children (Pate et al., 2006), and physical activity is an essential component of this task. In addition, physical activity has been shown to improve executive functioning in students (see Tomporowski et al., 2008), which is integral to their academic success. As such, physical activity interventions may offer a valuable supplement to universal programs provided to all students to improve behavior and academic achievement. Fedewa et al. (2013) suggested that Tier 1, or school-wide, implementation should be integrated throughout the day and can include physical education and recess activities along with short bursts of physical activity interspersed within the classroom setting. Programs that integrate physical activity across the curriculum may also be adopted school wide to increase the activity of all students. Movement can often be integrated into the school day with little to no disruption to existing routines and could potentially improve the physical, cognitive, and mental health outcomes of all students (Fedewa et al., 2013).

Students with more intensive behavioral, academic, and/or health needs may benefit from increased exposure to physical activity beyond what is provided at the school-wide level. These students may be identified for participation in physical activity interventions at the Tier 2, or small-group, level. Students with similar needs, such as those with focus or impulse control difficulties, can be grouped together to participate in movement activities on a regular basis. The activities may be scheduled during times of day when the students typically struggle, such as during transitions. School psychologists, physical education teachers, and other relevant school staff may play a key role in facilitating such groups. Physical activity can also be integrated into social skills groups to potentially improve outcomes. Game-based activities that involve movement may provide a more naturalistic setting for students to learn and generalize prosocial behaviors than a traditional social skills group setting can offer. Finally, Fedewa et al. (2013) suggested that Tier 2 physical activity interventions may also be offered in conjunction with before- and after-school programs.

Students with even more intensive needs may benefit from physical activity interventions offered at the Tier 3, or individual, level. Supports provided at this level are designed to meet the needs of individual students and are implemented on a more frequent basis. At the Tier 3 level, physical activity can be offered to students with intense behavioral needs as reinforcement for engaging in expected behaviors. For example, students can “work for” short breaks to play basketball or engage in other preferred movement activities. Incorporating physical activity in this capacity offers several advantages. It allows students to engage in a preferred activity and/or escape task demands contingent on expected behavior. In addition, it provides them with an opportunity to engage in an activity that could potentially improve their ability to focus and attend during subsequent academic tasks. Additional examples of

Tier 3 interventions include having a physical educator work on specific strength or cardiovascular routines with an individual student, allowing a student to access alternative seating options such as a stability ball or wobble stool or teaching a student to periodically perform jumping jacks or other physical activities in a designated area in the classroom for a short time and then return to typical instructional activities (Fedewa et al., 2013).

CASE STUDY

Mrs. Smith is the principal of Sunnyside Elementary School. She recently attended a conference where she learned about the benefits of physical activity for children. Mrs. Smith was particularly interested to hear that results of research have indicated that physical activity can have a positive impact on students' attention and executive functioning skills because those are common weaknesses displayed by students in her school. Her school already has some opportunities for movement built into the daily schedule, such as recess and physical education classes. However, she wondered whether expanding opportunities for physical activity might provide additional benefits for her students. Mrs. Smith did a quick search online and came across a guide for implementing a Comprehensive School Physical Activity Program (CSPAP) that was developed by the CDC, SHAPE America (CDC, 2013, 2018a). She decided to use the resource as a guiding framework to systematically increase the incorporation of physical activity in her school.

As recommended in the CDC guide, Mrs. Smith began by creating a CSPAP committee in her school. She asked the physical education teacher to coordinate the committee as physical activity leader. Additional committee members included the school nurse, school psychologist, special education teacher, and one teacher representative from each grade level, as well as Mrs. Smith as the building administrator. The CSPAP committee also planned to invite student and community representatives to meetings periodically.

The CSPAP committee then used the School Health Index (SHI): Self-Assessment & Planning Guide (CDC, 2017, 2018b) to examine existing opportunities for physical activity at Sunnyside Elementary School and to ascertain the presence of necessary environmental supports. The results of the SHI were then used to create a vision statement and define long-term goals with corresponding objectives. The broad goal of increasing opportunities for students to engage in moderate to vigorous physical activity at Sunnyside Elementary School was identified. Specific, measurable objectives involved providing training to teachers on how to integrate physical activity into the academic curriculum, building structured movement breaks into the school schedule, and expanding physically active before- and after-school programs offered to students.

Next, the CSPAP committee identified short-term, intermediate, and long-term outcomes that they expected to arise as a result of implementation. An

example of a short-term goal identified by the committee is that within the first year of implementation, students at Sunnyside Elementary School will have increased opportunities to engage in physical activity during the school day, as indicated by the number of movement breaks provided in classrooms, as well as the number of lessons per day that incorporate physical activity.

The committee then planned specific activities for the CSPAP that are necessary to achieve the identified outcomes. Plans were developed to provide teachers with training on incorporating movement into the academic curriculum, create a resource bank of sample movement breaks (e.g., East Carolina University, 2006) and guidelines for use with teachers, and develop before- and after-school clubs that involve movement, such as a running club and a jump rope team. After planning the CSPAP activities, the committee moved forward with implementation. A phased implementation strategy for incorporating movement into the academic curriculum was used, in which kindergarten teachers implemented the program first, followed by first-grade teachers, and so on. This strategy was used to provide adequate training and planning time for teachers.

Finally, the CSPAP committee planned and implemented a process for evaluating the program. The initial focus was on assessing the degree to which the program was implemented as intended. The committee used a variety of data sources to analyze implementation fidelity, such as questionnaires, interviews with staff, and classroom observations. After the program was implemented for over a year, the committee used data to assess the degree to which the program was achieving identified outcomes. Mrs. Smith noticed that, according to classroom observation data, students are more engaged in classrooms and office discipline referrals have steadily decreased in the year following implementation of the CSPAP.

CONCLUSION

Physical activity has many known physical health benefits. Beyond these, it has also been found that physical activity positively impacts cognition, academics, and behavior. In consideration of these benefits, and knowing that physical activity habits that form early in life are likely to continue throughout life (Telama et al., 2005), it seems clear that engaging youth in regular physical activity routines is an important endeavor. However, most children and adolescents do not meet the recommendations for daily physical activity (CDC, 2012). Therefore, concentrated efforts to increase physical activity among U.S. youth are needed to impact this issue. School-based programs may be able to contribute significantly to increasing physical activity for children and adolescents.

There are several reasons cited to explain why schools do not increase the amount of time spent on physical activity. Perhaps the greatest among these is the concern of taking time away from academics (as discussed in

Coe et al., 2006), particularly when pressures to meet standardized test goals are high and teachers are already tasked with fitting a lot into the average school day. Many programs have been developed in response to this concern, as evidenced by the integration of physical activity into the curriculum (Donnelly et al., 2009; Grieco et al., 2009; Stewart et al., 2004), physical activity exercises led by the teacher in the classroom (Maykel et al., 2018), and the use of frequent, quick breaks for movement throughout the school day (Mahar et al., 2006).

Although many school stakeholders may recognize the benefits of physical activity, some still hesitate to endorse increased physical activity during the school day. Emerging support for cognitive and behavioral benefits, including increased engagement in the classroom following physical activity, might help bring more people on board with the effort. After all, it has been found that the more time students spend in their seats, the more disruptive (Jarrett et al., 1998) and less engaged (Grieco et al., 2009) they tend to be. Relatedly, when students are off task, they disrupt their learning and that of their peers. The more engaged students are, however, the greater their opportunity is to learn and achieve academically (Shapiro, 2011). Physical activity is a simple intervention that can easily be implemented with little or no additional cost, training, materials, or space outside the classroom. It is beneficial to students' overall health and may improve performance in school.

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13

School-Based Yoga for Managing Stress and Anxiety

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Consistent with increased research support for the benefits of yoga, there has been considerable growth in yoga's popularity among school-aged children in the United States. According to the National Health Interview Survey, the number of children practicing yoga in the United States increased from 1.3 million to 1.9 million from 2007 to 2012 (Black, Clarke, Barnes, Stussman, & Nahin, 2015). This is a nearly 50% increase in 5 years, and the popularity of yoga for school-aged students is expected to continue to grow dramatically because many schools are offering yoga during the school day or as an extracurricular activity. Although yoga has yet to reach the status of being an evidence-based intervention in school settings, it is a promising approach to managing stress and anxiety in school-aged children.

Stress and anxiety have significant negative impacts on learning and well-being (see Chapter 12, this volume, for a review of the impacts of stress on children and adolescents). Contemporary students are reporting unprecedented levels of stress and worry. About 14% of children (ages 8–12) and 28% of adolescents (ages 13–17) say they worry a lot or a great deal (American Psychological Association, 2012). Anxiety is a prevalent and debilitating problem for many school children that is often unrecognized and untreated (McVoy & Findling, 2017). Nearly one in three adolescents (31.9%) exhibit symptoms of anxiety disorders (Merikangas et al., 2010). Systematic, effective, and efficient interventions for managing stress and reducing anxiety could have major benefits for school children, their families, and school staff.

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Promoting Mind–Body Health in Schools: Interventions for Mental Health Professionals,
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This chapter examines school-based yoga with a specific focus on its effects on stress and anxiety. We summarize research on the benefits of yoga from the standpoint of positive psychology and ecological systems theory (Bronfenbrenner, 1977; Stormshak & Dishion, 2002). From this theoretical base, we present yoga as an intervention that fits within a three-tiered system of service delivery that could work efficiently in contemporary schools. Finally, we give examples of promising practices and special considerations for school-based yoga designed to address problems related to stress and anxiety for the general population of students, as well as special populations.

EFFECTS OF YOGA ON THE MIND AND BODY

The practice of yoga involves techniques such as physical postures (*asanas*), breath control (*pranayam*), and various deep relaxation and meditation techniques (*pratyahara*, *dharana*, *dhyana*). Although these techniques can also be used for cultivating mindfulness, yoga and mindfulness can be distinct practices (Falsafi, 2016; see also Chapter 2, this volume, for a broader discussion of mindfulness). Yoga is connected with a spiritual tradition originating in India over 5,000 years ago. The original yoga is a pathway to well-being that incorporates yoga techniques in an intertwined way of existence (Iyengar, 2005). However, in the secular Western world, particularly for schools in the United States, yoga techniques are typically used to promote a mindful state of body and breath awareness with expected benefits on health and well-being.

Research on school-based yoga is in its early stages. In a recent comprehensive review of school-based yoga, most of the studies (76%) were judged to suffer from significant methodological issues (Khalsa & Butzer, 2016). Furthermore, there is a high degree of variability of yoga interventions in the existing studies, with heterogeneity in the nature of yoga classes, the number of weeks or months that yoga was provided, and the frequency and duration of yoga classes. Methodological problems and lack of standardization of yoga practices have resulted in inconsistent and contradictory findings in school-based studies. However, there is extensive and growing documentation of the beneficial effects of yoga on adults, including systematic studies showing causal effects on brain–behavior relationships. It is beyond the scope of this chapter to review all this research, so we present an overview of some of the brain–body relationships that are most relevant to school-based yoga.

Yoga has been shown to improve functioning in the cortex and the limbic system, with acute improvements in functioning and long-term changes in morphology (Desai, Tailor, & Bhatt, 2015). In a cross-sectional study with adults, yoga-practicing participants had increased gray matter concentration of the hippocampus and other brain regions involved in emotion regulation, learning, and memory processes compared with the control group (Gothe, Hayes, Temali, & Damoiseaux, 2018).

Another elegant study of the effects of mindfulness on the brain showed that specific practices had specific effects on brain areas, and the changes in

the brain were associated with predictable changes in behavioral performance (Valk et al., 2017). In this study, the participants who were taught to focus on nonjudgmental observation of thoughts experienced positive changes in the brain areas identified as controlling social cognition and also demonstrated improvements on social cognition tasks. The participants of this group were trained through face-to-face meditations and dyadic empathic listening. Another group focused on socioaffective skills, such as empathy and compassion. As predicted, this group showed growth in predicted brain areas, such as the anterior cingulate cortex, as well as improved performance on tests of social perspective taking. The training activities included loving-kindness meditation performed through direct instruction and mobile applications performed individually and in dyads. A third group was trained to focus on the present moment, which entailed attention to and awareness of the self and the environment. The activities of this group included meditations such as body-scan and walking meditations performed in the group through face-to-face interaction and home practices performed alone. This group showed predicted changes in prefrontal cortical areas and improved performance on attention tests (Valk et al., 2017). Taken together, these studies document the causal impact of yogic interventions on the brain areas and the corresponding behaviors, thus showing that specific practices can cause specific targeted changes in the brain and behavior.

We should note that the studies cited in the previous paragraph were with adults, revealing a causal impact of mindfulness training on brains and behavior. Differences in the benefits or effects of yoga between adults and children have not been documented in the current literature. Nevertheless, the prospect of differences between adults and children is plausible. On the one hand, the greater neuroplasticity of children's brains may make children more amenable to the benefits of yoga and mindfulness (Kolb & Gibb, 2011). On the other hand, adults may be more motivated or have the brain development to focus more diligently on yoga practices (e.g., because of more mature frontal lobes). Thus, it may be possible to engage adults in more intense interventions with more significant results, such as in the study conducted by Valk et al. (2017). School-based yoga interventions should be delivered at the intensity levels deemed to be developmentally appropriate for children. Nonetheless, we make inferences based on the research support for these practices from the adult literature and cite research specific to children whenever possible.

In addition to brain changes, it is evident that yoga improves regulation of the autonomic nervous system, which consists of the sympathetic and parasympathetic systems (Streeter, Gerbarg, Saper, Ciraulo, & Brown, 2012). Perceived threat activates the *sympathetic nervous system* to have fight, flight, or freeze responses (Richter & Wright, 2012). Sympathetic activation decreases blood flow to the extremities and the digestive system and also raises heart rate, often leading to a sense of tingling and "butterflies" in the stomach (Richter & Wright, 2012). In addition, sympathetic activation increases blood

pressure and raises glucose levels in the bloodstream (Richter & Wright, 2012). Elevated blood pressure and glucose are associated with cardiovascular disease and diabetes (Richter & Wright, 2012).

The complementary system to the sympathetic nervous system, the *parasympathetic system*, is stimulated during periods of relaxation. The parasympathetic system incites restorative functions starting with increased blood flow to the digestive system, brain, and extremities (Richter & Wright, 2012). Dozens of studies show that yoga is effective in moving the autonomic nervous system toward the relaxed, predominately parasympathetic functions, which are also associated with enhanced cognitive functioning and emotional regulation (Guglietti, Daskalakis, Radhu, Fitzgerald, & Ritvo, 2013). Some studies have suggested that the autonomic shift toward parasympathetic dominance is associated with increased gamma-aminobutyric acid (GABA) activity. GABA is a critical neurotransmitter associated with anxiety regulation (Guglietti et al., 2013).

Another brain-body connection affected by yoga is the hypothalamic-pituitary-adrenal axis and stress hormones. Research has shown that extreme levels of stress-induced hormones and neurotransmitters, particularly cortisol and noradrenaline, have significant negative influences on learning and memory processes (Schwabe, Joëls, Roozendaal, Wolf, & Oitzl, 2012; see also Chapter 2, this volume). Yoga has been found to be effective in reducing saliva cortisol after 6 weeks (Raghavendra et al., 2009). There may be some age-related differences in stress hormone effects. For example, salivary amylase, a biomarker of psychosocial stress responsiveness, was compared in older (65–75 years old) and younger adults (20–30 years old; Gururaja, Harano, Toyotake, & Kobayashi, 2011). There was about a 30% decrease in the younger group and 26% decrease in the senior group. However, a 4% difference is probably not practically significant even though there is a trend toward a presumably higher impact for the younger age group.

The structural changes in the brain, autonomic nervous system regulation, and hormonal regulation are mechanisms that do not work independently. For example, cyclical breathing has been shown to activate vagal nerves, as well as the cerebral cortex, hippocampus, hypothalamus, stria terminalis, and amygdala, which are related to the stress response systems, hormonal release, emotional processing, and social bonding (Brown & Gerbarg, 2005). These physiological changes are also linked with significant psychological changes. When it comes to the psychological effects of yoga, one meta-analysis (Knobben, 2013) found medium effect sizes (Hedge's *g*) for the impact of yoga on emotional well-being (.56), psychological well-being (.53), and social well-being (.42). A study of high school students found a decrease in negative affect, total mood disturbance, and anxiety; however, no significant difference was observed in positive affect, perceived stress, and resilience compared with the control group of students engaging in regular physical education classes (Noggle, Steiner, Minami, & Khalsa, 2012). The small sample size ($N = 51$) may have limited the ability of this study to detect small- to medium-sized effects.

Another potential benefit is that yoga may help to develop mind–body awareness (Butzer, Bury, Telles, & Khalsa, 2016). Being aware of endogenous cues (i.e., body awareness) can result in better self-regulation and pursuit of intrinsically motivated actions that can improve persistence and goal completion (Butzer et al., 2016). In academic settings, self-regulation can promote academic success by increasing task attentiveness (Sawyer et al., 2015). Taken together, the biological and psychological studies suggest that yoga is a promising intervention to ameliorate the negative effects of stress and anxiety on brain and body, improve well-being, and improve the biological and psychological conditions for learning.

THE IMPORTANCE OF WELL-BEING

Historically, mental health was defined as the absence of symptoms or related impairment. This unidimensional model has been strongly criticized, both theoretically and empirically (Suldo, Thalji-Raitano, Kiefer, & Ferron, 2016). Missing from the historical approach is considering positive mental health—that is, recognizing the importance of subjective well-being (SWB) in assessing mental health. From this perspective, well-being and symptoms should both be considered simultaneously.

One way of looking at symptoms and well-being concurrently is using a cross-tabulation of high and low levels of symptoms and well-being, yielding scores in four quadrants (Suldo et al., 2016). Using this approach, also called the dual factor model (DFM), people can be sorted into four groups: those with positive mental health, those who are symptomatic but content, those who are vulnerable, or those who are troubled (Antaramian, Huebner, Hills, & Valois, 2010). To be considered as having *positive mental health*, the DFM requires symptoms to be low and well-being to be high. The next best functioning group is *symptomatic but content*, in which high well-being mitigates against a high number of symptoms (e.g., a cheerful child with attention-deficit/hyperactivity disorder). The *vulnerable* group has a low number of symptoms plus low well-being and is, as the name implies, at an elevated risk for developing problems. The *troubled* group experiences a high number of symptoms and low-well-being and has the worst functioning and prognosis of the four groups (Antaramian et al., 2010).

Recently, the DFM was applied to the study of high school students' adjustment on social and academic dimensions, identity development, and physical health (Suldo et al., 2016), where multimethod and multisource data were analyzed cross-sectionally. The results were in the expected direction, validating the DFM and the importance of measuring SWB and symptoms to get the best prediction of school-based outcomes (Suldo et al., 2016). In the DFM, well-being is typically defined as the combination of self-rated life satisfaction plus positive affect minus negative affect (Suldo et al., 2016). Stress or symptoms of anxiety can be measured using standardized rating scales.

The DFM identifies two promising pathways for managing stress and anxiety: (a) reducing symptoms or (b) increasing well-being. Studies of adults have shown the positive effects of yoga on stress and anxiety (Broad, 2012). A meta-analysis of relatively high-quality studies showed that school-based yoga could reduce symptoms of anxiety and tension (Ferreira-Vorkapic et al., 2015); however, results were not stable across studies. To summarize, although school-based yoga is a promising intervention for reducing stress and anxiety; it is not yet an evidence-based treatment for reducing these symptoms.

Several studies with adults have shown that yoga does improve SWB (Hanley, Warner, & Garland, 2015; Tamilsevi & Thangarajathi, 2016; Yadav, Magan, Mehta, Mehta, & Mahapatra, 2012). Unfortunately, few school-based studies of yoga have measured SWB. However, one aspect of SWB, positive affect, has been included in several high-quality studies of school-based yoga, and the strongest result across most of the studies was an increase in positive affect (Ferreira-Vorkapic et al., 2015). Thus, it is highly likely that school-based yoga can improve well-being by increasing positive affect. Furthermore, yoga is a promising approach for improving SWB through other means (i.e., by increasing life satisfaction or reducing negative affect; Yadav et al., 2012). Thus, the DFM provides an important perspective on yoga by proposing that the benefits of yoga should be evaluated along two separate but related dimensions: well-being and symptoms of stress or anxiety. Subsequent sections examine the mind-body connection with yoga on well-being and symptoms of stress and anxiety, as well as the concept of social-emotional learning.

YOGA AND SOCIAL-EMOTIONAL LEARNING

In addition to likely helping to improve mental health as measured by the DFM, teaching yoga in schools is consistent with *social-emotional learning* (SEL). This type of learning is “the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions” (Collaborative for Academic, Social, and Emotional Learning [CASEL], n.d., para. 1). SEL is an important part of modern education and is promoted by the U.S. Department of Education (CASEL, n.d.). As discussed in the following paragraphs, yoga has benefits in many SEL target areas (Khalsa & Butzer, 2016).

There are multiple theoretical pathways by which yoga may improve SEL variables (Butzer et al., 2016). Yoga can improve self-awareness which, according to SEL, is necessary for making responsible decisions as well as understanding and managing emotions (Butzer et al., 2016). There is preliminary evidence that yoga might help with managing emotions, which is important for learning and pursuing positive goals (Butzer et al., 2016). And research is starting to show that lower anxiety and higher SWB (i.e., positive mental health from the DFM standpoint) are associated with multiple positive school outcomes (Suldo et al., 2016).

There is evidence that yoga can improve positive affect (Ferreira-Vorkapic et al., 2015), and according to the broaden and build theory (Fredrickson, 2001), increases in positive affect initiate a cascade of positive effects, beginning with more beneficial cognitions (e.g., curiosity) and physical states (e.g., lower stress hormones; Raghavendra et al., 2009). The relationship between positive emotions and cognition is complex (Gable & Harmon-Jones, 2010); low to medium intensity emotions, such as the “relaxedness” and “pleasantness” one might expect to experience in yoga, may be better for self-regulation and promoting well-being than high-intensity emotions such as joy. According to the broaden and build theory, small to moderate increases in well-being initiate a positive feedback loop. For instance, when yoga produces outcomes that elevate well-being, such as academic success, the cycle repeats itself and, theoretically, the benefits escalate in an upward spiral (Fredrickson, 2001).

YOGA AND ECOLOGICAL SYSTEMS THEORY

Schools are complicated environments with multiple persons and systems operating together. Bronfenbrenner’s (1977) classic ecological systems theory, as well as more contemporary models (e.g., Stormshak & Dishion, 2002), provides multiple levels of social structures that might account for the impact of school-based yoga. The first level of impact of school-based yoga is on the individual, possibly through its positive influence on increasing SWB and reducing stress (Hanley et al., 2015; Tamilsevi & Thangarajathi, 2016; Yadav et al., 2012). However, the individual level is limited from a systemic standpoint because many other factors influence stress and responses to stress.

The second layer of the impact of school-based yoga is on the microsystems level. A microsystem constitutes the child’s immediate surroundings, which have a direct influence on their development (Bronfenbrenner, 1977). Examples of microsystems are classrooms, clubs, sports teams, and families. If students and those around them are feeling and functioning well, the quality of their dyadic and group interactions is positively impacted in a synergistic manner. Within the classroom microsystem, how teachers come across to students can escalate or deescalate the conflict. Teacher burnout predicts student stress hormones by significantly explaining the classroom variability among students’ physiological stress regulation (Oberle & Schonert-Reichl, 2016). In turn, stressed-out students are more likely to be disrespectful of teachers, and higher levels of student disrespect contribute to teacher burnout (Hastings & Bham, 2003). Thus, a vicious cycle can develop between student behavior and teacher burnout.

Maslach, Schaufeli, and Leiter (2001) defined three dimensions of burnout: exhaustion, depersonalization, and inefficacy. Teachers often feel exhausted, and high levels of emotional exhaustion lead to withdrawal from students and other staff, as well as from the job in general. This withdrawal leads to depersonalized reactions and interactions toward students and a cynical

attitude toward the profession (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). Yoga has been found to reduce teacher stress and burnout and increase well-being (Harris, Jennings, Katz, Abenavoli, & Greenberg, 2016; Hepburn & McMahon, 2017). Thus, one important approach to school-based yoga is to offer it to teachers, which should have benefits for teachers and students within the shared student–teacher microsystem. This effect could be magnified by having both the students and the teacher learn yoga together because reciprocal interactions within the shared microsystem are mutually beneficial. This is an example of the overall effect of yoga training for students and teachers being greater than the sum of the parts, which is an essential systems theory concept.

The third layer of the potential impact of yoga is on the macrosystem, the overarching system that affects the microsystems. For example, for yoga programs to work, there must be systemic changes in the school macrosystem, such as training teachers to deliver well-being strategies to their students plus securing the time in the curriculum for this intervention to be delivered in the classroom. There may also be policy changes related to classroom evaluation considerations, such as having a policy to focus on stress management and measuring well-being as a classroom performance outcome.

Although research on school-based yoga has not yet addressed these multi-layer considerations, we posit that a systemic approach is needed to correct complicated and stubborn problems such as stress, burnout, and anxiety in schools. From the perspectives of ecological systems theory and DFM, we present yoga as an auspicious intervention that has the potential to transform school and family systems.

A THREE-TIERED APPROACH TO YOGA

A multitiered intervention structure, such as Response to Intervention (RTI) or positive behavior supports, is common in modern schools. Multitiered approaches are designed to determine the level of support the student needs and match the needs with the appropriate level of intervention (Berkeley, Bender, Gregg Peaster, & Saunders, 2009). In a tiered approach, the first consideration is the purpose or goal of the program. In this chapter, we focus on reducing anxiety, stress, and burnout. From the standpoint of the DFM, we also target increasing student well-being and striving for positive mental health. To determine whether goals are being met, it is necessary to set up a screening and progress-monitoring system. This may involve periodic, brief assessments of SWB, stress, and anxiety with the classification of students into four groups: positive mental health, symptomatic but content, vulnerable, and troubled. It is relatively easy to screen for anxiety and well-being using brief self-report starting around the fourth grade (Antaramian et al., 2010).

The second consideration in a tiered model is selecting an intervention. In this chapter, we focus on yoga as an intervention that can be provided at

varying levels of intensity. There are currently several manualized yoga interventions; however, we are not aware of any yoga programs that are organized into a three-tiered delivery model. For both scientific and practical purposes, the fidelity of implementation, the quality of delivery, the dose of the intervention, and student engagement have to be assessed as part of the yoga programs. Therefore, the implementation of a tiered yoga program will take some creative work to incorporate those elements, which are discussed later in this chapter. Although developing a tiered program may be challenging and requires unique training and resources, it is probably easier to implement a tiered yoga program than other intensive school-wide behavior support systems that often take multiple years to become fully functional (Berkeley et al., 2009).

Tier 1 yoga interventions would be provided to all students using the minimally sufficient amount of intervention to get a broad response, such that 80% of all students and teachers are in the positive mental health category. An example of such a program is the Transformative Life Skills (TLS) program (Niroga Institute, n.d.). TLS is a universal (Tier 1) intervention that is ecologically valid in that it (a) provides an intervention shown by research to improve student social-emotional functioning, (b) engages teachers in making TLS part of the classroom microsystem, and (c) provides administrative support, time, and resources to deliver TLS in an acceptable, feasible, and sustainable manner. Although TLS may not be considered pure yoga, it does include breath and movement as a foundation in the rotation of weekly activities, including meditation, gratitude journaling, and other mindful practices. Importantly, TLS provides a unique example of a service delivery system that fits both Tier 1 and the classroom microsystem considerations. These implementation concepts are discussed in greater detail in the “Special Considerations” section.

For the past 3 years, a public charter middle school in Houston has been providing TLS to its students, teachers, and the community. This population is at a disproportionately higher risk for academic failure, behavior problems, and a higher teacher turnover rate (Center for Public Policy Priorities, 2016). Although the school does not have RTI-type monitoring, in response to Hurricane Harvey, the school’s wellness coordinator conducted screenings for stress or trauma related to the flooding and displacement experienced by many students. These screenings resulted in an ad hoc Tier 2 intervention offering additional school-day opportunities for yoga to students who were significantly affected and who showed signs of acute stress. Students and their family members were also referred to the after-school yoga classes and given extra credit for participating in these classes.

Another example of a Tier 2 intervention is using yoga and mindfulness as an alternative form of corrective behavioral intervention. There are multiple reports in the media of schools using yoga and mindfulness to replace traditional detention activities (Kuta, 2018). Although evaluations of these alternative approaches to detention have not yet been published, there is evidence

from studies of students with attention problems that support using group yoga as a Tier 2 intervention to help students who were not doing well in the regular classroom improved their learning and behavior (Peck, Kehle, Bray, & Theodore, 2005).

When Tier 2 interventions are implemented with fidelity and students still do not reach the desired performance goals, more intensive Tier 3 interventions are needed. At this level, a multidisciplinary intervention team evaluates students' needs holistically, managing multiple concerns in a coordinated manner. In the case of a student diagnosed with an anxiety disorder, the Tier 3 yoga intervention is administered with an individual or a small group of students and would complement evidence-based interventions that specifically target reducing anxiety symptoms and increasing well-being. This could be delivered by a school psychologist, social worker, school nurse, or another professional, including specially trained teachers or teachers' aids, as part of an individualized education plan. As noted next, parents should also be involved in Tier 3 interventions.

SPECIAL POPULATIONS AND YOGA

Yoga to manage stress, anxiety, and trauma in special populations should be approached within the ecological systems perspective. At the individual level, as few as two yoga sessions have produced significant reductions in acute distress and anxiety for children with mental disorders (Re, McConnell, Reidinger, Schweit, & Hendron, 2014). This may result in transient improvements for some children; however, most problems with anxiety must be considered in a longitudinal and systemic context because of the bidirectional effects of the child's interactions with adults. In the family microsystem, the shared genetic background of parents and children, plus their patterns of interactions, are powerful determinants of anxiety (Bartels et al., 2007). Trying to intervene on behalf of the child without influencing the family microsystem can result in significant resistance to change. Thus, it is often crucial with special populations to engage both the parents and children in treatment—in this case offering yoga to both. Indeed, the parents' benefits from yoga interventions create an indirect effect on the behaviors of their children, even if their children were not provided with any direct interventions (Singh et al., 2014).

Research on family-based yoga interventions for anxiety is limited. We found one relevant study, a family treatment program for children with attention-deficit/hyperactivity disorder and their parents (Harrison, Manocha, & Rubia, 2004). In this study, families ($N = 41$) completed twice weekly sessions of yoga for 6 weeks, and participants were encouraged to practice at home. In addition to improvements in inattention and hyperactivity, anxiety levels in the children were reduced; the children in the treatment group reported feeling calmer, less panicky, and more relaxed (Harrison et al., 2004).

In another example with special populations, a pilot study with six mothers showed promising results regarding parent-mediated mindfulness training for their children with autism spectrum disorder (Hwang, Kearney, Klieve, Lang, & Roberts, 2015). The mothers delivered a supervised 3-week training program that included meditation practices along with yogic breathing and movement exercises for their children following an 8-week mindfulness training program. In addition, the mother–child dyads were asked to practice mindfulness for 12 months, which resulted in the reduction of parenting stress and parent-reported anxiety of the children.

An exemplary school-based program that has worked with a special population is the TLS provided in an alternative school for students with behavior problems (Frank, Bose, & Schrobenhauser-Clonan, 2014). In this study, certified yoga teachers trained in TLS led yoga-based practices for 30 minutes a day, 3 to 4 days a week for an entire semester. Pre- to postintervention data ($N = 49$) demonstrated significant reductions in anxiety, depression, and global psychological distress. The authors did not report teacher outcomes or levels of teacher participation. However, we should note that the current service delivery model of TLS trains teachers to use TLS for themselves to improve their well-being (Niroga Institute, n.d.).

SPECIAL CONSIDERATIONS FOR PROVIDING YOGA IN SCHOOLS

Although yoga is gaining popularity in schools, it is a novel activity for most educational settings, and its long-term impact depends on the acceptability, feasibility, and sustainability of the practices. With respect to acceptability, it is critically important to engage stakeholders such as families, administrators, and the leaders in the community, who may have concerns about a novel intervention that may have religious connotations. Meditation and yoga programs have met opposition from parents who worry that yoga is promoting religious practices or teaching beliefs that are contrary to their religion. Court rulings have deemed yoga to be an appropriate practice given that the practice is secular in content and delivery. In an important case, San Diego Superior Court ruled in *Sedlock v. Baird* (2013) that the yoga program used in the Encinitas Unified School District did not promote religion in public schools (California Three Rs Advisory Committee, 2013). Although the court ruled in favor of the school district, this did create considerable strife and ongoing rancor. Through careful community engagement and discussion, concerns such as those in Encinitas can be avoided. For example, yoga was recently introduced in public schools in the Houston area with widespread acceptance and participation (Hasan, 2015).

Providing opportunities for family members to practice yoga may bolster acceptability and feasibility and improve school–home connections. In addition to micro-systemic gains, another socioecological return is the possible improvements in the family–school mesosystem: Teaching yoga to parents

may enhance the relationship between the family and the school. Even if parents do not practice yoga, teacher conferences and school-to-home notes can be structured to inform parents about yoga and help parents support their child's practice at home. In a public charter school in Houston, parents were introduced to yoga during 45-minute-long family sessions on Saturdays attended by more than approximately two thirds of the families in the school, and as mentioned previously, yoga was offered after school for families.

Another major consideration for implementing school-based yoga is feasibility. Teachers and other school personnel are extremely busy, and it takes considerable resources and commitment to add another activity to the school day (Smith, Connington, McQuillin, & Bierman, 2014). The classroom must assimilate yoga with the support of school policies and resources such as creating time in the schedule for yoga, getting training for school staff or support of yoga teachers to lead the classes, and securing appropriate equipment (e.g., mats) and specialized space (e.g., a room with lots of floor space). Schools can adopt programs such as TLS that offer brief lessons directed by schoolteachers that are designed to be conducted in classrooms with desks. Implementation timelines should allow for gradual introduction, with implementation support offered until the yoga activities are integrated into the school routine.

To sustain yoga programs, it takes more than just resources, training, and personnel. Strong advocates are needed to assure that yoga remains a priority and that appropriate time and resources are acquired to maintain a viable yoga program. In other words, school culture must embrace yoga. However, sustainability also depends on producing and measuring results. Rigorous scientific evaluation in the context of continuous quality improvement is essential for any educational program but particularly critical for novel programs like yoga.

CONCLUSION

This chapter on school-based yoga for stress and anxiety goes far beyond a narrow focus on the elimination of negative states. Consistent with the DFM and positive psychology, it is necessary to make the promotion of well-being a central target of education. School-based yoga has the potential to improve the culture of schools by evoking systemic changes in how students, teachers, and parents relate to themselves and others. Positive changes in mind-body relationships caused by yoga not only mitigate the adverse effects of stress and anxiety but also improve physical and mental well-being. Happier students who can manage stress and anxiety are expected to have better attendance, behavior, and test scores. This should also result in happier teachers who are more effective and likely to stay in the profession. Furthermore, this should result in happier, less-stressed parents who have better engagement with the school.

Research on school-based yoga is in its early stages. There is good theoretical and empirical support for the mind–body benefits of yoga for managing stress, reducing anxiety, and improving well-being. Some of the theoretical considerations proposed in this chapter, such as the social–ecological implications and tiered systems of delivery, are speculative. We propose that greater attention to social–ecological considerations and implementing the three-tier system will strengthen the effects of school-based yoga. For example, future studies should examine how yoga impacts relationships between students, parents, and teachers in a potentially synergistic manner that is consistent with the social–ecological model, particularly the classroom microsystem and parent–teacher mesosystem. Targeting improvement in positive affect is strongly supported by modern positive psychology theory, particularly the broaden and build theory. Studying the efficacy of a three-tiered system that tracks positive affect as an important outcome should be feasible and could lead to breakthroughs in well-being with benefits to managing stress and anxiety and for improving overall school performance.

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14

Expressive Arts in Schools

Visual and Performing Arts and Sandtray Interventions to Promote Self-Discovery

Suzanne Degges-White

The expressive arts represent multiple modes and channels of communication that provide individuals the opportunity to share and connect with others in ways that verbal communication may not. Visual art, music, dance and movement, drama, expressive writing, and sandtray are the primary expressive arts modalities used by professional helpers. The clinical application of the creative arts creates an environment in which multilayered self-discovery experiences can take place. Cobbett (2016) noted that the use of nonverbal expressive therapies may be especially effective in the neurological integration that facilitates healing from trauma and emotionally distressing events. Knill, Barba, and Fuchs (2004) developed an expansive theory of creative arts in therapy that addressed the value of intermodal expressive therapy. This theory supports the integration of multiple forms of the expressive arts into clinical practice to allow each clinician to find the best fitting selection of interventions and modalities for their unique client populations. This is considered the heart of intermodal expressive therapy—using the mediums that personally resonate for practitioners and clients.

KEY CREATIVE ARTS MODALITIES

A brief overview of each of the most frequently used modalities of creative arts expression is presented next. However, please note that expressive writing and music therapy are covered in separate chapters (see Chapters 16 and 15,

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this volume) and are described here only briefly. Although each modality may seem quite distinct from the others, the universal overarching goal of each is to foster a healing and therapeutic experience. To learn more about each of the modalities, a useful place to begin is to explore the websites of related professional organizations as noted in the sections that follow.

Visual Arts

The field of visual arts includes multiple forms of art-making. These include activities such as painting, drawing, sculpting, collage making, and photography. Art therapy may also incorporate the use of existing art pieces to stimulate self-exploration by clients. This form of therapy allows clients to create tangible symbols or expressions of their experiences, emotions, and thoughts and is often the modality that is most commonly associated with expressive arts therapy.

As an early pioneer in the use of art in therapy, Margaret Naumburg brought art to the therapeutic milieu in the 1940s (Naumburg, 1950). The effectiveness of her therapeutic work was well received by the medical and psychology professions. Thus, art therapy became a customary component of mental health care in treatment centers. The earliest art therapy practitioners were psychiatrists or art teachers who happened to enter the mental health field. Today, specialized training programs exist to prepare therapists for certification as art therapists. Other helping professionals may also infuse arts-based experiences into their practices. The professional association for art therapy is the American Art Therapy Association (<http://www.arttherapy.org>).

Research regarding the healing effects of engagement with the visual arts, as well as assessment through the visual arts, is encouraging. Interventions involving the visual arts, including fiber arts (e.g., crochet) and drawing, have been shown to decrease depression and anxiety levels, improve well-being, and enhance medical outcomes, including hemodialysis parameters (Stuckey & Nobel, 2010). The effectiveness of visual art therapy (creating sock puppets) related to anxiety and stress in youth also has been evidenced by the positive changes in salivary cortisol levels pre- and post-art therapy intervention (Siegel, Iida, Rachlin, & Yount, 2016). The creation of mandala drawings has been shown to lower the pain level experienced by children during invasive procedures such as needle sticks (Stinley, Norris, & Hinds, 2015). According to the American Art Therapy Association (2019), art therapy is effective in enhancing several areas of psychological, emotional, and physical functioning. These include cognitive and sensorimotor development, self-awareness, conflict resolution, and social skills, among others.

Engagement in creating art positively influences client well-being on multiple levels. Encouraging children to use drawing, painting, sculpting, or other visual art forms in the schools provides an outlet for them to express feelings they may not easily verbalize. A directed activity that could be introduced in the classroom or school counselor's office is the creation of bridge

pictures (Councill, 2012) for children struggling with socioemotional issues or physical challenges. In this activity, the clinician invites a child to draw a bridge on a piece of paper and to draw an image of the current challenging situation on one side and a place where the issues have been resolved on the opposite side. The children are then asked to draw themselves on the bridge where they think they are in resolving the issue. The introduction of metaphor helps children to externalize their challenges, which allows them an easier path to coping with psychological, emotional, or social difficulties.

Music Therapy

Music therapy became an accepted part of psychotherapeutic care during the first half of the 20th century (Wigram, Pedersen, & Bonde, 2002). It began in veterans hospitals where military personnel who had been injured in combat were entertained by volunteer musicians. The medical staff noted the power of music to provide curative effects and symptom relief. This awareness led to musicians being hired to provide therapy in the hospitals. Today, specialized training programs exist to prepare therapists for certification as music therapists. However, other helping professionals are encouraged to incorporate aspects of music therapy into their clinical work. The professional association for music therapy is the American Music Therapy Association (<http://www.musictherapy.org>).

Dance and Movement Therapy

Although dance and movement are often perceived as innate behaviors, the acknowledgment of dance and movement interventions as markers of a unique mode of therapy occurred only in the early 1940s (Malchiodi, 2005). As the modern dance movement grew, a new more spontaneous, expressive form of movement also spread, and this was hailed as a freeing, health-promoting experience by dancers. Marian Chace, a choreographer of modern dance, was invited to introduce psychiatric patients to this form of self-expression and did so with positive results, thus energizing this new form of expressive arts therapy. The professional association for dance and movement therapy is the American Dance Therapy Association (<http://www.adta.org>).

Dance and movement therapists attribute the beneficial effects of therapy to the integration of mind and body that occurs in the movement of dance (Palo-Bengtsson, Winblad, & Ekman, 1998). Self-expression via dance and movement is believed to facilitate communication and processing of experiences and emotions that are too deep or complex for words (Kourkouta, Rarra, Mavroeidi, & Prodromidis, 2014). In addition to the emotional benefits, dance therapy has been found to be effective in reducing patients' subjective levels of pain and improving well-being for youth who were recuperating from orthopedic or cardiac surgery as well as post-brain injury (Dowler, 2016).

Drama Therapy

Although drama and enactment have been in existence in virtually every culture for millennia, it was in the early 1900s that Jacob Moreno led the movement to use the healing properties of this form of self-expression in therapeutic settings in the form of group therapy. Drama therapy is a powerful and highly experiential therapeutic device. Clinicians direct the action between clients and provide a safe space in which the exploration of feelings, behaviors, and thoughts may actively take place.

Dramatic interventions can encompass a variety of activities that are selected based on the individual clients with whom the practitioner is working. Specific interventions may include storytelling, dramatic improvisation, puppetry, enactment, and role-play of significant events (Desmond, Kindsvatter, Stahl, & Smith, 2015). Drama therapy is well suited for the school environment; most primary classrooms are stocked with puppets and/or costume and dress-up boxes. Drama therapy can be incorporated into large or small group settings or one-on-one sessions with clients. Clients may be asked to play out the parts of themselves that they typically inhibit or censor or take on the perspective and character of a significant other in their lives. Inviting a client to use a puppet to act out a particular role, such as confronting a bully or being more assertive in class, provides clients the opportunity to safely try out and rehearse new behaviors. Larger groups can be orchestrated to facilitate interaction between students who typically do not interact together. There are multiple ways in which emotional expression and new behaviors can be safely facilitated through this medium. The professional association for drama therapy is the National Association for Drama Therapy (<http://www.nadt.org>).

Expressive Writing and Poetry Therapy

Although writing skills vary greatly among school children, expressive writing can be used across age groups and abilities when the counselor or other group member is willing to scribe for clients who are unable to write. Expressive writing typically involves the use of clinician-provided prompts. The purpose of expressive writing is to assist clients in healing and coping with psychological and physiological pain. By creating a poem or story about a painful event, clients can develop a new perspective which can facilitate the creation of a positive outcome for their story. By using writing versus oral communication, clients may find it easier to be more open and expressive about their experiences than if they were asked to share them aloud. The professional association for poetry therapy is the National Association for Poetry Therapy (<http://www.poetrytherapy.org>).

Sandtray

An additional mode of creative arts therapy is sandtray, which is akin to a combination of visual art therapy, narrative expression, and drama therapy.

The word *sandtray* may conjure up images of desktop Japanese Zen sand gardens, but the form of sandtray to be discussed involves the placement of small figures into a sand-filled container by the client. Desktop Japanese Zen gardens typically include a shallow layer of sand and a small rake-shaped tool with which individuals can trace patterns into the sand just as people do with larger sand gardens commonly found in Japanese monasteries and gardens (Berthier, 2000; Enns & Kasai, 2018). The creation and viewing of these patterns in the sand, which often resemble ripples of water, can be a form of meditation. Although desktop Zen gardens provide a form of meditative practice, and meditation is indeed health promoting for youth in itself (McClafferty, 2018), sandtray involves a different form of client engagement with the sand.

Using a wide collection of miniature figures and objects, sand work is a therapeutic intervention that allows individuals to articulate their current concerns in a symbolic or representative nonverbal manner by using figures to create a scene in a tray of sand. *Sandplay* is the term used for the Jungian theory-based sand work intervention, whereas *sandtray* describes a similar intervention used by clinicians from a wide variety of theoretical orientations. The sandtray can be a permanent fixture that is designed specifically for therapeutic settings or a large, but low-sided, plastic storage container if cost and space are concerns. Figures can be housed on a low bookshelf in a school-based clinician's office or stored and transported in plastic bins or fishing tackle boxes if the therapist moves from school to school or room to room.

Figures should encompass as many ethnicities, races, gender, and religious belief systems as possible for clients to successfully choose the most relevant figures to express their thoughts and feelings. Clinicians must be thoughtful in acquiring figures that reflect their specific client populations. Depending on the setting, collections can include objects representative of that particular milieu (i.e., adhesive strips and syringes if you work at a hospital or medical setting; miniature desks and blackboards in a school setting). Objects and figurines in a therapist's sandtray collection should include the following categories: animals (e.g., wild, forest, domesticated, prehistoric, fantasy, farm); birds; insects; sea creatures; half-human-half-animal figures (e.g., mermaids, centaurs); reptiles and amphibians; monsters; eggs and food; fantasy figures (e.g., witches, wizards, kings, queens); plants; rocks, shells, and fossils; mountains, caves, and volcanoes; buildings; barriers; vehicles; people; fighting figures; spiritual figures; and any additional figures an individual clinician would like to add (Amatruda & Simpson, 1997). These categories are selected intentionally because of the symbolic meanings and functions that the figures traditionally hold. Animals represent the environment; monsters are capable of scaring and protecting; plants, rocks, and caves offer places of protection or transformation; food-related items nourish; vehicles provide means of transportation and movement; fences and barriers can protect or isolate; people can represent the ego or other specific individuals in the client's life; and spiritual figures provide entry into the transpersonal (Amatruda & Simpson, 1997).

H. G. Wells's *Floor Games* (1911/1976) explored the activities he and his children involved themselves in while playing together on the floor with small toys. This was the inspiration for the earliest sandplay practitioners. Early professionals who used such a method include Dora Kalff, Margaret Lowenfield, Charlotte Buhler, and Erik Erikson (Mitchell & Friedman, 1994). Through a friendship with C. G. Jung's daughter, Kalff began work with Jung, and this influential collaboration defined Kalff as the first Jungian sandplay therapist (Mitchell & Friedman, 1994). Kalff believed that through sandplay the unconscious could be made conscious.

Jungian sandplay therapists view the therapeutic process of sandplay work as an enactment of the "hero's journey" in which an individual must go down into the deepest level of the unconscious, create a "constellation of self" tray, and then travel back up to the everyday world of reality and life. Kalff (2003) described this process as a three-part journey in which clients would create trays that followed a specific pattern: (a) animal-vegetative, in which the figures chosen reflected a primal world; (b) conflict or battle, in which a confrontation occurs between the figures; and (c) conflict resolution, the final stage in which the client creates a constellation of the self and experiences a "birth" of his or her ego, similar to individuation, before returning to the "real world" or the "collective." The constellation of self tray is typically marked by the presence of a centering, or mandala-like, appearance and something of a spiritual theme. It is in this process that the healing power of sandplay resides.

Clients are shown the figurines and the sandtray and invited to "create a world in the sand." Depending on theoretical orientation, some clinicians may be more directive than others. Some may invite clients to create specific scenes, such as how clients see their place in the classroom or family. Clients are typically allowed to build their trays without interruption or attempts at interpretation by the clinician. After a tray is considered "complete" by the client, clinicians may invite the client to discuss their work. For instance, a clinician might ask the client open-ended questions such as, "Where are you located in the action here in the tray?" "What do you believe is going to happen next?" or "If you were to name this tray, what name would you choose?" Some clinicians may simply witness the creation of the tray and make notes or sketches of the tray as the client builds the scene. As in nondirective play therapy practice, some may reflect what the client is doing as the client builds the scene (i.e., "You're placing a tiger right beside the three rabbits in the tray"). The method used depends on the clinician's orientation and the presenting concern of the client. Both adults and children can benefit from this adjunctive therapy which accesses the active imagination to express that which is difficult to express in words. Sandplay has been compared with the dream process in that the images that appear are not the product of conscious thought (Kalff, 1991). Many clinicians refer to resources that describe the symbolic meaning of the figures or the placement of the figures in the tray for insight.

The first tray created by a client often holds not only part of the problem but also part of the solution. It is important to reflect on all the material the

client presents during each sandtray, both verbal communications and non-verbal, such as which objects go in first, which are removed before the tray is “set,” and which objects are picked up, considered, but not chosen. Much can be gleaned from the clients’ physical movements as well as their activity level during the creation of their tray. After a client leaves the session, clinicians frequently photograph the tray to add to any sketches made during the session, so that a record of the client’s work exists and client progress can be followed.

Although there are numerous books available on symbolism that clinicians may use to reflect on what shows up in a client’s sandtray, it is the process itself that leads the client to transformation. The clinician’s role is to support and validate the process, not offer in-session interpretations to the client. If a particular figure or placement resonates with work the client is doing, the clinician may ask the client whether the figure might be a metaphor of their progress. The clinician does not force interpretations on the client, however, because the client is always viewed as the expert.

Sandtray has been found to be effective in addressing children’s externalizing and internalizing behaviors, even in small group sandtray work (Flahive & Ray, 2007). Group sandtray has also been effective in helping young adolescents raise their self-esteem levels (Shen & Armstrong, 2008). Nasab and Alipour (2015) found that sandtray therapy decreased young children’s separation anxiety. In addition, sandplay was found to be effective as a crisis intervention with children who had experienced a disaster (Yeh, Aslan, Mendoza, & Tsukamoto, 2015). Sandplay has been used with young clients diagnosed with cerebral palsy (Yang et al., 2011); parents reported improvements in their children’s emotional and mental functioning. Kyoung (2015) noted that a client’s physiological reactions during the creation of sandtrays include tears as well as activation of the autonomic nervous system, giving evidence of the multilayered effect of this therapeutic modality. As clients engage in the process of creating their sandtray worlds, they often focus on the task much as they would during meditation with similar salutogenic physiological results.

USING THE CREATIVE ARTS THERAPY MODALITIES ACROSS DIVERSE POPULATIONS

Each of the expressive arts modalities can be modified to meet the needs of diverse clients. Creative expression is innate, and young clients are eager to explore the various mediums of expression. The withholding of evaluative responses to client work and the willingness to be flexible and spontaneously engaged in modifications, as needed, are key attributes needed by the clinician for effective application of an expressive arts intervention. Visual arts can be modified for individuals who may face physical, emotional, or developmental challenges and are particularly useful with those who have limited verbal ability or when language barriers exist. For instance, existing pieces of

art (e.g., photographs, prints, sculptures) can be incorporated into counseling for those who lack the ability to control or manipulate art materials such as paintbrushes or drawing instruments. There are no “right or wrong” expectations about what a client produces during an art therapy session, so the medium provides clients a great deal of freedom to express themselves in whatever way they are able.

Movement is a natural aspect of our physical presence in the world, and although dance is one form of movement therapy, there are many other forms that movement therapy may take. Even for students who have a variety of physical challenges, those with limited mobility may still benefit from movement therapy through stretching and moving their bodies as much as they may be able (Horowitz, 2000). One important benefit of movement interventions is that they encourage clients to reconnect with their physical presence while discouraging clients from rumination or negative thinking. In its most basic form, it can invite the purest form of client movement, thus inviting participation regardless of client ability.

Drama therapy can be used by individuals of virtually any diverse identity who possess the necessary cognitive capacities to respond to the clinician’s prompts regarding role-play, imagined dialog, and playacting. One caveat is that the client must be able to comprehend the difference between reality and fantasy. Puppets can be used with younger clients as a way for them to engage with emotions that may be too confusing or frightening to explore in a more personal way.

Sandtray is highly appropriate for diverse individuals because it does not rely on client explanations of their work or clinician interpretation of the client’s work. Well-curated sandtray miniature collections should include figures from as many diverse cultures as possible. Through the selection of sturdy figures, clinicians can feel comfortable allowing younger or less dexterous clients to use the figures. In addition, the size of the sandtray used can be varied according to multiple variables, including limited space or the need to have a sandtray accessible on a table, desk, or the tray of a wheelchair. Sandtray has been noted for its utility in cross-cultural settings or across language barriers (Ramsey, 2014) and its effectiveness among children with intellectual disabilities (Moghadam, Malekpour, & Abedi, 2014).

INTEGRATING CREATIVE ARTS THERAPIES INTO THE SCHOOL SETTING

Although not all school mental health providers or school administrators embrace the healing value of the creative arts, there are school systems, such as Jersey City public schools, that have successfully integrated this form of programming into their schools (Nelson, 2010). Using a team of art therapists and music therapists, the school system showed positive effects with children with and without special needs. According to Nelson (2010), the program

comprised eight weekly sessions in which students participated in expressive arts therapy once a week for 1 hour during the school day. These sessions were led by a music therapist, an art therapist, and a licensed clinical social worker. Activities included student musical compositions that provided them the opportunity to reflect on and express difficult emotions including grief. Other activities included drawing, singing, and making music with instruments. Another program used with groups of fourth graders included drumming circles and free expression; the teachers found that over the course of the session, students showed increased interpersonal skills and prosocial behaviors, although progress speed varied, just as academic achievements do. Nelson (2010) also reported that the successfully attained goals included increased student self-confidence, emotional coping skills, and ability to manage transitions. For art therapists to provide maximum benefits to their clients, Regev, Green-Orlovich, and Snir (2015) indicated that attention must be given to the working conditions for art therapists, the school population's understanding of art therapy, and compensation for the time spent completing documentation and other nontreatment tasks required of the position. Children often learn best through different sensory channels (e.g., visual, auditory, kinesthetic); therefore, there is not a single best mode of creative expression that would serve the needs of all students. However, the versatility of the arts allows for the integration of multiple expressive modalities with groups or individuals.

APPLICATION OF SANDTRAY ACROSS MULTIPLE TIERS

Sandtray work is flexible enough to be used one-on-one, as well as with groups and in classrooms with some modifications such as the availability of multiple sandtrays or sequential groups creating sandtrays one at a time. Following is a case example using sandtray as the creative medium. This intervention could be implemented across multiple service delivery tiers including individuals, small groups, and classrooms with clients who present with a wide variety of emotional, mental, or physiological disorders. Further, technology has allowed the sandtray experience to be available via interactive computers so that it is even more accessible for individuals whose physical ability is limited (Hancock, ten Cate, Carpendale, & Isenberg, 2010).

CASE EXAMPLE: LEANN'S HEALING JOURNEY THROUGH THE SAND

LeAnn was an 8-year-old third grader who had become uncharacteristically unruly in the classroom. The school counselor, Ms. Norris, reached out to LeAnn's mother, Mrs. Christoph, to discuss the behavioral changes that included tantrums in the classroom and aggressive behavior with her peers. LeAnn's mother revealed that she and LeAnn's father had divorced 5 years

earlier but that LeAnn's father had recently remarried and was requesting increased visitation. Mrs. Christoph shared that LeAnn had begun having temper tantrums at home and engaged in crying spells when dropped off at school or her father's home for visitation. LeAnn's mother agreed to meet with the school counselor the following day.

At the meeting, Mrs. Christoph related that she felt helpless in dealing with her daughter's behavior. She explained that she and LeAnn had become "very close" after the divorce and admitted having encouraged a "you and me against the world" attitude in her daughter. In fact, LeAnn's teacher had reported that LeAnn had once told her, "When Dad left, I had to take care of Mom—I mean my Mom had to take care of me—by herself." LeAnn's father's exit was traumatic for both daughter and mother.

For the counselor, the first goal of therapy was to validate the child's fears and feelings as well as help her work through the separation anxiety and disruptive behaviors that were disrupting school and family routines. Ms. Norris felt that sandtray would be an ideal medium for the 8-year-old to express her complicated emotions. Sandtray facilitates emotional growth at a nonthreatening, client-controlled pace that leaves the client in charge of its tempo. During the next 2 months, LeAnn met with the counselor five times and created a total of four sandtrays in the school counselor's office. Each counseling session lasted 30 to 35 minutes and incorporated expressive arts therapy and nondirective play therapy.

Session 1

As LeAnn entered the counselor's office for her first session, she quickly noticed and headed toward the sandtray on the floor and the low bookcase filled with miniatures. Ms. Norris invited LeAnn to "create a world in the sand." LeAnn's first experience with the sandtray began with her running her hands through the sand. She then chose a large seashell and began digging in the sand telling the counselor of a time she had participated in a similar activity at a relative's house. LeAnn stated she used a shell to dig in the backyard and found treasure she dug up.

As LeAnn's play continued, she narrated aloud her activities as she added figures to the tray. Ms. Norris occasionally validated LeAnn's activity by reflecting back LeAnn's statements, but she did not ask direct questions or try to control LeAnn's activity. LeAnn used the shell to dig a deep hole in the center of the tray and described it as a "watering hole." She then placed two small tigers in the sand at the top left corner of the tray. She then placed a larger tiger beside each smaller one. LeAnn explained to the counselor that the two baby tigers were best friends and that one of the baby tigers was trying to get next to the other. She then shared that the tiger moms did not know the babies were friends and that the moms were fighting to protect their cubs.

Both the seashell and the watering hole can be symbolic of the womb according to many books on symbolism (i.e., Pearson & Wilson, 2003;

Ronnberg, 2010). The tiger “mother and child” pairs are tightly bonded, and the mothers are ferociously protective of the cubs. However, the mothers are viciously fighting unaware of the deep friendship of their children. No father figure was included in LeAnn’s tray, although the client talked of succeeding generations of mothers and babies behaving in the same way as the original figures were doing.

Session 2

At the next session, 1 week later, LeAnn moved to the sand as soon as she arrived. Ms. Norris stated, “You’re ready to create another scene in the sand today.” LeAnn began by digging a “watering hole” in the center of the tray and placing three mermaids on one side of the water. Next, she placed the figure of a human baby by each mermaid saying that the mommies were holding their babies. She next placed a sandcastle across the water from the mermaids. She added what she described as “evil king” and a dog. She explained that the king’s dog, his “faithful companion,” would bark at night and everyone would try to hide. In front of the king, LeAnn placed the figure of a whale as a “guard.”

LeAnn moved her attention to the upper left corner of the tray and placed a small forest (small plastic shrubs) there, which she stated was surrounded by trees, and inside the forest, she placed a tree with figures of monkeys, a large gorilla figure, and a small gorilla figure. Ms. Norris reflected, “You’ve placed the monkeys and gorillas up in a corner in the forest.”

Each mother again has a baby she is trying to protect; LeAnn had described to the counselor that the mermaids would “bury their babies in the sand” to protect them from the king and his dog. The only male figures in the tray were the “evil king,” who was seen as a threat to the others, and his dog. The maternal pairing is still central to LeAnn’s perspective, but her world widened through the addition of the king and his male dog. The whale is often used as a symbol or precursor of integration. Thus, the placement of the whale between the king and the mothers was perceived as significant by the counselor.

In the same corner that LeAnn had located the crude battle between tigers in her first tray, she now placed the wild world of the jungle. In this second tray, however, the activity in this wild, primal world is not antagonistic but more contained and calmer. Ms. Norris reflected that LeAnn appeared to be learning how to create boundaries for her more negative, primal impulses, which can be a good first step in learning to control and resolve them.

Session 3

When LeAnn arrived for her third session, she told Ms. Norris that she wanted to play with the puppets, which is another form of expressive arts therapy. As in the theme of the children’s book *Are You My Mother?* by P. D. Eastman

(1962), LeAnn acted out a tale of a kitten who was looking for her family and friends. The kitten had been told to meet them at a certain place, but they were nowhere to be found. LeAnn's puppet drama involved both friendly and aggressive interactions between the kitten and other animals, but the story ended with the kitten returning home safely to its family.

Shortly after this session, LeAnn's father phoned the school counselor. The counselor commended him for supporting LeAnn's participation in therapy while she was still young enough that she could make lasting changes that might prevent future difficulties. The counselor encouraged him to give LeAnn opportunities to make some small decisions in his household to give LeAnn a better sense of control of her world. She also normalized the difficulties LeAnn had been experiencing and provided information regarding stepfamily adjustments and jealousy that might arise in daughters regarding a father's new wife.

Session 4

A week later, LeAnn came to her fourth session and announced she was going to tell a story in the sand that day. Working quietly at first, LeAnn placed a circle of wire fencing in the center of the tray. She then placed "food for horses" in the circle, added two horse figures and a small unicorn figure. As LeAnn worked, Ms. Norris would occasionally verbally reflect LeAnn's actions. LeAnn placed a wooden moon and star in the sand by the unicorn. She next created a "watering hole" for the horses. LeAnn placed four plastic columns, the kind used to separate cake layers in tiered cakes, at each corner of the tray and placed feathers and flowers in the center of each column. She placed small flat mirrors at both short ends of the tray. She placed butterflies in the center of two long sides of the tray. She then added a "magic wand" with a star at the end in a corner and placed a dove at the opposite side corner. She added some stones she had brought with her to school for "show and tell" and arranged them around the dove. The counselor noted that the dove and the egg now replaced the wild, coarse jungle, where the ferocious fighting began in the initial tray.

LeAnn jumped into her narrative story of the tray explaining that a baby horse (the unicorn) had somehow gotten out of the pen. LeAnn then grabbed an adult female doll and said that this was the horses' owner. LeAnn said that the owner saw the baby horse looking at the mirror and told the horse what a mirror was and described that its purpose was to help the horse to see itself. Then the baby horse wandered off to some "sinking sand." LeAnn's story continued with the mother horse running to the baby horse's rescue. LeAnn then said, "The father horse . . ." and she paused, looked up at the counselor, and began again, "The father horse ran to help the baby. Even the owner came, and she pulled with all her strength and might to help get the baby out of the sinking sand." The unicorn figure ("baby horse") was successfully pulled out of the sand, went flying through the air, landed outside the farm, and then

everyone helped to get the baby “back in the barnyard, where they all lived happily ever after.” After this tray was complete, LeAnn was energized and spontaneously began reciting made-up impromptu poetry about nature and “recipes.” She asked Ms. Norris for paper and pencil to use to write them down so she would remember them. When the counselor alerted LeAnn that the session was almost over, LeAnn told the counselor that she was ready to return to class.

In this tray, LeAnn appeared to have created a constellation of self tray. This was suggested by the circle of fencing and the symmetrical placement of columns, feathers and flowers, butterflies, and mirrors. The counselor believed this try to be an excellent example of the *self tray*, which marks a client’s midpoint in their journey of healing. Another significant addition appeared to be the introduction of a male figure who was described as both paternal and caring. This was a major development for LeAnn, as was the metaphor she seemed to create for the therapy process itself in the way that she described the mirror in the tray. The baby horse got stuck in a place where everyone had to work together to form an alliance to rescue her. In point of fact, the client had been made aware by her mother that Ms. Norris had begun a conversation with LeAnn’s father to strengthen the parental alliance.

It is important, also, to note that the move from actively participating in sandtray storytelling to poetry recitation is a typical reaction after creating a constellation tray. Clients might begin to sing or hum and seem unable to participate in any “therapeutic” activities for the remainder of the session. By creating her “recipes,” LeAnn was able to focus on the creation of something new and marked this phase by laboriously handwriting the ingredients of her creations.

Session 5

Two weeks later, LeAnn arrived in Ms. Norris’s office and stated that she had a story she wanted to tell the counselor using the sandtray. LeAnn began by stating that she was creating a forest and added lots of trees to the back half of the tray. She then dug a water hole in the lower center of the tray. She added animals that included a turtle, a “mother” and “father” rabbits, “baby” birds, and “mother, father, and grandma birds.” She then had the animal families all make themselves homes in the wrong places (rabbits in the tree, birds underground, land animals in the water). LeAnn then added a small teepee and two Native American figures and a campfire to the scene. LeAnn began her story saying that the Native American wife went walking through the forest and thought she heard snakes, but the Native American husband assured her that it was the sound of her feet moving through the sand. The wife came across the animals in the sand and told them their homes were in the wrong places. The wife tracked them all down and then threw all the animals into the water. The rabbits then went underground, the birds went to the nest in the tree, and the turtle came onto the land. LeAnn finished her

story by placing the Native American husband and the Native American wife up on the edge of the tray and said, "This may not be true, but I believe it is. The Native American wife and husband are still there looking after everything."

Implications

This tray was the first tray after the client had "met herself" in the mirror in the previous sandtray, and her storytelling appeared strikingly different from earlier sessions. There were many more characters involved in the action, and there was the acknowledgment of the existing bond between the marital couple, as well as paternal figures within each animal family. The client's energy was devoted to the natural world, and the addition of human figures showed increased emotional development. There was a new sense of belonging for the client as LeAnn ended the story with all the creatures ending up back in their rightful homes. Of particular interest was the "baptism" of the animals by the Native American wife as she tossed them all into the water before they returned to their respective homes.

Case Summary

Sandtray is an integration of multiple modes of creative arts expression and proved to be highly appropriate and productive for LeAnn. Sandtray allows clients to explore complex feelings and events at a safe distance through expressive modalities. LeAnn was able to visually represent complex feelings and the turmoil she felt but could not verbally express. At the start of therapy, she exhibited behavior similar to that of a much younger child who experienced severe separation anxiety on leaving her mother. This can be typical of children who undergo substantial trauma at a young age and appear to be "stuck" at that age emotionally. This may have been unintentionally encouraged by LeAnn's mother who was extremely protective of LeAnn and encouraged a "me and you against the world" perspective between the two. At the beginning of therapy, the client seemed focused on the mother-child attachment bond and seemed unable to accept the presence of her father in her life or his recent marriage. LeAnn needed space to catch back up with her chronological age mates.

Through the integration of sandtray into the school counselor's practice, the student was able to work through mother-child separation anxiety, begin to accept her father as a caregiving and loving parent, and acknowledge the importance of his marriage to her stepmother. It would be difficult for a child, even one as bright and articulate as LeAnn, to verbalize these developments. The sandtray allowed her to work through the pain of growing up and away from the infant-like dependence on her mother toward a desire to move forward into the world by finding a new sense of belonging with the significant people in her life.

LeAnn also made significant behavioral progress in the school and at home. Her teacher reported that LeAnn was no longer acting out in the classroom

and was coming into the classroom eager to start the day each morning. Her mother noted that LeAnn's temper tantrums had decreased dramatically and that LeAnn was no longer exhibiting the extreme separation anxiety that she had previously shown.

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15

Music Therapy in Schools

Stimulating the Mind and Body to Create Positive Change

Anita L. Swanson

According to the American Music Therapy Association (AMTA; 2018), “Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program” (para. 1). Although there are many possibilities for using music therapeutically, it is the therapist’s personalized selection of and the student’s engagement in the music experience with the therapist that allows musical and nonmusical change to occur. Some examples of music therapy interventions are singing, playing instruments, writing songs, improvising music, moving to music, using music to cue motor tasks, using music for relaxation, using music contingently to increase behavioral performance, and analyzing and discussing lyrics. The therapist and student(s) may actively participate in music making together, or the therapist may make music for the student to engage in receptively.

Music therapists typically use client-preferred music. Or if they are creating a song for use in a session, they may draw from a student’s favorite music genres. Music therapists may also select or compose music based on music elements such as rhythm, melody, harmony, or form. For instance, repetition in musical form can assist students in learning and memory. The structure of a melody can create a framework for information to be learned. In this way, music functions as a mnemonic device, evidenced in how many people learn the alphabet set to the tune of “Twinkle, Twinkle, Little Star.”

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Another use of a music element is that of harmony. Harmony may create tension that can be used for a variety of therapeutic purposes, such as verbalization. Thus, a therapist may play an accompanying instrument such as guitar and piano while singing, then leave out the last word of a song and wait for the student to fill it in. The tension in the music spurs the student to verbalize the completion word. After verbalization, the tension is resolved, and a feeling of satisfaction is held musically when the student was successful in meeting a verbalization goal. Musical tension used in this way may also facilitate a cognitive goal of naming items or reciting lists of information. It could also be paired with a task to cue completion of the task.

Rhythm may be used for multiple purposes as well. Humans respond innately to rhythm; therefore, it can be a powerful tool in learning or relearning certain skills. Rhythm can be used to cue speech (Thaut, 2013), which can also be used in literacy tasks. Music therapists also use rhythm to cue movement by playing a strong, steady beat. Before moving, the student listens to the beat and entrains to it; thus, movements are synchronized to the external rhythm. When applied to walking, this effect can facilitate improved gait parameters, such as increased velocity and stride length (Magee, Clark, Tamplin, & Bradt, 2017). Additional movements may be facilitated by rhythm and/or other music elements. The music therapist could cue movement by using other music elements such as dynamics (getting louder could cue more forceful movement) or pitch (moving from a lower to a higher pitch could cue upward movement, such as raising one's arm or transitioning from sitting to standing).

MUSIC THERAPY FOR MIND AND BODY

Music therapists use the elements of music, the way music affects humans, and musical associations to treat individuals in respect to the following goal areas: social, communication, cognitive, academic, physical, spiritual, emotional, behavioral, mental health, and daily living skills. Because music affects many parts of the brain (Koelsch, 2009; Lin et al., 2011; Panksepp & Bernatzky, 2002; Yinger & Gooding, 2014), music therapists can often use music to address multiple goals simultaneously. Because music has direct access to the limbic system (Koelsch, 2009), stimulates neurotransmitter release (Chanda & Levitin, 2013; Salimpoor, Zald, Zatorre, Dagher, & McIntosh, 2015; Yinger & Gooding, 2014), synchronizes body movement (Thaut, 2013), and bestows a feeling of being connected to something greater than oneself, music therapy can facilitate mind–body health.

Music therapists are educated in the way music affects the brain, body, mind, spirit, and relationships with oneself and others. Thus, they can use music to effect change while supporting the student in the process. One can quickly convey empathy and care through music (Panksepp & Bernatzky, 2002). Because music has an aesthetic influence (Merriam, 1964), students may experience moments of beauty and inspiration. One's whole self (body, mind, and spirit) can be stimulated.

APPLYING MUSIC AND MUSIC THERAPY IN SCHOOLS

Music creates a structured environment that helps people connect with each other (Gaston, 1968). It can draw people together and assist them in interacting with each other in an appropriate way (Gaston, 1968; Merriam, 1964). This feature positively impacts relationships and creates opportunities for individuals to interact with others, listen to others, and work toward a common goal (Merriam, 1964). Thus, music therapy may assist with social skill development (Gooding, 2011) because it promotes social interactions (Panksepp & Bernatzky, 2002). Music also evokes emotions and can be used to modulate mood (Panksepp & Bernatzky, 2002); thus, music therapy can facilitate emotional responsiveness. Music offers a nonreferential means of communication that may help students express their feelings, leading them to connect with other people.

Because music therapy facilitates social communication verbally and non-verbally, it can assist students who struggle with verbal communication. It provides a less-pressured means of social communication while encouraging conformity to social norms and expectations (Merriam, 1964). Recently, Sharda et al. (2018) found that music therapy can enhance social communication, brain connectivity, and family quality of life in children with autism spectrum disorder.

In school, students may more easily integrate into the class as they participate in group music therapy. Music therapists devise strategies to use the elements of music in a carefully planned manner for each person to be successful. The motivating feature of music combined with the organization and grounding provided by music can assist individuals in actively participating with their peers. Structuring the social experience through music can help people feel safe in the environment. First, rhythm can be applied to ground individuals and promote feelings of safety and security. Then, melody, harmony, timbre, and instrumentation are chosen to foster self-expression. Last, group structure and participation provide support as each person expresses him- or herself within the group music experience.

Music can be a source of gratification (Gaston, 1968), with the potential to elicit a sense of achievement. This, in turn, can help students increase their self-esteem and build social networks. Communication, expression, and sharing of common goals via music making bring group members together. Group music therapy sessions can increase a student's confidence and self-esteem as well as assist them in creating friendships within the group (Pavlicevic, O'Neil, Powell, Jones, & Sampathianaki, 2014).

Communication and social skills can have a direct effect on student behavior. Music therapy can reduce problem behavior, reduce aggressive behaviors, and increase self-esteem and social skills (Choi, Lee, & Lee, 2010; Chong & Kim, 2010; Twyford & Rickson, 2013). For example, Wetherick (2014) examined music therapy regarding some of the secondary effects of language impairment. He found that music therapy decreased screaming and aggressive play while increasing cooperative play and verbal interaction attempts.

Another way to ameliorate behaviors is through musical social stories. Creating social story songs is an effective way of helping students transition, complete tasks, and participate in experiences that may otherwise prove troublesome for them (Brownell, 2002; Fees, Kaff, Holmberg, Teagarden, & Delreal, 2014). The music can help a student attend to a social story and remember it. As the music is faded over time, short portions of the melody may be used to prompt a student in remembering the story in different situations.

Often, music therapy can assist when children are struggling to make progress through other means because it affects the mind, body, and spirit in different ways than traditional treatment. Music therapy provides a highly motivating (Gold, Voracek, & Wigram, 2004; Twyford & Rickson, 2013) and engaging stimulus that helps students focus and sustain attention (Gold et al., 2004; Pasiali, LaGasse, & Penn, 2014). It modulates attention, cognition, and behavior (Koelsch, 2009). Music also organizes information (Gaston, 1968). Music therapists can use music to structure information via rhythm and melody, thus creating a temporal order to learn and memorize material (Thaut, Peterson, & McIntosh, 2005). As Lin et al. (2011) stated, “Music is a highly complex and precisely organized stimulus that interacts with the human brain and modulates synaptic plasticity and neuronal learning/readjustment in the brain” (p. 34). Studies have suggested that music positively impacts cortical plasticity, the brain’s ability to make new neural connections (Grau-Sánchez et al., 2013; Thaut, 2010; Wan, Rüber, Hohmann, & Schlaug, 2010).

Music also activates reward centers in the brain, and dopamine is released in response to music (Salimpoor et al., 2015; Yinger & Gooding, 2014; Zatorre & Salimpoor, 2013). Dopamine is a neurotransmitter linked to motivation and reinforcement (Salimpoor et al., 2015). Motivation may help a student attend to a task longer in the classroom, listen more fully to peers and teachers, work longer on a physical activity, and much more. As music captures attention, engages, and motivates students, they often will demonstrate skills in music therapy sessions that are not evident in other settings (Gold et al., 2004). These skills can then be built on and generalized to other areas of education, treatment, and daily living.

Music affects humans in many ways that are still under investigation. Many features of music therapy may assist students in profiting from their educational program. Music affects the brain and enhances cognition and attention, motivation and self-reward, communication, expression, and social functioning, all of which have a tremendous impact on student success in school.

MUSIC THERAPY IN SCHOOLS

In school settings, music therapy is used to help students make progress in their educational program. Music therapists work with all students of all ages. Within school districts, music therapists may travel between schools,

perhaps spending one day at a building to serve students there. Large school districts employ multiple music therapists. Smaller schools may contract music therapy services with a local board certified music therapist. In the United States, music therapists take a national certification exam after completing their music therapy education. On passing, they are awarded the credential MT-BC (Music Therapist–Board Certified). Board certified music therapists may be located on the Certification Board for Music Therapists website at http://cbmt.org/certificant_search. In addition to board certification, some states require music therapy licensure.

In the United States, music therapy is a related service under the Individuals With Disabilities Education Act (IDEA; IDEA, 2004; see also AMTA, 2013; Ritter-Cantesanu, 2014); music therapists follow similar procedures for assessment and treatment planning as other related service providers in the school system. Treatment plans are developed after an assessment indicates that music therapy is needed or may be beneficial. Music therapists observe and document baseline behavior regarding several areas of functioning: communication, speech, social, motor, academic, emotional, sensory, and so forth. In addition, music therapists assess how individuals respond to music. Not only do they look at a person's musical behaviors (singing, playing instruments, moving to music) but they also assess nonmusical behaviors in response to the musical stimulus by observing behaviors such as the following: Does the individual walk more steadily to a steady beat than without it? Does the person attend to a task longer with music? Does a person follow directions more accurately when instructions are provided musically? Does an individual portray more emotional expression when music is presented than without it? Is a person able to memorize necessary information easier with music?

Service delivery of music therapy is required in schools when a music therapy eligibility assessment indicates that music therapy is necessary for a student to benefit from his or her educational program (Brunk & Coleman, 2000; Ritter-Cantesanu, 2014). Although music therapy may be generally beneficial to a child, a school district has only to provide it when it is necessary for the child's education. A child could require music therapy services outside of the school environment yet not demonstrate a need for music therapy within the school setting.

A common music therapy eligibility assessment process is the Special Education Music Therapy Assessment Process (SEMTAP; Brunk & Coleman, 2000). After a request for an eligibility assessment is made, a qualified music therapist reviews the student's individualized education program (IEP) and interviews members of the IEP team. Then the music therapist selects some of the student's IEP objectives that could be addressed in music therapy and observes the student working on the objectives in a typical setting that does not include music. Next, the music therapist prepares the assessment to target the selected IEP objectives and administers it. The music therapist compares data from the student's performance with and without music therapy to determine whether music therapy is necessary for the student to access

education and make progress (Ritter-Cantesanu, 2014). The assessment report is then written and presented with subsequent recommendations to the IEP team (Brunk & Coleman, 2000).

If music therapy is determined to be necessary for a student's education, the school district must provide it according to IDEA (Brunk & Coleman, 2000). The music therapist may write goals and objectives for inclusion on the IEP or be listed as a related service provider responsible for team-written IEP goals (Ritter-Cantesanu, 2014).

Music therapy is occasionally provided by school systems to students in early intervention classrooms or at-risk students in a consult-based program and, thus, is not documented on each student's IEP. Music therapists may provide consultative services to students via general classroom or special education teachers or other related service providers. With this format, music therapy may be listed on the IEP as a supplementary aid or service (Ritter-Cantesanu, 2014). This typically includes creating music to meet student(s) needs and providing a way for the teacher to use the music. Often, the music therapist will record the intended song and give it to the teacher to learn to sing him- or herself or for the teacher to play the recording. The consult-service model may also include the music therapist providing sessions for a limited amount of time with the purpose of educating the teacher on how to include the individualized music into the student's classroom setting (Chester, Holmberg, Lawrence, & Thurmond, 1999).

Music therapists may also help students successfully integrate into general classroom settings. This could range from helping a student prepare for participating in a music ensemble to helping a student transition between classrooms throughout the day without being overstimulated. Music therapists may assist music instructors in creating more accessible music or instruments, providing strategies for teaching (AMTA, 2006), or suggesting ways to enhance communication for successful inclusion. To increase success in changes throughout the school day, transitions can be facilitated with sung cues or music composed for specific transitions. By pairing the music with the transition, students may experience less anxiety due to the calming and engaging qualities of music, and they may accept change more easily because music is providing structure and familiarity during the transition. Case examples illustrate that musical transitions assist students in transitioning more quickly throughout their typical school day (Register & Humpal, 2007).

APPLICATION OF THE INTERVENTION THROUGH A TIERED SERVICE DELIVERY MODEL

As discussed, music therapists work in a variety of capacities to assist student learning in schools. In a tiered service model such as Response to Intervention, music therapists may work within all three tiers. In Tier 1, which is considered primary intervention for students in general education (Johnson, Mellard,

Fuchs, & McKnight, 2006), music therapists could be called into classrooms or general assemblies to promote team building, improved self-expression, increased emotional awareness, improved communication, more positive social interaction, and so forth. In Tier 2 (secondary interventions), music therapy may be used as additional support in early childhood classes or for at-risk students. This is where a program-based consultative model of music therapy is provided as an educational resource as opposed to being a related service and listed on the IEP (Chester et al., 1999). This model combines direct music therapy service to students with teacher training to implement music therapist–designed strategies and materials in the classroom. Music therapists design programs to reinforce students' IEP goals. Then they model music strategies during music therapy sessions and teach instructors how to implement music therapist–created strategies in the classroom (Chester et al., 1999). In Tier 3, direct music therapy services are provided to students either within the classroom environment or in an individual or small group setting. For music therapy to be provided in this manner as a related service, it must be listed on the IEP. The process typically starts with a teacher or parent noticing that the student is struggling with his or her educational program. Then, if the student responds to music such that he or she is motivated by music, retains information better with music, or needs another means of communication, they may consider whether a music therapy assessment is appropriate (Brunk & Coleman, 2000). Any member of the IEP team can suggest that an assessment be made by a qualified music therapist. The IEP team reviews the assessment results and decides whether to add music therapy to the student's IEP as a related service.

CASE EXAMPLE OF TIER 3 DIRECT MUSIC THERAPY SERVICE

Eight-year-old Ramona was struggling in much of her schoolwork. She had difficulty attending in class, had few friends, and often failed to meet the objectives listed on her IEP. Ramona spent most of her day with her peers in the general education classroom and was working in the special education classroom about 40% of the school day. Her classroom teacher noticed that Ramona displayed a more positive expression and often attended to music when it was played in the classroom. The teacher discerned that Ramona was more motivated to complete assignments if music was involved. Her teacher wondered whether Ramona would benefit from music therapy services, so she mentioned the possibility of a music therapy assessment.

After the team reviewed the request, a call for a music therapy eligibility assessment was made. The board-certified music therapist used the SEMTAP to determine whether music therapy was necessary for Ramona to benefit from her educational program.

The music therapist reviewed Ramona's current IEP, met with her classroom and special education teachers, and observed Ramona in both classroom

settings. She also interviewed one of Ramona's parents regarding the observations of Ramona's responses to music and where Ramona appeared to need extra assistance in her educational program. The music therapist then selected specific objectives from Ramona's IEP that could be addressed with music therapy. The music therapist observed Ramona working on the selected IEP objectives in her typical classroom settings and recorded her responses. The music therapist then designed music therapy interventions to address the selected IEP objectives and conducted a music therapy assessment session with Ramona. Ramona participated in the music therapy session, and the music therapist tracked data on the targeted IEP objectives. Data from both the typical classroom sessions and the music therapy session were analyzed and compared. Results indicated that Ramona attended more, appeared to grasp academic concepts easier, and interacted with her peers more when in music therapy compared with her regular educational programming. The assessment data indicated that Ramona required music therapy to benefit from her educational programming. The music therapist prepared a report for the IEP team that included the results of the assessment. The music therapist recommended direct services because Ramona performed significantly better in music therapy than in her currently scheduled educational program. The IEP team reviewed the report, discussed it, and moved to execute the recommendation. Direct music therapy services were implemented to address Ramona's needs for increased attention, improved social skills, and improved academic skills.

A treatment plan was developed and implemented according to her baseline data. The following goals and objectives were included, with projected dates of completion listed in her IEP.

1. To increase focused attention:
 - When given the directive “wait,” Ramona will wait 20 seconds with hands down given one or fewer cues in eight out of 10 opportunities on 3 out of 3 data days.
 - When given a three-step direction that is novel or variable (not routine), Ramona will follow the directions in order with 75% accuracy across all trials on 3 out of 4 data days.
2. To increase positive social skills:
 - Ramona will greet adults and peers with *hi* or *bye* when given a verbal prompt with 80% accuracy on 2 out of 3 data days.
3. To acquire grade-level academic skills in math:
 - Ramona will expressively state numbers 0 to 60 with at least 80% accuracy on 3 out of 4 data days,
 - Ramona will tell time to the hour, half hour, quarter after, and quarter to using analog and digital clocks with 90% accuracy or above on 2 out of 3 data days.

4. To acquire grade-level academic skills in reading:

- When reading a book at second or third-grade reading level, Ramona will answer listening comprehension questions based on no more than three sentences at 80% accuracy across 3 out of 3 data days.

The music therapist then constructed interventions to address each of Ramona's objectives. Possible interventions are listed next.

To Increase Focused Attention

To address the focused attention objectives of waiting, the music therapist creates interventions using instruments. For this objective, Ramona and the music therapist may sit at a keyboard and have alternating periods of playing and waiting, or the music therapist may play an accompanying instrument (e.g., keyboard, guitar, percussion) while Ramona plays one of her preferred instruments. The music creation consists of play, stop, and waiting periods as directed by the music therapist.

The music therapist may also use multiple instruments to encourage Ramona to follow three-step directions. Directions for Ramona to play various instruments are given in song context so that Ramona's adherence to following the directions is required for the song to be complete. This objective could also be facilitated via a songwriting or composition intervention. Once Ramona follows the directions to create a song, the song is played, which may induce feelings of satisfaction or achievement.

To Increase Positive Social Skills

This objective may be facilitated via greeting songs and farewell songs composed by the music therapist and used in Ramona's group sessions. As Ramona demonstrates success via music therapy, the music will be faded to increase generalization to spoken greetings and farewells.

To Acquire Grade-Level Academic Skills in Math

To address stating numbers 0 to 60, the music therapist may create a song to function as a mnemonic device for Ramona to remember the numbers. Gradually, the music will be faded for Ramona to express the numbers verbally in speech, not song. The music therapist will also ask Ramona questions such as, "What number comes after 48?" or "What number comes before 39?" Due to the motivating effects of music, students are more likely to practice repetitive tasks, such as counting, for increased periods.

To tell time, the music therapist may create several interactive songs to address the concepts with fill-in-the-blank songs or songs that give a direction to Ramona to manipulate an analog clock to the time indicated by the music therapist. The music therapist also composes a song to use as a mnemonic device for the quarter-hour and half-hour concepts.

To Acquire Grade-Level Academic Skills in Reading

The music therapist will address comprehension by singing the text of books, stories, or directives. She may create songs and stop singing at certain times to ask comprehension questions. The music therapist may also use rhythm by playing drums to assist Ramona in structuring the material and in cuing her to respond.

CONCLUSION

Music therapists work as members of the interdisciplinary treatment team to address challenges that students have in learning. They provide several different types of services to assist students in benefiting from their educational program. Music therapists are educated in how music affects humans and how to use music to create positive changes in people. Using the engaging, motivating music stimulus, music therapists create interventions to help students succeed.

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16

Written Emotional Expression in Schools

Processing Psychological and Emotional Stress Through Narrative Writing

Kari A. Sassu, Melissa A. Bray, Nicholas Gelbar, and Tiffany P. Kerzner

School-based practitioners regularly pursue efficient, effective interventions that can be readily implemented within the school setting. One such intervention, written emotional expression, has been applied successfully to many areas, including health, academic, and social and emotional well-being. Pennebaker and Smyth (2016) described *expressive writing* as a simple technique wherein people typically write about an upsetting experience for a brief period. This intervention is simple in nature, brief in format, and easy to implement. Though commonly used to address negative feelings, it has the flexibility to focus on both negative and positive thoughts and the potential to modify participants' perceptions and facilitate the development of greater coping skills (Bray et al., 2006). As such, written emotional expression holds considerable promise for use with a select population of school-age individuals.

Written emotional expression is a form of narrative writing in which the subject describes his or her feelings, with little regard for writing conventions. As an intervention, written emotional expression requires few resources and has proven successful with individuals who possess the requisite skills and have reached an appropriate developmental level to engage in the writing tasks. To engage in written emotional expression, individuals typically write their thoughts on paper or type into a computer in response to a story starter. The story starter could prompt the individual to write about thoughts that cause them distress or those that give rise to happy feelings. Outcomes of written expression as an intervention include decreased feelings of anxiety, reduction

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in stress levels, and the heightened ability to focus on tasks at hand (Bray et al., 2006). Given the ease with which this technique can be implemented, it remains a feasible option for school-based practitioners to use with select students.

THEORETICAL AND EMPIRICAL SUPPORT

Support for the use of written emotional expression as a psychological intervention has grown over the past several decades (Manier & Olivares, 2005). Benefits derived from the use of written emotional expression include improved physiological functioning, seemingly validating a common and longstanding belief among many psychologists in the power of a mind–body connection. In addition, the use of written emotional expression has effectively led to changes in social behavior, thereby allowing individuals to access more readily the scripts they have composed when discussing their thoughts with others (Manier & Olivares, 2005).

Written emotional expression allows the participant to express feelings, thoughts, and ideas and to address conflicts without having to engage with another person. For some, this may be preferable to the traditional dialogue aspect of cognitive behavioral therapy because they may be more inclined to articulate their thoughts when they do not feel as though they are being “judged” by another. That is, recording one’s thoughts in written format may allow for an uninterrupted expression of emotion whereby one can explore one’s thoughts as they occur and revisit those recorded cognitions for further exploration at a later time. For others, written expression may be a means by which to enhance the dialogue involved in talk therapy, either serving as an agenda or starting point for a conversation shared with one’s therapist or counselor. Thus, written expression offers flexibility as an intervention; it may be used in such a way as to organize one’s thoughts so that the individual can revisit these thoughts either with a counselor or independent of one.

Pennebaker and Smyth (2016) suggested that “writing is a natural human activity . . . [in that] it helps us to integrate and organize our complicated lives” (p. 72). As such, writing may help us to process complicated ideas, purge problems, and clear our minds of troubling thoughts. Within the school setting, if a student is provided the opportunity to briefly write down plaguing thoughts or ideas as they are occurring in the classroom, he or she may be able to effectively refocus on the presenting academic task because they have created a “placeholder” for those thoughts, which then can be revisited at a more appropriate time within in a counseling session or elsewhere. Consequently, this may allow the student to devote the cognitive energy necessary to attend to the task at hand, temporarily freeing her or his mind of the preoccupying thoughts. This may provide students with the assurance that they have recorded their concerns, which will remain in that repository until

a point at which they are allowed to return to them and process them. As a result, this simple intervention may allow the student to develop related skills including improved self-management and self-awareness. In this way, written emotional expression might be considered a form of self-help therapy because it serves to help participants understand and address emotionally challenging circumstances or events (Pennebaker & Smyth, 2016).

Written emotional expression has demonstrated positive outcomes in both school-based and clinical applications. It has improved the academic outcomes of students across myriad content areas. In particular, written emotional expression has reduced depression, anxiety, and stress and improved happiness in school-aged students as well as the adult population (Martin, 2007). Within a school-based setting, written emotional expression has demonstrated positive outcomes for a variety of behavioral, social-emotional, and academic outcomes (Pennebaker & Smyth, 2016; Travagin, Margola, & Revenson, 2015). For example, in a study by Patwa and colleagues (2018), a writing intervention was applied to externalizing behaviors and successfully resulted in increased levels of attention and the promotion of appropriate classroom behavior. In this study, a writing intervention focused on gratitude was used to reduce off-task behaviors including noncompliant, inattentive, and mildly aggressive behaviors (see Patwa et al., 2018). Gratitude writing is a simple and effective type of written emotional expression that been shown to lead to fewer physical symptoms, heightened optimism, improved life satisfaction, increased positive emotions, higher levels of attention, and a greater likelihood of offering help and support (Reivich, 2009). The written expression intervention used by Patwa and colleagues involved daily 10-minute writing exercises in which the student was prompted to write a letter expressing gratitude to someone they had not yet had the chance to thank. The study found that the gratitude writing intervention was effective in reducing disruptive behavior in students with off-task, noncompliant, inattentive, and mildly aggressive behaviors, thereby demonstrating the utility of written emotional expression for externalizing behaviors in a school-based setting.

Clinical research has demonstrated that written emotional expression applied to physical health and wellness has proven effective in improving quality of life indicators across many health areas including cancer, asthma, diabetes, and cardiovascular disease, among others (Bray et al., 2006; Van Koningsbruggen & Das, 2009). It also has worked quite reliably to increase coping strategies in these patients (Pennebaker & Smyth, 2016). Asthma is one disease for which written emotional expression has improved both small and large airway functioning (Bray et al., 2006). The hypothesis in these investigations is that anxiety and/or depression was implicated in the reduced lung values, and when the written exercise was used, it decreased the internalizing behaviors, and as a result, lung functioning increased. Standardized spirometry has been the objective tool used in these studies to measure the dependent variables, FEV1 (forced expiratory volume in 1 second) and FEF25-75 (forced expiratory flow at 25%–75% of the pulmonary volume).

Beyond this example of improved lung functioning, other health areas have mainly focused on improving coping strategies among individuals living with chronic pain and promoting happiness and life satisfaction during difficult health periods. In particular, cancer patients have used written emotional expression to mediate the stress of initial diagnosis as well as the effects of chemotherapy treatment (Root et al., 2016). In these cases, the patients have written expressively about their negative thought patterns as they relate to fears about a reduction in their life span and perceived impact on their families. Females with breast cancer, who were members of a written emotional expressive group, reported lowered rates of experienced physical symptoms, less frequent medical appointments, and fewer cancer-related comorbidities than the control subjects (Stanton et al., 2002).

In all aforementioned cases, the writing exercises increased positive subjective well-being and decreased negative emotions. Of particular note, depression and anxiety, with or without health impairments, are uniquely sensitive to the effects of written emotional expression (Bray et al., 2006). Writing about fears and sadness has been shown to impact both of these mood disorders positively. Interestingly, the patients are not asked to write about anything other than their thoughts regarding current presenting challenges, and the only directive provided is to write continuously for the full time allotment (typically approximately 20 minutes); no other specific instructions or guidelines are provided.

Meta-Analytic Outcomes

The initial meta-analysis of written emotional expression (see Smyth, 1998) indicated that the early studies demonstrated robust effect sizes (mean Cohen's $d = 0.47$). However, the variability in the observed effect sizes across studies was considerable, and most of the studies up to that point were conducted using convenience samples of college students. As the intervention has been studied with different populations, by different research teams, and/or with different outcomes measured, the effect sizes have been medium or higher (Frattaroli, 2006; Frisina, Borod, & Lepore, 2004). It should be noted that a curvilinear relationship has been found with respect to the level of distress and the derived benefit of written emotional expression. That is, those experiencing either high or low levels of distress are less likely to derive benefit from written emotional expression, whereas those experiencing moderate levels of distress are likely to derive the greatest benefit (Manier & Olivares, 2005).

Frisina and colleagues (2004) noted that written emotional expression may be more effective in clinical populations; they observed a greater effect size in their meta-analysis (mean d for physical health outcomes = 0.21) than found in meta-analyses that included samples drawn from the general population (Frattaroli, 2006; Travagin et al., 2015). Individuals from the general population may experience a ceiling effect, at which point it is not possible

for them to improve on the outcome measures. Germane to this chapter, Travagin and colleagues (2015) conducted a meta-analysis of expressive writing interventions for adolescents that found an average small, positive effect across studies. A systematic review conducted by Holder-Spriggs (2015) concurred with the results from the Travagin et al. study but also included studies using samples of children. Holder-Spriggs indicated that there is a paucity of research in this area; however, what has been found is promising.

Special Considerations

Overall, written emotional expression is an intervention that requires little in the way of resources or time to implement. Further, written emotional expression can be easily added to traditional cognitive-behavioral approaches as a homework assignment. However, the efficacy of written emotional expression has varied over time and across research teams, outcomes, and dosages (Holder-Spriggs, 2015), which means that school-based professionals hoping to adopt this intervention should exercise caution when choosing students who could potentially benefit, and these practitioners should be certain to monitor the derived benefits effectively.

Taken together, the results of the meta-analyses discussed earlier indicate that adolescents and adults experiencing moderate or greater levels of psychological distress may be the most likely to profit from this intervention (Manier & Olivares, 2005). It is a task that students and adults with the requisite skills can complete independently with little direction. Adolescent and adult populations are more likely to have the abstract reasoning and emotional development necessary to be able to access the therapeutic benefits of written emotional expression. When considering who would benefit most from this intervention, it is important for practitioners to consider an individual's ability to engage in abstract reasoning as well as their ability to explore their emotions. Modifications to assist a wider range of individuals with varying levels of abstract reasoning in accessing this intervention are offered subsequently. It is suggested that clinicians focus on building the prerequisite skills of emotional awareness before using this intervention with individuals who may not have the emotional development necessary to access the intervention.

To fully access this intervention, individuals must also have the writing skills necessary to be able to complete the required tasks. That is, they have to be able to write fluently about their feelings and thoughts, without the need to expend cognitive energy on the conventions of writing (e.g., spelling, formatting, phrasing), which are of little import to the technique.

Younger children and those without these requisite skills will not likely gain from an open-ended approach to written emotional expression. In particular, this approach may be less efficacious for individuals with disabilities who, because of the nature of their disability, may not possess these skills. For example, students who struggle with writing would not likely benefit from this intervention approach because their cognitive resources would be

devoted to the task of writing itself versus being focused on the emotional disclosure aspect of the task. As noted previously, this aspect has been theorized to be one of the potential key ingredients of written emotional expression. In addition, those individuals who are incapable of introspecting or considerably limited in their abilities to introspect also are unlikely to derive much benefit from this intervention. Ultimately, the decision to implement this intervention with students of varying abilities should include consideration of whether the activity will likely result in greater benefit than frustration. For some students, the task of writing itself may increase frustration or anxiety due to individual challenges; others without the inherent skills still may derive the intended benefit if accommodations are provided.

Modifications to the technique could be considered for individuals who lack certain skills but for whom it is anticipated that emotional benefit could be derived using this technique. For example, individuals for whom the motor component of writing is difficult could be encouraged to use a form of technology such as voice-to-text. Others for whom the process of writing is difficult due to executive functioning challenges might be provided with not only the questions to prompt thought but also sentence starters to guide writing. This second accommodation may also be beneficial for individuals whose abstract reasoning ability might have precluded the use of this intervention strategy. Though these accommodations do not represent the typical implementation of this technique, they may allow for more effective and widespread use in a tiered system within the school setting.

School-Based Application of Written Expression Within a Tiered System

Within a school-based setting, written emotional expression interventions typically involve engaging a student with a writing prompt for 10 to 20 minutes each day. The specific prompts can take many forms; some, such as gratitude writing, use a positive psychology approach, whereas others focus on expressing current feelings, fears, or challenges through writing. As with all school-based interventions, monitoring the progress of the student's target behaviors should continue to determine intervention effectiveness.

Because evidence indicates that clinical populations seem to reap greater benefits from written emotional expression (Frisina et al., 2004), this intervention is best conceptualized as a Tier 2 or Tier 3 intervention within the school setting. However, this does not preclude its use as a Tier 1 intervention. Because it requires few resources to implement, it can be completed by students independently, and it is largely innocuous (i.e., it is not likely to cause harm). Thus, when adapting and using this intervention for nonclinical samples, interventionists must use clinical judgment to determine the appropriateness and potential benefits of Tier 1 use. For example, written emotional expression might be beneficial as a Tier 1 intervention when used class wide to alleviate test anxiety or as a method of stress reduction for all students.

This would likely be presented differently in the lower grades than the upper grades. For example, elementary teachers might provide students with a sentence starter and guidance such as, “The upcoming test makes me feel ____ because _____. Write one to two additional sentences about how you are feeling.” High school teachers might ask students to use a blank piece of paper and write a brief (e.g., 5–10 minutes) response to the question of how they are feeling about an upcoming test or a recent stressful event.

As a school-based intervention, written emotional expression may be particularly suited for use as a Tier 2 intervention for students who are at risk of psychological and/or behavioral difficulties because it can easily be delivered as a group intervention. As a Tier 2 intervention, it may even be beneficial for adolescents who have experienced adverse childhood events or trauma; it has been implemented successfully with adolescents who were refugees (Kalantari, Yule, Dyregrov, Neshatdoost, & Ahmadi, 2012; Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004). At the Tier 2 level, integrating written emotional expression into small group interventions could easily be done using a homework format, allowing for further reflection and emotional processing outside of group intervention sessions. Depending on age and abilities, students might be provided with specific questions to ponder or sentence starters to guide writing.

Finally, the research supports the use of written emotional expression with clinical samples (Frisina et al., 2004). Thus, it certainly could be used either as a stand-alone Tier 3 intervention or in combination with other intervention approaches such as cognitive behavior therapy. Again, it should be emphasized that adolescents experiencing significant physical or psychological distress may be ideal targets for this intervention at the Tier 3 level because they are most likely to possess the abstract reasoning, emotional development, and writing skills necessary to access the therapeutic benefits of written emotional expression. In a Tier 3 context, it is imperative that clinicians monitor the writing samples produced by the students because students may indicate higher levels of emotional distress and/or thoughts of self-harm than they would when talking directly with the clinician or within a group. It should be noted that the intervention may initially increase negative feelings because it may bring difficult experiences to the surface to be processed (Pennebaker & Smyth, 2016). This underscores the importance of actively monitoring students’ writing such that an appropriate response to these potential consequences can be efficiently delivered.

SCHOOL-BASED CASE EXAMPLE

Sienna is a sixth-grade student exhibiting high levels of off-task behaviors in the classroom. Her teacher reported that Sienna was often verbally disruptive during classroom instruction or was simply passively disengaged in the class activities. The school psychologist conducted a series of classroom observations

using the Behavioral Observation of Students in Schools (BOSS; Shapiro, 2003). After three observations, it was found that Sienna was academically engaged, on average, only 59% of the time. In addition, she engaged in off-task behaviors 58% of the time. On reviewing this data, the team decided to begin the response to intervention process by implementing a written emotional expression intervention. Gratitude writing, specifically, was chosen because evidence has supported its efficacy in decreasing off-task behavior. Further, Sienna has demonstrated that she possesses the skills required to engage in writing tasks, and her teacher reported that, when engaged, she was often able to convey her thoughts effectively.

Each day during language arts, the teacher sent Sienna to the school psychologist's office at a time when she would not be missing direct instruction. When Sienna arrived in the school psychologist's office, she was given a prompt to write a letter expressing gratitude to someone she had not yet had the chance to thank. She was given 10 minutes to complete the task, she reviewed the letter with the school psychologist to ensure task engagement, and then she returned to class with her letter. She was told she may give the letter to the person she wrote about, but it was not required that she do so.

During intervention implementation, the school psychologist completed biweekly classroom observations using the BOSS to measure academic engagement and off-task behaviors. Sienna's classroom engagement increased steadily, and after 4 weeks of the intervention, Sienna's academic engagement reached 95% or higher for four consecutive observations. Further, Sienna's off-task behaviors remained below 5% for four consecutive observations. The intervention was then discontinued, though follow-up observations occurred three times the following week to ensure maintenance. Sienna's academic engagement and off-task behaviors remained consistent with intervention values, demonstrating a positive response to the gratitude writing intervention.

CONCLUSION

Written emotional expression is an intervention that requires minimal resources and can be adapted for use across tiers. It can be combined with other forms of intervention and used in combination with a variety of behavioral measurement tools. However, the effectiveness of this intervention is likely to vary according to the skill levels of participants as they relate to writing, expression, introspection, and reflection. Further, the level of participants' distress also is likely to impact the degree of this intervention's effectiveness, with moderately distressed individuals reporting the greatest improvements. Research has suggested that, within the school setting, written emotional expression may be best suited for adolescents and preadolescents experiencing moderate levels of psychological or emotional distress, supporting its use at Tiers 2 and 3. This population is likely to be the most suitable for the use

of written emotional expression as an intervention because they are likely to possess the requisite skills required for effective implementation. Further, the adaptability and feasibility of this intervention as a part of a treatment plan makes it an appealing choice for use within the school setting.

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17

Video Self-Modeling for Mind–Body Health

Melissa M. Root

Video self-modeling is an evidence-based practice with nearly 50 years of research supporting its use both in and out of schools (Buggey & Ogle, 2012; Creer & Miklich, 1970). It is a psychological intervention that is effective for both mind and body health and the mutually supportive interaction of the two. It is effective for preschoolers (Boudreau & Harvey, 2013) through adults (Goh, 2010; Hagin, Gonzales, & Gros Lambert, 2015) and for a wide range of presenting challenges, including those that are physical (Coulson, Adams, O'Dwyer, & Croxson, 2006; Dowrick & Dove, 1980; Steel et al., 2017), emotional (Kahn, Kehle, Jenson, & Clark, 1990), and cognitive (Goh, 2010; Lee, Lo, & Lo, 2017). This intervention is approved as an evidence-based practice by national programs (Bellini & Akullian, 2007; National Professional Development Center on ASD, 2010), uses technology found in nearly every school system (Nagel, 2014), and is effective for individual (Buggey & Ogle, 2012) and group (McNiff, 2015) use across a three-tiered instructional system. It is a well-researched, highly effective intervention with extensive application options that should be considered by all professionals in schools.

VIDEO SELF-MODELING DEFINITION

With video self-modeling, students learn how to perform a goal behavior by watching a short video of the behavior being performed well—by the student him- or herself. This is made possible by using careful recording and editing

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techniques. Humans often learn by modeling the behavior of others (Bandura, 1965). The likelihood of learning through modeling increases the more similar the model is in appearance to the learner (Bandura, 1965; Désy & Théoret, 2007). This theory is borne out through both video self-modeling research (Marcus & Wilder, 2009) as well as mirror neuron research in the human brain (Désy & Théoret, 2007). Video self-modeling capitalizes on this theory by having students serve as their own learning models, which increases the likelihood that they will model the behavior shown in the video.

The final edited videos are short—typically 30 seconds to 3 minutes each. They show the desired goal behavior being performed by students to the best of their ability—either naturally, with planned prompting, or through creative editing. Older students can be involved in planning and editing the final video if they desire. Students know that the videos are edited to show only their best behavior possible, and they are told why the video is being made. Because the videos are short and show the student in a positive light, most are interested in watching their videos. It is extremely important to remember that the videos are not used to shame students or to show them what they do that is annoying or wrong. They are only used to show the student's brain exactly what to do in certain situations. They, therefore, contain solely positive images of the student.

EFFECTS ON THE MIND

Video self-modeling works with internalizing mind functions such as fear, depression, and anxiety (Madaus & Ruberto, 2012). Each of these mind functions can affect the abilities of the body to accomplish healthy goals, such as exercise, sleep, and make healthy nutrition choices. Thus, impacting the mind with video self-modeling can also influence the synergistic operations of the mind and body collectively.

Kahn et al. (1990) studied video self-modeling with middle school students who exhibited depression. The videos showed externalizing behaviors that are inconsistent with typical behaviors associated with depression. For instance, they showed students using upright posture, eye contact, and pleasant voice tones and saying positive things about themselves. Students watched their 3-minute videos twice per week over 6 to 8 weeks. Results showed that video self-modeling was effective at reducing self-reported symptoms of depression for moderately and severely depressed adolescents. Parent reports also independently corroborated the student reports of improved mood.

Video self-modeling can also indirectly influence depression by teaching adaptive social skills (Boudreau & Harvey, 2013), which can encourage friendship opportunities. Boudreau and Harvey (2013) increased social initiations in students, ages 4 to 7, with autism spectrum disorder. Final videos, which were 6 to 7 minutes long, showed initiation of play by the participants and were watched over 29 sessions, though it is not clear from the article how

long it took to complete 29 sessions. The participants increased their social initiations from 36% to 72% (Participant 1), 2% to 26% (Participant 2), and 10% to 58% (Participant 3). Their initiations during intervention were indistinguishable from their typically developing peers. Social initiations can increase social network building opportunities. Having social networks is associated with fewer depressive symptoms in adolescents (Ueno, 2005). Specifically, Ueno (2005) found that having more friends in school is associated with lower depressive symptoms. Thus, video self-modeling can impact behaviors associated with friendship making, which can influence depressive symptoms.

Video self-modeling is also effective for improving anxiety and fears (Madaus & Ruberto, 2012). For instance, Schwartz, Houlihan, Krueger, and Simon (1997) successfully addressed fears about children for a woman with posttraumatic stress disorder. Previous treatments did not affect her fear of children, but a series of videos that showed her being gradually exposed to children (19 sessions over 6 months) did. Her fears were reduced, her heart rate and blood pressure decreased slightly, her confidence increased, and she no longer avoided situations involving children.

Public speaking anxiety is also influenced by video self-modeling (Rickards-Schlichting, Kehle, & Bray, 2004). State anxiety and public speaking anxiety in high school students were reduced through the follow-up phase with video self-modeling. The videos showed nonanxious speech, recorded without an audience present. However, an audience was edited in for the final video. Thus, the final video viewed individually by each student showed themselves speaking confidently in front of an audience. The final videos were 3 to 4 minutes long and were watched five times over a period of 3 weeks. It is important to note that the students know that the video is edited, as with all video self-modeling.

Recognition of the connection between depression and physical health is well established. “The medical community continues to acknowledge a connection between depression and physical health, for example, cardiac disease” (Blumenfield, Suojanen, & Weiss, 2012, p. 259). Depression, anxiety, and fears impact physical health given that they limit engagement in activities. For example, “symptoms associated with depression include joint pain, limb pain, back pain, gastrointestinal problems, fatigue, psychomotor activity changes, and appetite changes” (Trivedi, 2004, p. 12), and people experiencing those symptoms may not actively engage in exercise and proper nutrition to support their physical health. An example of the impact of this connection was shown by Sun et al. (2015), who found that people with suboptimal health (measured by blood pressure, blood glucose, and blood lipids) and also anxiety and/or depression had significantly lower artery elasticity (which is associated with cardiovascular disease) than those with suboptimal health and no anxiety or depression and healthy subjects. Depression and anxiety thereby have a direct negative impact on physical heart health and on activities that are known to promote good physical health, such as exercise and nutrition.

Not surprisingly, this mind–body impact has also been studied from the reverse angle by looking at physical health ailments and investigating associated mind challenges. Kawai, Kawai, Wollan, and Yawn (2017) interviewed adults with chronic pain and those without pain. They found that those with chronic pain were significantly more likely to be women, have less than a college degree, and be in fair or poor health. They were also more likely to have depression and anxiety and be obese.

Although these studies start from different angles (depression or poor health as the initial variable), they are correlational studies. This means they show that depression, anxiety, and poor health occur together, but the classic “what comes first?” question is not answered. Thus, interventions that address mind or body challenges have the potential to impact the other. In other words, if you improve physical health, you may also improve confidence and lessen anxiety and depression. Conversely, if you lower someone’s anxiety and depression, you may improve their physical functioning.

EFFECTS ON THE BODY

Several video self-modeling studies have directly focused on aspects of physical health (Coulson et al., 2006; Dowrick & Dove, 1980; Foltz, 2014; Hagin et al., 2015; Steel et al., 2017). These studies emphasized athletic performance (Foltz, 2014; Hagin et al., 2015) and physical recovery to gain nonimpaired physical functioning (Coulson et al., 2006; Dowrick & Dove, 1980; Steel et al., 2017). Although not all studies investigated co-occurring increases in confidence, anxiety, or depression, it is possible that improvements in physical performance may lead to changes in those mind functions too. In particular, for their study aimed at improving swimming skills, Dowrick and Dove (1980) selected students with spina bifida who expressed fears about swimming activities. Although the goal behavior in these studies was related to the body, the effects of and on the mind may be closely intertwined.

Studies emphasizing sports performance have shown affirmative changes in skill using video self-modeling. Foltz (2014) investigated the effect of video self-modeling on field hockey skills for female college athletes. The 1-minute videos, watched daily for 3 weeks, showed athlete-selected best shots of their swing. Results showed flat baseline performance, as measured by hitting accuracy, with increases in accuracy and an upward trend in performance during the intervention phase for three of the four participants. The fourth participant showed increases during both baseline and intervention phases, but her data were potentially affected by her return to the sport on the first day of baseline data collection following an injury. Qualitative interviews following the intervention showed evidence of increased self-efficacy for the participants as well.

Hagin et al. (2015) studied the effects of video self-modeling on running endurance with athletic adult males. The athletes each participated in both the control condition (running at peak performance until exhaustion while looking at a white video screen) and experimental condition (running at peak performance until exhaustion while watching a video of themselves running at peak performance). In this fashion, the experimental condition had a “pacesetter” that was the runner himself on video. Participants were told to keep pace with the video in the experimental condition. No verbal encouragement was offered in either condition. In both conditions, participants were told to state their perceived exertion rate (a range from very light to very, very hard) every 30 seconds. All participants experienced a significant increase in their time to exhaustion in the experimental condition versus control, as well as a significant lowering of their perceived exertion. Interestingly, there was no difference in heart rate across the two conditions.

The results of this preliminary study make a new and original contribution to the research on the complex mind–body relationship, and show that compared to a control condition cognitive stimulation using oneself as the model while carrying out a running task performed at 100 percent MAV [maximal aerobic velocity] significantly increases the time to exhaustion and endurance, and decreases perceived exertion without affecting HR [heart rate]. (Hagin et al., 2015, p. 499)

On the physical recovery side of research, Coulson et al. (2006) used video self-modeling to impact smile symmetry in participants with highly asymmetrical smiles due to long-term facial nerve palsy. Smile symmetry can be rectified using surgery and physical therapy, but the translation of skill from posed smiles during therapy to spontaneous smiles during social interactions can be difficult. The 1-minute videos showed each participant’s best-adapted smiles and were watched three times per day for 2 weeks. Following video self-modeling, participants’ reaction time to produce the adapted smile and the quality of the adapted smile were significantly better.

Dowrick and Dove (1980) used video self-modeling to improve the swimming skills of children with spina bifida. As mentioned earlier, fear and lack of skills impacted participants’ ability to improve their swimming. The final 2-minute videos showed each child performing at a level slightly better than their current level by editing out the use of prompts, supports, and signs of anxiety. Videos were watched three times per week, and all participants showed moderate gains in skills.

Steel et al. (2017) used video self-modeling to improve reach and grasp motions in participants who experienced arm movement limitations due to stroke. They specifically studied “control over the affected limb, movement self-confidence, movement self-consciousness, and well-being in 18 stroke survivors” (Steel et al., 2017, p. 1). The videos were made by recording the unaffected arm and flipping the image horizontally during editing. The final

2- to 3-minute videos were watched by each participant three times per day for 1 week. The task was to move a weighted object from one position to another as fast as possible and then return it to the original position. Significant shortening of the time it took to complete the forward motion task was realized. There was also a significant decrease in self-consciousness and a significant increase in movement confidence and self-efficacy.

Although not all these studies investigated video self-modeling with school-age children, they lend important information about the potential uses of this intervention strategy. Because it is a positive psychology intervention that is short in duration, fast in effectiveness, and deemed an evidence-based practice, it is worthwhile for practitioners to know all potential uses of video self-modeling.

SPECIAL CONSIDERATIONS

These studies show the wide range of appropriate applications of video self-modeling to mind-body health issues. It is important to note that clear trends regarding how often videos are watched and video length do not emerge. It is up to the practitioner to determine students' viewing capability and an appropriate timeline. Students with attention challenges and younger students may not be able to sustain their attention for a 3-minute video. When possible, practitioners should start with shorter videos that clearly show the goal behavior being performed well. Sometimes adding music to the video can increase the student's attention, but for others, that may be overwhelming. Practitioners should rely on their clinical judgment and make the final video an appropriate length for the student. Similarly, although videos are typically watched a minimum of 2 to 3 days per week, watching them more often is also effective.

Before beginning video self-modeling, it is recommended that practitioners secure caregiver permission because video recording is involved. It is advised that a distinct permission form specific to the intervention, beyond the practitioner's school's blanket photo and video permission form, be used because video self-modeling is a psychological treatment. However, that determination should be made by the school's administration. Securing separate permission also encourages parental involvement in the student's program. Sharing the student's video with caregivers can additionally serve to increase their understanding of the student's goal behaviors and skill capabilities and encourage generalization of the newly learned skill to the home environment.

As with most interventions, video self-modeling may not be effective for every goal behavior or every student (Buggey & Ogle, 2012). Consideration should be given to whether the goal behavior is developmentally appropriate for the student. For instance, video self-modeling has been shown to be effective for teaching social initiations (Bellini & Akullian, 2007; Boudreau & Harvey, 2013; Buggey, 2005). However, Buggey (2012) concluded in another

study that social initiation might be too developmentally advanced to teach to some 3-year-olds with autism spectrum disorder. Practitioners should thus consider the developmental level of the student when selecting the goal behavior for the video.

VIDEO SELF-MODELING IN A THREE-TIER INTERVENTION SYSTEM

Video self-modeling can be used at all levels of a three-tiered instructional model. A three-tiered instructional process uses a continuum of intensity to address the learning needs of all students in a school. Tier 1 uses research-based instruction in a group setting, Tier 2 intensifies that instruction in smaller group settings, and Tier 3 is the most intense, using individualized instruction. The three-tiered system is used for both academic and behavioral learning, and video self-modeling is effective for both aspects. However, this chapter focuses on applications of video self-modeling specific to mind–body health applications.

Tier 1 Application

Within a large group Tier 1 application, video self-modeling can be used to impact classroom behavioral expectations, including how to treat one another. For instance, at the beginning of the school year, a teacher might elect to use video self-modeling to show students kindly greeting each other on the rug during morning meeting. The video would show the class sitting in a circle on the rug and completing a morning greeting exercise, with each child taking their turn to greet the children next to him or her using a clear voice, upright posture, eye contact, and positive affect. The final edited video would contain an example of each child in the class completing the greeting task and would be shown to the entire class a few days per week for a couple of weeks or until the behavior was being consistently performed. This use has the potential to impact friendship-making opportunities, group participation, and acceptance of peers, which may impact depression symptoms and thus physical health (see the discussion of the connection in the Effects on the Mind section in this chapter).

Similarly, video self-modeling can be used to address how to prevent bullying, such as through bystander intervention. The whole class can participate by acting out different scripts that exemplify these positive behaviors. Again, the whole class would watch the final videos together. These are just a few examples of how to use video self-modeling for Tier 1 instruction—there are many more that can be developed based on classroom needs.

McNiff (2015) provided an example of Tier 1 use of video self-modeling. This study investigated transition time between activities within class and transition time to line up. The video was shown to the entire class daily in the morning. They found a 50% decrease in whole-class time required to line up

and a 42% decrease in the time required to transition between activities in class.

Tier 2 Application

Video self-modeling can be used in Tier 2 instruction, which is for those who need more intensive instruction than that for Tier 1. To extend the example of teaching students to socialize, if a practitioner has a student who will not greet peers in the large setting or continues to be bullied by peers without sticking up for him- or herself, he or she may be better served with Tier 2, small group, instruction. For example, if there are four students who continue to not greet others in the classroom or who greet peers quietly in the group setting but do not generalize to greeting others in other environments, such as the hallway, cafeteria, and music class, they may need more intensive instruction in a small group outside the large group setting. Practitioners can use video self-modeling to show dyad greetings among the four students, and they can also record what appropriate reciprocity looks like in a conversation by writing multiple scripts for the students to act out on camera. This Tier 2 instruction can be more intensive, and the video can be tailored to the specific needs of those in the small group.

Tier 3 Application

For students who do not respond to Tier 1 and Tier 2 instruction, the most intensive Tier 3 instruction is appropriate. Video self-modeling is applicable for this level of individualized instruction because the video depicts exactly what the student has to do in specific situations. For example, if students have the ability to speak and speak well in the practitioner's office but not in the classroom or small group setting—a condition known as *selective mutism*—the practitioner records them in their office using good posture, eye contact, and a smile while issuing an age-appropriate greeting for each person in the class (e.g., “Good morning, Patrick”). The practitioner records the student saying this in his or her office with no one else there. The practitioner then records other students in the classroom saying, “Good morning, Mary,” for example, to the student. The practitioner then edits the final video to show Mary saying, “Good morning, Patrick” and Patrick saying, “Good morning, Mary.” They then show additional examples of this exchange to other students in the classroom.

This video more thoroughly met Mary's learning needs than Tier 1 or 2 applications of video self-modeling and will likely positively impact her learning of appropriate greeting behavior in the classroom. As with Tier 1 and 2 applications described earlier, learning to greet others may open up friendship-making opportunities for Mary, which can impact depression and physical health. Beyond that, addressing the selective mutism Mary exhibited also addresses anxiety for her because selective mutism is categorized as an anxiety disorder in the *Diagnostic and Statistical Manual of Mental Disorders*

(5th ed.; American Psychiatric Association, 2013) and in the *International Classification of Diseases for Mortality and Statistics* (11th rev.; World Health Organization, 2018).

CASE EXAMPLE

This example is based on several cases I have used of video self-modeling in schools and programs for adults with disabilities. The presenting concern was fire alarm anxiety, which is an anxiety many students experience in school and is fairly ubiquitous across school systems. Many students with fire alarm anxiety experience intense physical reactions, such as a pounding heart and profuse sweating, when the monthly fire drill occurs. It is important for their physical health and that of their teachers and friends to evacuate the building in a quick and orderly fashion in the event of a real fire. Beyond the immediate health benefit of living versus dying in a fire, reducing this anxiety can impact the student's ability to attend school and thus make friends in extreme cases. Even in less-than-extreme cases, if the student has an excessive behavioral response to a fire alarm, their friendships may be impacted, particularly as they age. Again, friendship formation is associated with fewer depressive symptoms (Ueno, 2005), and depression is associated with greater cardiovascular and physical health challenges (Sun et al., 2015).

Background

Deirdre was a 4-year-old student who exhibited anxiety when the school fire alarm sounded. She typically asked her teacher repeatedly when a fire drill would occur. When one did occur, she grew pale, began to cry and scream, and refused to follow directions. Her teacher often had to assign an adult to physically escort Deirdre out of the building. For the remainder of the day, Deirdre had difficulty concentrating. The school psychologist determined that video self-modeling might help reduce her anxiety and followed several implementation steps.

Intervention

Step 1

Parent permission was gained to use video self-modeling with Deirdre.

Step 2

Deirdre was told she would star in a movie to help her respond better to the fire alarm so she could be safe and healthy.

Step 3

Deirdre was video recorded following the correct fire drill procedures; recording was completed when she felt confident and comfortable. She was

not recorded during an actual fire drill because that video would have shown her worst behaviors. To show her performing the fire drill procedures to the best of her ability, she was recorded with her class going through the fire drill procedures without the sound of a fire drill.

Step 4

The video was edited to focus on Deirdre. The sound of the fire drill was inserted into the video, along with the descriptor “Deirdre reacting calmly and safely during a fire drill” at the beginning of the video. A voice saying, “Great job!” and clapping were added to the end of the video.

Step 5

Deirdre was shown the video on 3 days the first week with the volume set at two out of 10. The volume was gradually raised each week to increase her tolerance to the sound. She watched the video 2 to 3 days per week.

Step 6

Deirdre was monitored for adverse reactions to the video. If increases in the volume caused clear distress for her, they were lowered slightly for a couple of viewings to keep her interest in watching the video. Attempts to gradually increase the volume continued after Deirdre showed comfort again with a lower level of volume.

Outcome

Deirdre tolerated watching the video and appeared to acclimate to the sound of the fire drill as the volume was raised. She allowed friends to watch the video with her and delighted in seeing herself on the tablet. When the fire drill sounded that month, she shuddered slightly and then proceeded to exit the building calmly with her classmates. She watched the video once per week for the next month and then no longer needed to watch it.

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18

Hypnosis and the Potential Application in the School Setting

Michelle M. Perfect and Caroline Champagne

Hypnosis is considered a mind–body intervention given its influences on perception and physical sensations. Perceptual changes occur as an individual engages in imagination and visualization. Somatic effects have been noted in its application to treat headaches, pain, and gastrointestinal distress. Current research on the efficacy of hypnotic interventions has been limited, although historically, several studies or case reviews have documented hypnosis as a promising approach when addressing those health-related complaints, reducing anxiety, and bolstering confidence, focus, and motivation for academic performance. In this chapter, we review the benefits of hypnosis with students in more detail, along with practical and ethical considerations for implementing hypnosis in schools.

OVERVIEW OF CLINICAL HYPNOSIS

Two leading organizations have put forth definitions of hypnosis. In 2014, the American Society of Clinical Hypnosis (ASCH; 2019b) described *hypnosis* as

an altered state of awareness, perception or consciousness that is used, by licensed and trained doctors or masters prepared individuals, for treating a psychological or physical problem. It is a highly relaxed state. Hypnosis is a state of inner

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Promoting Mind–Body Health in Schools: Interventions for Mental Health Professionals,
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absorption, concentration and focused attention. It is like using a magnifying glass to focus the rays of the sun and make them more powerful. Similarly, when our minds are concentrated and focused, we are able to use our minds more powerfully. Because hypnosis allows people to use more of their potential, learning self-hypnosis is the ultimate act of self-control. (para. 1–2)

In 2015, American Psychological Association (APA) Division 30, the Society of Psychological Hypnosis, defined *hypnosis* as “a state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion” (as cited in Elkins, Barabasz, Council, & Spiegel, 2015, p. 6). Essentially, it is an interactive process whereby a series of suggestions are used to alter imagery, sensations, and experiences of a willing participant who actively engages in the process while in a relaxed state.

Hypnosis has been conceptualized as a form of behavioral intervention that includes cognitive restructuring and relaxation. One form, *hypnotic relaxation therapy*, emphasizes a collaborative process to establish goals and provide feedback. Hypnotic suggestions are offered to create a state of relaxation as a means to foster self-confidence and positive expectations in managing and reducing undesired symptoms (Elkins, 2014). *Ericksonian hypnosis* emphasizes indirect suggestions and use of metaphors (Kohen, 2011). *Instantaneous neuronal activation procedure alert hypnosis* was developed on the premise that suggestions may be provided with a focus or divert attention. *Hypnotizability* is a term that characterizes “the degree of responsiveness to hypnotic suggestions administered under standard conditions” (Jain & Kumar, 2016, p. 61). Individuals fall on a continuum in their ability to respond to suggestions during the hypnotic process.

EFFECTS ON MIND AND BODY

Hypnosis has been linked with actual physical changes. For instance, a study that examined the effects of specific suggestions for maintaining immune functioning found fewer illnesses and stable lymphocyte counts of CD8 cytotoxic T cells among medical students during stressful times (e.g., examinations) compared with a hypnotic relaxation-only group and a control group (Gruzelier, Levy, Williams, & Henderson, 2001).

The underlying neural mechanisms of hypnosis in the pediatric population have not been established. However, there have been some findings in adults that, if replicated in children, may explain the mechanisms underlying the effectiveness of hypnosis. Jiang, White, Greicius, Waelde, and Spiegel (2017) analyzed functional magnetic resonance imaging data from healthy adults under four hypnotic conditions and found several changes in neural activity in those who showed high hypnotizability. The dorsal anterior cingulate cortex was observed to have decreased activity, whereas the dorsolateral prefrontal cortex and the insula in the salience network showed increased functionality. These regions correspond to attention, emotionality, and self-awareness.

APPLICATIONS OF HYPNOTIC INTERVENTIONS

Several problems that school personnel may encounter with students in the school setting could potentially be addressed with hypnosis as part of the intervention package. These interventions tend to target three main areas: (a) sensation and perception, (b) cognition and memory, and (c) mood and emotional functioning. However, in many cases, peer-reviewed publications examining hypnosis in the pediatric population have relied primarily on case studies and small group designs.

School-Related Anxiety

The application of hypnosis to treat test anxiety has produced promising but mixed results. In general, the objectives of any treatment including hypnosis would be to educate the student about anxiety, introduce relaxation strategies, aid the student in generating imagery, and make suggestions to facilitate learning and confidence (Perfect & Smith, 2016). In 2009, a meta-analysis showed medium effects of hypnosis in reducing test anxiety (Baker, Ainsworth, Torgerson, & Torgerson, 2009). For instance, a pre–post study in middle school students (Stanton, 1992), a randomized controlled trial (RCT) with high school students (Stanton, 1994), a small sample of college students using a pre–post design with a hypnosis intervention versus control group (Sapp, 1991), and a study with 24 undergraduates found improvements in anxiety related to test performance (Spies, 1979). Zhou and colleagues (2012) found that three hypnosis conditions (i.e., relaxation, live suggestions, recorded suggestions) led to significantly lower test anxiety scores compared with the control group, with hypnotic relaxation showing the greatest gains.

In contrast to the findings that supported the benefit of hypnosis, Dundas, Hagtvet, Wormnes, and Hauge (2013) reported that additional doses of cognitive behavior therapy (CBT) produced significantly greater reductions of test anxiety and buffered against increased anxiety around examinations in young adults compared with the CBT plus hypnosis condition. One possible consideration for the findings was the group format for delivery of the hypnotic intervention; it may be important to individualize hypnotic suggestions. Similarly, another study (Melnick & Russell, 1976) found lower levels of test anxiety scores among a small group assigned to systematic desensitization compared with three other groups (i.e., hypnosis, attention control, and no contact); none of the groups showed improvement in exam performance.

With regard to other types of school-related anxiety, two case studies from the 1990s reported that one elementary school and one middle school student, respectively, benefited from a hypnosis intervention that increased their attendance and eliminated their panic attacks (Brown, Summers, Coffman, & Riddell, 1996; Roberts, 1998). One study (Aviv, 2006) developed a novel application of hypnosis over the telephone scheduled before students' arrival at school. The intervention included relaxation, focus on breathing, and suggestions to bolster confidence, reduce anxiety, and change thinking patterns.

Academic Achievement

Krippner (1970) reviewed preliminary studies and case reports that supported the potential for hypnosis to address studying, motivation, attention, and mastering a new language. When comparing four conditions (i.e., hypnotic relaxation, alert hypnosis, relaxation only, and no intervention), researchers found that both hypnosis conditions contributed to improved test grades (De Vos & Louw, 2006). One study found that final exam grades were significantly higher in undergraduate students randomly assigned to a hypnosis condition in which they received 20-minute sessions in class twice a week compared with a control condition consisting of motivational information presented verbally for the same amount of time (Schreiber & McSweeney, 2004). Similarly, a study with college students found that those who were high in hypnotizability showed improvement on a reading task following four hypnosis sessions in which suggestions were given related to achievement, self-evaluation of performance, others' evaluation of performance, or a combination (Koe & Oldridge, 1988). Hypnosis was used in a college course on learning skills in which students were told they would be learning self-hypnosis over 10 weeks. At the end of the course, students who were high in creative imagination ability experienced significant improvement in grade point average compared with those who scored medium or low (Wark, 1996). In a series of experiments, researchers found that the level of hypnotizability and type of stimuli (abstract, high imagery word pairs) affected recall of information. Accordingly, those high in hypnotizability recalled significantly more high imagery word pairs during hypnotic induction, whereas they performed worse with abstract word pairs deemed to be more challenging (Halsband, 2006).

There have been some null findings as well. A study examined recall of information following the presentation of material during a hypnotic induction with suggestions for relaxation and enhanced performance (Jacobson, Kramer, Tharp, Costa, & Hawley, 2011). Relative to nonhypnosis conditions, students performed worse on a multiple-choice test. It was further found that certain regions of the brain (i.e., prefrontal cortex, cerebellum) exhibited greater activation. In a college-level study skills class, Cole (1979) examined changes in reading, writing, and study skills across a hypnosis treatment delivered via audio, a comedy recording treatment plus follow-up suggestions in a non-hypnotic state, and a no audio recording treatment. The data showed that although reading speed significantly improved for those in the hypnosis condition relative to those who listened to the nonhypnosis recordings, changes in other academic areas and study skills did not differ between the groups. Critically, the audio tapes were prerecorded and listened to in a group format, meaning the suggestions were not individualized for each participant.

As with the research with young adults, the evidence on the effectiveness of hypnosis to improve academic performance in children has been mixed. However, a review by Russell (1984) suggested that, in general, positive outcomes have been observed with regard to lessening anxiety and increasing focus, self-esteem, and ability to relax. For instance, a case study of an

11-year-old student with learning difficulties and language impairment showed improvements with regard to the student's self-esteem and motivation for academic work (Hill, 1998). Repeated use of hypnosis techniques to start a class with children who had attentional and impulse control difficulties was tolerated. Improvements in their self-confidence, attention span, and motor activity were noted by observers before and after the sessions began (Illovsky & Fredman, 1976). However, the study lacked a control group and had varying participation in the sessions (two to 38, with a maximum of 55 sessions). In a sample of youth with attention-deficit/hyperactivity disorder (ADHD), a study found proportionally more beta than theta waves after using instantaneous neuronal activation procedure alert hypnosis (Anderson, Barabasz, Barabasz, & Warner, 2000). Improvements in ratings on an ADHD measure accompanied these electroencephalogram changes (Warner, Barabasz, & Barabasz, 2000). Nonetheless, one study failed to show any significant improvement compared with controls at postintervention when examining self-hypnosis in children with learning disabilities (Johnson, Johnson, Olson, & Newman, 1981). Despite null results, the authors proposed that the study supported the feasibility of implementing hypnosis-based interventions with this special population in future studies.

Pain and Medical Symptoms

Hypnosis in the treatment of medical symptoms has been studied with more rigorous methodologies. Techniques used in clinical settings can reduce the impact of pain and distress associated with having chronic medical conditions. Accordingly, some work has capitalized on imaginative hypnosis for children with cancer undergoing chemotherapy, bone marrow aspiration, voiding cystourethrography, lumbar procedures, needle procedures, and emergency room injuries. These children reported experiencing a shorter duration of adverse side effects, including nausea, vomiting, pain, fear, trauma, anxiety, and generalized stress (Birnie et al., 2014; Uman, Chambers, McGrath, & Kisely, 2008).

Gastrointestinal Conditions

A systematic review of the use of hypnosis for the treatment of gastrointestinal disorders (Palsson, 2015) identified 17 RCT studies (three with children) and 18 non-RCTs (two with children). Nearly all of them documented significant improvements for individuals who participated in the hypnosis interventions. Moreover, hypnosis led to comparable improvements to other active treatments such as biofeedback and education, both of which have shown to have a benefit. Specifically, the RCTs (Gulewitsch, Müller, Hautzinger, & Schlarb, 2013; van Tilburg et al., 2009; Vlieger, Menko-Frankenhuis, Wolfkamp, Tromp, & Benninga, 2007) and a case study report (Anbar, 2001) demonstrated decreases in self-reported pain frequency and intensity.

Headaches

Self-hypnosis techniques were shown to be beneficial in a pediatric population with migraine headaches above and beyond medication and placebo conditions by reducing the frequency of headaches experienced (Olness, MacDonald, & Uden, 1987). Kohen (2011) presented case studies of adolescents who experienced recurring headaches, showing the benefit of empowering the adolescent to engage in the practice of self-hypnosis through the use of Eriksonian hypnosis. Retrospective chart reviews found that the majority of children who participated in hypnosis interventions experienced less frequent and severe headaches (Anbar & Zoughbi, 2008; Kohen & Zajac, 2007). Kohen (2010) reported findings from a survey of children and young adults who had previously participated in treatment using hypnosis to resolve their headaches. Over half the respondents said that self-hypnosis reduced the severity and duration of headaches. One third reported that self-hypnosis reduced the chance of headache onset and alleviated the headache quicker than pharmacological intervention.

COMPONENTS OF HYPNOSIS

Interventions using hypnosis as the primary approach or as an adjunct vary widely in their content and structure. However, a hypnotic relaxation induction itself often has key components with the goal of modifying multiple senses and fostering a relaxed state of wakefulness.

Focusing Attention

The induction often begins with the individual positioned comfortably and being instructed to concentrate on a fixed object or marking on a wall.

Suggestions for Relaxation

The professional provides suggestions for the individual to experience a relaxed state through his or her whole body. This aspect involves instructing the individual to engage in controlled breathing while also overtly thinking about relaxing and letting go (Porter, 1978). Mahler (2015) further noted that “children love to float on clouds of different colors, while inhaling fresh and pure air with a specific perfume, tasting small pieces of the cotton candy with healing or re-enforcing properties” (p. 123).

Eyelid Closure

The individual is instructed to close his or her eyes. An example script may include the following:

Put your feet flat on the floor. Lean back comfortably. Look at the dot on the wall. . . . Look at it. As you are looking at the dot on the wall, your eyelids are

getting heavy. . . . They are getting heavier and heavier. Your eyelids are getting very heavy, and you feel like closing them. Look at the dot on the wall . . . look at it . . . look at it. . . . Your eyelids are getting heavier and heavier. You feel like closing them. Now close your eyes. You are getting more and more relaxed. (Illovsky & Fredman, 1976, p. 90)

Fading of the Generalized Reality Orientation

The generalized reality orientation is an individual's focus on his or her inner experiences and reduced awareness of external stimulation. A suggestion might include the following:

As you become aware of a greater degree of relaxation, you may notice other sensations that begin to occur. Your breathing may become a little slower or deeper, your heart rate may become a little slower, and you may notice a heaviness or floating feeling. (Elkins, 2014, p. 38)

Deepening Suggestions

This is often done by the clinician counting down or prompting the individual to move down stairs or a walkway. The following example is from the treatment of a child with recurrent headaches:

You are on the 10th floor in an elevator and every floor that you passed, going deeper and deeper in a deeper state of hypnosis as you do with each breath you exhale. More relaxed. Ten . . . nine . . . eight. Head, neck, and shoulders relax. Shoulders slumping. Arms beginning to feel heavy. Eight—breathing each time you exhale, relaxing more. Seven. Elevator going down past the floors. Seven. Six. Five. Halfway there. Twice as relaxed. Four. That wave of relaxation spreading down to your legs. Feet beginning to feel heavy. Three. Two. All the way down now to one. Any tension that remains can be released. (Perfect & Elkins, 2014, p. 260)

Mental Imagery

Mental imagery can be used to visualize relaxing or comfortable scenarios to facilitate relaxation and calmness. However, it can also be used to stimulate the individual to imagine him- or herself in the problematic situation. Accordingly, Yu (2006) guided her clients to imagine the conditions that trigger their anxieties by prompting them to verbalize situations that increased their worries and visualize themselves in the situations. Such imagery will depend on the nature of the presenting problem as well as the students' preferences. Some youth are more imaginative than others (Mahler, 2015). Porter (1978) proposed alternatives for individuals who are not able to generate imagery, such as pretending their mind is a TV screen with the scene playing or "feeling as if" rather than directly imagining (p. 67).

Alerting

Toward the end of a hypnotic induction, the professional provides suggestions for alerting, always permitting the individual time to transition out of

the hypnotic state. This could be achieved by stating something such as “Alerting now as I count from three to one. Relaxed, three, becoming consciously alert. Two, more alert. One, alert, relaxed, and feeling good and normal in every way” (Perfect & Elkins, 2014, p. 262).

Posthypnotic Suggestion

Before the individual comes out of the induction, the professional incorporates suggestions about the resolution of the problem and the benefit of the daily practice of self-hypnosis. For example, in her case study using hypnosis to treat test anxiety, Yu (2006) made a posthypnotic suggestion for her clients to have “a sharp and clear mind as well as natural and efficient performance” (p. 77). Another example was presented by Krippner (1990): “When you are studying this evening, you will find that your concentration is so intense that you will be interested in nothing but your [e.g., Mathematics] homework” (p. 439).

Goal Setting

Elkins (2014) noted that setting a goal for the session and immediately after was an important aspect of hypnotic relaxation. Perfect and Smith (2016) offered an example of a suggestion targeting test anxiety, “You have the goal of feeling less anxious during tests. . . . And today, finding a place where you are comfortable . . . safe and calm . . . and as you go to this place . . .” (p. 46). The clinician would then proceed to give some suggestions to relax, imagine doing well on the test, or successfully reduce anxiety.

Feedback

Feedback can be used while the individual is in a hypnotic state to provide verbal recognition of the progress or acceptance and willingness to change. Lyons (2015) offered a suggestion for feedback: “Now you’ve taken some important steps . . . like asking for advice” (p. 31).

Self-Hypnosis

Self-hypnosis is involved in almost all forms of hypnosis because the individual allows themselves to be involved in the process. However, as described in some of the aforementioned studies, self-hypnosis generally includes an individual independently initiating and engaging in an induction (i.e., eye closure, imagination of positive scenery), intensification (i.e., multisensory suggestions, progressive muscle relaxation), self-monitoring, and generalization. The objective is for individuals to autonomously complete an induction at their own pace, location, and time (Kohen, 2011). Encouragement to practice self-hypnosis could be used during a hypnotic suggestion. The following is one example:

When you practice this at home it will get easier and easier because you want it to, and because everyone knows the more you practice or rehearse something, the better it gets and the sooner it gets that way because you deserve to feel better. When you practice, if there is no headache, then have an imaginary medium headache, don't have a real one . . . but have an imaginary one so that you can practice lowering it . . . notice that every time you practice it gets easier and easier and better and better and the good feelings last longer and longer. (Kohen, 2011, p. 39)

LIMITATIONS

Perhaps the greatest limitation to using hypnosis with children is the difficulty in achieving a hypnotic state. However, children are more responsive to the intervention compared with adults, especially between the ages of 7 and 14 (Wood & Bioy, 2008). Complications may occur when hypnosis is provided by an untrained individual who may provide unhelpful suggestions, make individuals feel like they do not have control over the session, or cause more distress than improvement. Individuals may experience mild short-term physical side effects including fatigue, dizziness, nausea, and feelings of confusion or anxiety (Rogovik & Goldman, 2007). In addition, there is a lack of research examining the utility of hypnosis in school settings. Without this information, it is difficult to determine how readily hypnosis would be accepted, how easily it could be used, and how it fits with a tiered service delivery model.

IMPLEMENTING HYPNOSIS WITHIN THE SCHOOL SETTING THROUGH A TIERED DELIVERY MODEL

In general, hypnosis is conducted on an individualized basis. It has been used most often within clinical or hospital settings. However, other mind-based interventions have been gaining in popularity and acceptability for use within a school setting. For example, Felver, Doerner, Jones, Kaye, and Merrell (2013) proposed a three-tier model of service delivery for mindfulness within a school setting. The same premise could apply to hypnosis. At the Tier 1 level (universal), the basic components of hypnotic interventions could be integrated into a school-wide curriculum. The school day could start with a short exercise in encouragement or aimed at relaxation. Considerations would include that treatment would not be individualized at this tier, which may reduce effectiveness, and the relaxation and affirmation components are just two elements of a hypnotic intervention. Nonetheless, the system-wide application of hypnosis principles has the potential to promote self-confidence, improve focus, and reduce stress.

At the Tier 2 level, students identified as having problems, such as test anxiety, could be targeted for small group instruction that incorporates hypnosis practices. For example, students could work with the school psychologist or counselor on a weekly basis practicing hypnosis exercises to reduce anxiety

about taking exams, promote relaxation in high-stress testing situations, and encourage students to put forth their best effort when taking tests. Hypnosis could also be used for athletic teams to enhance performance and bolster team confidence. In addition, the school nurse could potentially offer hypnosis interventions for students presenting with abdominal pain, headaches, or medical needs that involve pain. Because there are varying levels of hypnotizability, not all students would experience the same effects. This may not be suitable for all students, depending on their vulnerabilities. However, self-hypnosis practiced between sessions may augment the group-based experiences.

Finally, Tier 3 involves individualized intervention, which is the typical modality in which hypnosis is delivered. This type of intervention may involve individual sessions for a student in need of more intensive intervention. Hypnosis may be used as an adjunct to accompany other accommodations. If a hypnotic intervention is going to work for someone, that typically occurs within a few sessions. The goal would also be to promote self-hypnosis and independent practice in a safe and appropriate manner. Many of the interventions discussed previously could be adapted for use in a school setting at this level. As with all interventions conducted in a school setting, if it becomes clear that the student needs a higher level of care, a referral for outside treatment should be made.

At each tier, assessment tools could be used to assess responsiveness to the intervention and to track progress toward achieving outcomes. At the universal level, brief measures of symptom distress that are priorities to the school could be administered to track changes. At the Tier 2 and 3 levels, assessments could be administered to determine susceptibility to hypnosis and conclude whether small or individual group instruction would be beneficial. Data could also be collected throughout the intervention and used to track progress toward treatment goals and for program evaluation purposes.

SPECIAL CONSIDERATIONS

Before using hypnosis, Wood and Bioy (2008) suggested two primary prerequisites: (a) a strong therapeutic relationship with the client and (b) modifications that incorporate developmental and preferential considerations of the client. As with any intervention, school psychologists should follow both the *Ethical Principles of Psychologists and Code of Conduct* by the APA (2017) and the *Principles for Professional Ethics* by the National Association of School Psychologists (NASP; 2010). Particularly relevant to hypnosis are ethical standards related to competency and informed consent and assent. With regard to competency, any school-based practitioner of hypnotic intervention would require training and potentially certification or licensure. Per the recommendation of the ASCH (2019a), any professional who intends to use hypnosis should have an accredited graduate degree in a health care field in

addition to hypnosis-specific training and supervision. This could prove difficult depending on the staffing at schools and credentials of school personnel (e.g., aids, school nurses). Additional considerations when offering hypnosis in a school setting include obtaining assent from the student and consent from their parent. Through the consent process, the student and parent should be made fully aware that the intervention includes hypnosis practices and that their consent can be withdrawn at any point. The practitioner should also provide an appropriate explanation of what the intervention will entail and ensure that the use of hypnosis is consistent with the student's goals and best interests (APA, 2017). It is also necessary to provide information and support to ensure students with disabilities understand and can assent to the intervention.

A final consideration for school-based hypnosis is the importance of addressing the risks and benefits of the intervention with both students and parents. There have been minimal negative effects when hypnosis is used in a health care setting; however, it is still necessary to provide explanations of any potential risks, such as confusion between experiences during hypnosis and actual memories (Elkins, 2016).

SCHOOL-BASED CASE EXAMPLE

One example of a child who may benefit from hypnosis to address symptoms in a school setting might be for headaches. Nathan is a 15-year-old boy attending the 10th grade. He reported having severe headaches that are bilateral, often brought on by stressful situations, but sometimes without apparent triggers. Neurological testing did not reveal any organic cause, though blood pressure was sometimes more elevated during these episodes. If Nathan experienced a headache in school, he would put his head on his desk until the pain was so severe that he would go to the school nurse. If he was sent home for a headache, he would often miss school the next day and remain in bed for most of the day. He performed fairly well in school, though his grades were lower on exams that came after he had missed some class periods. He also had to make up tests that he missed when he had a headache and when he missed school. Most teachers were understanding; however, a few teachers gave him a difficult time and occasionally refused to allow him to make up an assignment.

Nathan is eligible for a 504 plan because he has "a physical or mental impairment that substantially limits one or more major life activities" (Americans With Disabilities Act of 1990, Sec. 12102). The 504 plan should be able to provide accommodations such as allowing him to make up tests or assignments missed due to the headaches, providing him work and supports when he returns to school and stress management training given that his headache onset was exacerbated by stress. Assessment of levels of stress could be ascertained on a basic Likert scale. Headache pain severity, intensity, and

frequency should be assessed through a daily log. The school-based professional should review the headache diary and discuss known stressors. Hypnosis as part of the stress management would begin with the basic focusing technique. Nathan would typically be asked to sit in a comfortable chair in a location that allows for confidentiality and would not be interrupted. The professional would begin by providing instructions to focus on a spot on the wall and to continue to stare at it (focusing attention). The professional might then propose he experiences “a wave of relaxation spreading from the top of your head to the bottom of your feet, feeling so relaxed.” The professional would notice Nathan’s eyelids becoming heavier and encourage him to close his eyes. Deepening suggestions such as the script presented would follow. The imagery would focus on the individual noticing when a headache is coming, contrasting visualization of a calm and relaxing scenario of interest to the student, and thinking of a word or cue that would help the headache disappear. Goal setting and feedback could also be incorporated. A post-hypnotic suggestion might be the following:

When you notice that a headache is beginning, even if it is just starting, you have a way to control the headache by thinking the word “relax” and creating a feeling of relaxation across your forehead and back of head. (Perfect & Elkins, 2014)

Nathan would be encouraged to use self-hypnosis on a daily basis and instructed to continue to maintain the log to track changes in the frequency, intensity, and duration of headaches.

CONCLUSION

According to the literature, hypnosis to treat pain-related conditions, including those that might be encountered in the school setting, such as abdominal pain, headaches, and the use of needles for treatment (e.g., diabetes), has strong scientific support. Nonetheless, the studies were conducted in clinical settings and, therefore, have to be examined in the context of how symptoms manifest in schools. Further, although some support exists for the use of hypnosis to reduce test anxiety, increase confidence in performance, and improve achievement, the inconsistent findings and lack of controlled studies make for a less convincing case. Although hypnosis has often been acknowledged as a stress reduction technique, studies have not yet systematically examined hypnosis to treat internalizing symptoms in youth. Thus, school-based practitioners would most likely have to rely on a single case design approach to assess the efficacy of hypnosis with a particular student.

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19

Emotional Freedom Techniques

Stress and Anxiety Management for Students and Staff in School Settings

Amy H. Gaesser

Emotional Freedom Techniques (EFT), more commonly known as *tapping*, is an emerging, research-based intervention that has been found to be an effective stress and anxiety management tool for students and school personnel. EFT uses cognitive behavior therapy techniques, such as awareness building, imaginal exposure, reframing of interpretation, and systematic desensitization, while teaching the individual to self-stimulate protocol-identified acupoints (i.e., acupuncture points; Craig, 2011; Feinstein, 2004). Guided by a school counselor, psychologist, or social worker formally trained in EFT, students talk about their stress and anxiety. As they focus on the stressor and develop an awareness of their body's stress cues (e.g., increased sweating, clenched jaw, racing thoughts, difficulty breathing, pressure in the chest), the counselor teaches them to self-stimulate the EFT acupoints by tapping on them. Concurrently, the counselor assists the students in positively reframing negative self-talk associated with the stressor as they continue to tap. The use of EFT with children and adolescents is relatively new, and therefore, research on its effectiveness is limited. Within the last decade, initial results have indicated that EFT assists students in reducing anxiety (Gaesser & Karan, 2017; Sezgin & Özcan, 2009) and the fear of failure (Stapleton et al., 2017) and in

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improving self-esteem and compassion (Stapleton et al., 2016) within a few sessions. This chapter examines relevant EFT research and the use of EFT with school-age children and adolescents. In addition, the importance of formal training in EFT for school practitioners and ethical considerations are discussed.

ORIGINS OF EMOTIONAL FREEDOM TECHNIQUES

The integration of acupoint stimulation with traditional counseling modalities began with American psychologist Dr. Roger Callahan. Dr. Callahan found that teaching the client acupoint self-stimulation while that individual was assisted by the therapist to simultaneously use cognitive-behavioral techniques such as building awareness of the body's physical anxiety indicators (e.g., clenched jaw, headaches) and positive reframing of negative self-talk, resulted in the significant reduction of both psychosomatic symptoms and the underlying anxiety or fear (e.g., fear of water). His resulting therapeutic work, known as *thought field therapy* (TFT), included unique acupoint sequences or algorithms to treat a number of mental health issues, such as phobias and anxiety symptoms. Each TFT acupoint algorithm was specific to the treatment of one psychological concern, creating a complex modality of treatment (Callahan & Trubo, 2001). In the early 1990s, Gary Craig, a student of Dr. Callahan, extended the ease and use of acupoint stimulation so it could more readily be mastered and used by clients outside of their therapy sessions. Craig combined the acupoints used in TFT into one tapping sequence, which is now known as EFT (Craig, 2011).

EMOTIONAL FREEDOM TECHNIQUES RESEARCH

Since its development, research on the efficacy of EFT in the fields of medicine and psychology has expanded across a wide variety of concerns, including anxiety, depression, posttraumatic stress disorder (PTSD), phobias, pain management, physical ailments, and improved performance in athletics and academics. An overview of key studies related to this chapter follows. Although limited space does not allow for a full review in this chapter of all EFT studies, a comprehensive list and access to additional studies are available at <https://www.eftuniverse.com/research-studies/eft-research>.

Physiological Research

Several studies on EFT have indicated improvement in physiological symptoms. Church, Yount, and Brooks (2012) examined the impact of EFT on the body's biochemistry. Results indicated that using EFT one time significantly reduced cortisol levels. Cortisol is a biochemical marker in the body that indicates the individual's level of stress; as the person's level of stress decreases,

so does the level of cortisol. The use of EFT has also been correlated with a reduction in the frequency and intensity of tension headaches and a lowering of the perceived levels of stress (Bougea et al., 2013). In addition, a study of participants with pulmonary respiratory difficulties found decreases in the frequency and severity of somatic and respiratory symptoms when EFT was incorporated into the treatment (Babamahmoodi et al., 2015).

Psychological Research

The use of EFT has been found to reduce psychological distress significantly (Rowe, 2005). Meta-analyses and systematic reviews have indicated that EFT is an efficacious intervention for anxiety (Gilomen & Lee, 2015), depression (Nelms & Castel, 2016) and PTSD (Sebastian & Nelms, 2017). Results of another meta-analysis investigating EFT as an intervention for anxiety revealed a significantly larger effect for the group using EFT compared with those in the control group, for both adults and children (Clond, 2016). Another randomized study investigated the use of EFT compared with deep breathing relaxation with adults to treat anxiety caused by phobias (Wells, Polglase, Andrews, Carrington, & Baker, 2003). The EFT participants showed a greater significant reduction in fear and heart rates than those in the deep breathing group. Further, a pilot study on EFT as an intervention for youth traumatized by physical abuse suggested that EFT significantly reduced the intensity of their traumatic memories (Church, Piña, Reategui, & Brooks, 2012). These results are encouraging; however, the sample size in this study was small, and therefore the results are not generalizable. Replication with a larger sample is needed to better assess these outcomes.

Research in Schools

Research on the use of EFT in school settings is in its infancy. Initial EFT studies in this area have indicated the positive outcomes of incorporating EFT into daily routines, as well as stress and anxiety management. In one randomized controlled study, Gaesser and Karan (2017) found that EFT significantly reduced anxiety for students in Grades 6 to 12 in fewer sessions than traditional interventions (e.g., muscle relaxation, deep breathing). Additional research has shown that EFT significantly decreased test anxiety (Sezgin & Özcan, 2009) and the fear of failure (Stapleton et al., 2017) and improved self-esteem and compassion (Stapleton et al., 2016) in adolescents. EFT studies have also indicated that some students experienced improvement in specific subject areas. For example, one study demonstrated increases in efficacy related to mathematics (Aremu & Taiwo, 2014). Further, a pilot study with elementary students in remedial reading classes found that daily use of EFT in class was associated with improved reading scores (Hammond & Boltman, 2009).

In a qualitative study currently underway, my colleagues and I investigated kindergarten to Grade 12 teachers and school counselors trained in using EFT for their own stress, as well as in incorporating EFT into the school day and

teaching it to their students. These teachers and counselors received formal training in EFT from a certified EFT trainer. They are using their EFT training in both classroom settings for all their students and in individual sessions for those students with greater needs. The teachers and school counselors are reporting feeling less stressed about school-related tasks, increased focus and productivity, and improved sleep for themselves. Further, among their students, they are observing improved abilities to concentrate and settle, greater ease with transitions, decreased tearful reactions and meltdown episodes, and improved kindness toward self and others. In addition, students in this study have reported greater focus, decreased psychosomatic symptoms (e.g., headaches, stomachaches), greater ease at falling asleep at bedtime, increased enjoyment in school-related activities, decreased anxiety, and increased positive attitudes (e.g., “I can do it!”) toward task completion. Studies on EFT in school settings have indicated that students can learn EFT in small groups, classrooms, or individually, allowing it to be readily used within multiple tiers of delivery. See “Emotional Freedom Techniques Examples in Schools” for a few case examples.

UNDERSTANDING EMOTIONAL FREEDOM TECHNIQUES AND THE STRESS RESPONSE

Studies on acupoint stimulation and EFT have suggested that EFT can effectively provide a more rapid calming of the stress response. A review of acupoint stimulation studies has indicated that EFT significantly reduced or eliminated anxiety symptoms long term with fewer required sessions than traditional treatments (Feinstein, 2012). Stimulation of the identified acupoints has been linked to regulation of activity in the limbic system (Dhond, Kettner, & Napadow, 2007; Fang et al., 2009; Hui et al., 2000), the part of the brain that helps control basic emotions and our stress responses. Further, one electroencephalogram (EEG) study on the use of acupoint stimulation during counseling found that the neural pathways associated with fear memories calmed more quickly when tapping on the acupoints versus using therapeutic talk alone (Harper, 2012).

When working with children and adolescents, finding anxiety management tools that can more rapidly calm the stress response can be helpful for several reasons. When stressed or anxious, the area of the brain responsible for survival (i.e., the limbic system) takes over. This response shuts down the parts of the brain and body not needed for survival and instead sends its resources to those components used to fight or flee (e.g., the large muscles and heart that are needed to run). This reaction temporarily bypasses the prefrontal cortex (Sapolsky, 2003). The prefrontal cortex is the center of reasoning and problem-solving abilities, allowing one to accurately comprehend situations and put experiences into words. The prefrontal cortex is also significantly

involved with executive functions, such as emotional regulation, planning and sequencing events, long-term memory storage, and inhibition of inappropriate social and emotional behaviors (Bishop, 2007). When anxious, children or adolescents may have difficulty making plans, prioritizing tasks, committing information to long-term memory, controlling their emotional reactions, or expressing their thoughts or feelings related to their experiences. What may appear as a lack of motivation, cooperation or self-discipline could instead be the result of the child's unmanaged anxiety.

Therefore, for anxiety management techniques to be effective, this physiological stress response must be calmed so that the areas of the brain involved in cognitive thought and information processing can be reactivated (Sapolsky, 2004). This is why trying to reason with a highly anxious or agitated child is often ineffective. When their amygdala and hippocampus are engaged in threat assessment, as well as production and distribution of stress hormones, the child is less able to process information or make decisions. Similarly, the child cannot access the reasoning abilities of their prefrontal cortex nor can they put words to what they are experiencing because those regions of the brain are temporarily offline. Without taking the step to downregulate (i.e., calm) this physiological response, trying to talk through the issue can increase the child's anxiety because it is like hitting replay on their stress response cycle instead of calming it (Banks, 2005). The quicker the physiological stress response can be calmed, the sooner a child will be able to successfully manage the anxiety and reengage in activities related to school. The specific neurological mechanisms related to EFT are not yet clearly understood. However, research results have consistently indicated that EFT reduces symptomatology related to an overstimulated stress response (Feinstein, 2004, 2012). A recent pilot functional magnetic resonance imaging (fMRI) study has suggested that EFT may decrease stress response activation in the limbic region of the brain, the area responsible for regulating our emotions and stress response (Stapleton et al., 2019). An additional fMRI study is underway to identify the specific mechanisms in the brain involved when the EFT acupoints are stimulated. Additional EEG and fMRI studies are also recommended.

IMPLEMENTING EMOTIONAL FREEDOM TECHNIQUES IN SCHOOL SETTINGS

EFT can be used in school settings in two ways. First, it can be used as a management tool to more easily address daily stressors, such as coping with school work or regular transitions throughout the day. In addition, with advanced training in EFT, qualified school mental health personnel (i.e., school counselors, psychologists, social workers) can assist students with addressing more serious mental health needs that fall within their scope of practice (e.g., dealing with school-related anxiety or sadness related to parental separation).

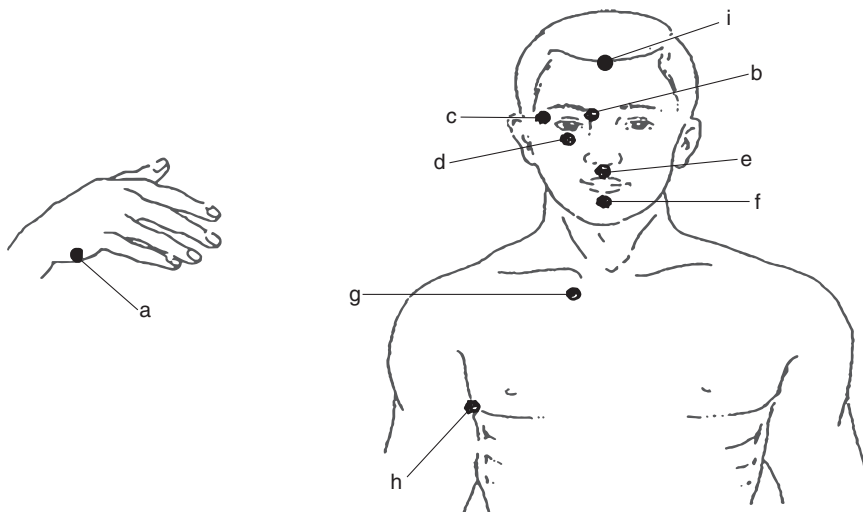
Emotional Freedom Techniques For General Stress Management

Before implementing EFT with their students, school personnel participate in EFT training specifically designed for school settings. This training takes approximately three hours to complete and is facilitated by a qualified EFT trainer. Following this training and before teaching EFT to their students, it is recommended that those being trained then use EFT daily for their own stress management to become familiar with and master the protocol. For example, the newly trained teachers and counselors choose a consistent time of day, such as just before leaving for work, right before the children arrive in the classroom for the day, or before getting into bed at night, to practice tapping through the EFT acupoints. They follow the EFT protocol presented next while concentrating on their concern along with a positive refocusing about the situation or themselves. Teachers and school counselors have reported that it is most beneficial to use EFT themselves for 2 to 4 weeks to become comfortable with the techniques, gain mastery and confidence in using them, and recognize the benefits for themselves.

Emotional Freedom Techniques Protocol

Teaching the EFT protocol for general stress management to students involves the following steps:

1. First, the counselor provides students with an overview of where the nine acupoints used in EFT are located (see Figure 19.1).
2. Next, the counselor assists the students in identifying the feeling (e.g., anxious, frustrated, angry, disappointed, sad, afraid, stressed) or problem and rating how intense it is using a scale of 0 to 10, with 0 being no intensity and 10 being the worst it could be.
3. The counselor then assists the child in developing a set-up phrase, when appropriate. A set-up phrase is often used for adults but not always needed for children. A set-up phrase pairs the feeling or problem with a positive statement that the individual easily identifies with about the situation or themselves. Examples of set-up phrases for children include, "Even though I am worried they won't like my idea, I am excited to put it into action!" or "Even though I don't like to write, I am an awesome kid!" There is no right or wrong wording to use. The most important things to keep in mind are that the words are the child's and specific to the child's experience. The more specific the statement, the better EFT works. It is important to note that the words being used may change as the child taps and uncovers or releases different layers of the feeling or situation. For example, anxiety about taking a math test may change into concern about disappointing the teacher if the child does poorly on the exam. The counselor should trust the child and the words they choose to use.
4. The counselor then demonstrates tapping on the Side of Hand point while repeating the set-up phrase three times and verbally encouraging the child

FIGURE 19.1. EFT Tapping Point Diagram

- a. Side of Hand (extending your hand out with thumb pointed directly up as if to shake someone's hand, this point is located on the fleshy part of the hand on the side directly opposite of the thumb)
- b. Eyebrow (at the inner edge of either eyebrow)
- c. Side of Eye (on the bony area beside either eye)
- d. Under Eye (on the orbital bone under the center of either eye)
- e. Under Nose (halfway between nose and upper lip)
- f. Chin (halfway between lower lip and point of chin)
- g. Collarbone (From the collarbone, find the U-shaped notch [about where a man ties his tie]. From the notch move right or left approximately 2 inches to a small depression, immediately below the collarbone.)
- h. Under Arm (under the arm on either side of the body, halfway between the front and back of the body, usually right on the seam of one's shirt or about 4 inches below either armpit)
- i. Top of Head (at crown of head)

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to tap along on their corresponding acupoint. Note that when tapping throughout the EFT process, it is important to use two to three fingers and a medium to firm pressure to stimulate the acupoint. This process helps the students gently reframe their stress or anxiety with positive aspects of themselves or the situation while simultaneously stimulating the body's neurological responses by tapping.

5. Next, the counselor models for the student tapping on the remaining EFT points using a brief reminder phrase. A reminder phrase, chosen by the child, is a shortened version of the set-up phrase. From the earlier examples, a reminder phrase could be "worrisome class project" or "writing, yuck!" As the counselor models tapping each of his or her own points about seven to 10 times repeating the reminder phrase, the counselor also

encourages the child to tap the child's own corresponding points while repeating the reminder phrase. Again, there is no right or wrong wording to use. The most important aspects are that the words are the child's and specific to the child's experience. These words may change as the child taps and uncovers or releases different layers of the feeling or situation. Trust the child and the words they choose to use throughout the tapping sequence. These remaining EFT points include the following (see Figure 19.1 for a visual aid):

- b. Eyebrow (at the inner edge of either eyebrow),
 - c. Side of Eye (on the bony area beside either eye),
 - d. Under Eye (on the orbital bone under the center of either eye),
 - e. Under Nose (halfway between nose and upper lip),
 - f. Chin (halfway between lower lip and point of chin),
 - g. Collarbone (From the collarbone, find the U-shaped notch [about where a man ties his tie]. From this notch, move right or left approximately 2 inches to a small depression immediately below the collarbone.),
 - h. Under Arm (under the arm on either side of the body, halfway between the front and back of the body, usually right on the seam of one's shirt and about 4 inches below either armpit.), and
 - i. Top of Head (at crown of head).
6. When you have finished the first sequence of tapping, again rate the intensity of the feeling or situation. Continue the tapping sequence in Step 5 until the intensity is zero.

Tips for Implementing

To best support the learning process, it is recommended that for at least 2 weeks the teacher or school counselor initially guide students through consistently practicing EFT on something that is easily managed by them or occurs daily. For example, EFT is often successfully used to help students transition from arriving in the morning to settling into their school day or focusing on their classwork throughout the day. Once the teacher is properly trained, the teacher can facilitate the students' use of EFT in the classroom setting for general classroom tasks, such as settling back into the classroom routine after lunch. In addition, it can be used to assist students in relaxing or building confidence before a test or help them deal with feelings of disappointment, hurt, or anger after an upsetting interaction with a peer. It is beneficial to post a copy of an EFT tapping diagram (see Figure 19.1 for an example) in areas frequented by those learning EFT as a reminder to tap when stressed or anxious. Examples from school personnel and their students of helpful places to post an EFT tapping diagram have included on a white- or blackboard, on a classroom or office door, on the bathroom mirror, on students' and teachers' desks, in an area designated as a quiet or cool-down corner, and on the refrigerator at home.

Emotional Freedom Techniques for Supporting More Serious Concerns

Before school counselors, psychologists, and/or social workers incorporate EFT into their mental health work with students, it is important that they receive advanced training in EFT. EFT International (<https://eftinternational.org>) can assist those interested in advanced training with identifying qualified trainers who are also licensed mental health providers in their area. All school mental health personnel are reminded to keep the focus of their work with students within the scope of their professional practice. Examples of appropriate content these individuals can assist students to use EFT include feelings related to parental separation or divorce, losing a pet or loved one, being bullied, strengthening one's ability to self-advocate, and working through school-related anxieties.

Supplemental Materials

To assist younger children with learning the EFT acupoints and protocol, several storybooks are currently available in which the characters demonstrate tapping on the EFT acupoints while their emotions and thoughts are discussed (e.g., *Gorilla Thumps and Bear Hugs* by Alex Ortner [2016] and *Be the Boss of Your Feelings: Emotional Freedom Techniques for Kids* [2007] and *Be the Boss of Your Thoughts: A Guide to Reduce Anxiety and Lower Stress* [2013] both by Jan Yordy). Some resources for older students include *EFT Emotional Freedom Techniques for Teens* by Peta Stapleton (2017) and *The Tapping Solution for Teenage Girls: How to Stop Freaking Out & Keep Being Awesome* by Christine Wheeler (2016).

ETHICAL CONSIDERATIONS WHEN USING EMOTIONAL FREEDOM TECHNIQUES

Several important ethical considerations related to using EFT in school settings should be considered. First, professionals incorporating EFT into their interventions have to be formally trained by qualified personnel. In addition, those trained have to make sure they are staying within their professional boundaries when deciding which issues to address and how best to apply EFT. The information presented in this chapter is meant to assist teachers and school mental health professionals with understanding how EFT can help address typical stress and anxiety experienced by themselves and their students within the school day. If school counselors, psychologists, and social workers wish to incorporate EFT into more advanced work with their students, formal training in EFT is needed. As is true with any professional training, it is important to identify reputable professional organizations with a strong history of teaching the intervention to fidelity. For advanced training in EFT, EFT International is one such organization. In addition, it is helpful to stay

current on the emerging use of EFT in the field. The Association for Comprehensive Energy Psychology (see <http://www.energypsych.org>), EFT Universe (see <http://www.eftuniverse.com>), and The Science of Tapping (see <https://thescienceoftapping.org>) are exemplary resources to help individuals stay updated on the latest developments related to EFT research and its ethical application.

EMOTIONAL FREEDOM TECHNIQUES CASE EXAMPLES IN SCHOOL SETTINGS

As the examples in this section illustrate, students, teachers, and school counselors have successfully used EFT in school settings and have experienced benefits outside of school. EFT can be taught in a variety of settings within schools, including classrooms, small groups, and individually. An example of how EFT has been implemented at each level—elementary, middle, and high school—is provided in the following sections. These examples come from the study by Gaesser and Karan (2017) and studies currently underway (Gaesser, 2018). Students in these studies said that using EFT effectively reduced anxiety related to being in crowds, fear of failure and performing, generalized worry, and their physical symptoms of anxiety (e.g., headaches, stomachaches, rapid breathing). In addition, they reported that incorporating EFT as a daily tool helped them concentrate, stay focused while completing homework, fall asleep at bedtime, and feel more confident approaching tasks and in social situations. Trained school mental health personnel (i.e., school counselors, school psychologists, social workers) were involved in teaching students EFT, in addition to acting as resources to support teachers using EFT in their daily classrooms. Pseudonyms have replaced real names.

High School: Mastering Midterms and Competition With Greater Ease

At the midpoint of their school year, a group of students from a highly competitive high school began learning EFT from trained graduate counseling, social work, and school psychology students. The high school students were experiencing high levels of stress due to impending midterm exams and anxiously awaiting college acceptance decisions from premier colleges of their choice. Many of these students reported difficulty sleeping and concentrating on tasks, increased moodiness, and psychosomatic symptoms such as stomachaches and headaches. Each student received three individual 1-hour meetings to learn and then master their use of EFT. At the first meeting, the students were taught the EFT tapping protocol by an assigned trained counseling, social work, or school psychology graduate student. In the following second and third meetings, they were assisted in refining its use to best meet their needs. As these students began to incorporate EFT into their daily routines, they

reported greater ease with approaching and completing schoolwork and projects, as well as increased and maintained ability to focus. In addition, they found that they were able to fall asleep more quickly and remain asleep throughout the night, and they reported that their time spent with friends was more enjoyable because they were less worried. Several students also felt that it enhanced their ability to perform at sporting events and music competitions.

Middle School: From Isolation to Belonging

Bethany was a shy, bright child who loved music. She excelled at playing the clarinet and had been eager to join the school band. An avid reader, Bethany also enjoyed her courses and always strove to do her best in school. During middle school, Bethany struggled with an increasing fear of being in crowds. During sixth grade, it began as a generalized worry that something would happen. She was able to manage her concern by focusing on her lessons in class and playing her music in band. By seventh grade, her anxiety had begun to impact her ability to function in school. She was experiencing stomach-aches and discomfort when in the cafeteria for lunch. She increasingly had difficulty focusing in her classes and band due to headaches and stomach-aches. By midpoint in her seventh-grade year, Bethany was having several panic attacks weekly when in crowded areas, such as the hallway and cafeteria. In addition, she was having significant difficulty getting through her band performances due to her elevated anxiety. Bethany also began to have difficulty sleeping and started to miss school a day or two each week. Bethany's school counselor, Ms. Morehouse, had been trained in EFT by a certified EFT trainer. She met with Bethany to teach her EFT as a downregulation strategy to use when she felt an anxiety attack beginning. To begin, Ms. Morehouse taught Bethany the location of the EFT acupoints and had her practice tapping on them before she went to sleep at night and before coming to school in the morning using the EFT protocol (see the Emotional Freedom Techniques Protocol section of this chapter for these steps).

At their next meeting, Bethany reported sleeping better. During the next week, Ms. Morehouse encouraged Bethany to use EFT during the school day when she began to experience her body's stress cues, which included difficulty breathing, a racing heart rate, and sweaty palms. By their third meeting, Bethany stated she was able to think more clearly when anxious and that she was experiencing her panic attacks less frequently. Bethany reported that she continued to use EFT regularly during times of transition, before doing homework, and before band performances. By the end of her seventh-grade year, Bethany's anxiety had diminished, and she felt increased enjoyment of both school and band. On follow-up at the end of her eighth-grade year, Bethany was regularly attending school, excelling academically and happily eating in the cafeteria again with her friends. In addition, Bethany had successfully auditioned for and was performing with the high school marching

band. Ms. Morehouse reported that Bethany had needed little additional intervention from her for anxiety management beyond their initial three sessions to teach Bethany EFT and help her refine its use.

Elementary: Renewed Hope—One Teacher’s Experience of Emotional Freedom Techniques

Like many teachers, Ms. Martin was stressed trying to meet the increasing demands of standardized testing and curricula when she joined a training session designed to assist teachers in learning EFT for their own use and then teach it to their students. The training included a 3-hour initial session to learn EFT and several follow-up meetings to refine its use for herself and to assist her with implementing it in her classroom. A seasoned teacher with a deep passion for her work and commitment to her students, she was significantly discouraged and nearing burnout as she struggled to meet the needs of her larger-than-usual kindergarten class. Many of her students had difficulty with basic self-regulation due to behaviors and emotions resulting from significant difficulties experienced outside of school. Ms. Martin spent much of her day drying some students’ tears, managing the outbursts of others, and in general trying to motivate students to engage in activities. As instructed during her training in EFT, Ms. Martin became comfortable using EFT first on herself by using it daily at one or two consistent times during her day. She did this for at least 1 month before introducing it to her students. During this time, she reported a decrease in the tension she was feeling and greater ease and increased focus while moving through the tasks in her day and falling asleep more easily at night. In addition, Ms. Martin reported that she felt taking the time to master using EFT for herself was critical to her then being able to teach it effectively to her students.

She began her students’ EFT learning process by using a stuffed bear to demonstrate tapping on the EFT points and the EFT storybook *Gorilla Thumps and Bear Hugs* (Ortner, 2016) to help students recognize and discuss when they might want to use EFT for their fears, frustrations, and disappointments. Simultaneously, she began using EFT at consistent times in the day to help students transition and settle. These times included first arriving to class in the morning, returning from lunch, anytime the class had to line up for an activity, and while walking through the halls. Ms. Martin later reported that this consistency was critical in helping her students master EFT and being able to later use it effectively during more stressful times. In addition, she found that it brought a reassuring sense of calm for the children throughout the day. As her students became accustomed to EFT, it was easier to then use it at other times during their school day when they were feeling increased frustration or anxiety, such as focusing on completing challenging schoolwork, during testing, or in moments when learning to share was hard. “We should tap on that” was a phrase frequently uttered by children as they recognized when they or their peers needed

something to help them deal with frustration or settle into a task. As a result of using EFT regularly in her class, Ms. Martin reported a significant decrease in her students' outbursts, greater engagement, improvements in overall task completion, and increases in their ability to transition and maintain focused attention. In addition, Ms. Martin personally found a renewed sense of positive enjoyment in her work and spent more time in creative activities in the classroom.

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TARGETING SPECIFIC PROBLEMS AND POPULATIONS

20

Yoga for the Prevention of Eating Disorders

Kellie S. Talebkhah and Catherine Cook-Cottone

Eating disorders (EDs) are a set of disorders that affect aspects of the physical, mental, and social worlds of those struggling with them. The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) recognizes three major types of EDs, including anorexia nervosa, bulimia nervosa, and binge-eating disorder. According to the *DSM-5*, there are three main features of *anorexia nervosa* (AN): (a) limiting energy intake resulting in extremely low body weight, (b) intense fear of weight gain, and (c) a disturbance in one's experience of their body image. *Bulimia nervosa* (BN) is characterized by (a) episodes of binge eating (eating a significantly large portion of food, in secret, along with feeling a lack of control over eating) and (b) recurring inappropriate compensatory behaviors to prevent weight gain (e.g., use of laxatives, self-induced vomiting, excessive exercise). Both of these behaviors must have been occurring at least once a week for the past 3 months. Finally, *binge-eating disorder* (BED) is characterized as engagement in compulsive bouts of binge eating, paired with marked distress during or after the binge (American Psychiatric Association, 2013). Unlike BN, BED does not involve inappropriate compensatory behaviors. AN, BN, and BED are all similar in that they each involve a disturbance in the experience of one's weight or shape (Cook-Cottone & Lampard, 2017). EDs that are below diagnostic thresholds for AN, BN, or BED can be classified as "other specified feeding or eating disorders" or "unspecified feeding or eating disorders" (American Psychiatric Association, 2013). The *International Classification of*

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Diseases for Mortality and Statistics (11th rev.), lists similar features of AN, BN, and BED (World Health Organization, 2018).

PREVALENCE

Although EDs typically are diagnosed in later adolescence and early adulthood, symptoms have been shown to develop at much earlier ages (Rohde, Stice, & Marti, 2015). Between 1999 and 2006, there was a 119% increase in hospitalizations among children and adolescents presenting with EDs (Agency for Healthcare Research and Quality, 2009). Increases in EDs may be explained by the cultural emphasis on dieting and weight loss in these age groups due to the prevalence of childhood obesity (Haines & Neumark-Sztainer, 2006). In a U.S. national survey of 10,000 adolescents aged 13 to 18, approximately 0.3% met diagnostic criteria for AN, 0.9% met criteria for BN, and 1.6% met criteria for BED (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). Notably, about 5% to 10% of EDs occur in males (Rosen, 2010). These estimates may be lower than in actuality because those with subthreshold EDs and those who failed to report accurately are not accounted for (Cook-Cottone & Vujnovic, 2017). Therefore, a more accurate prevalence rate of EDs among adolescents may be between 0.8% to 4.6% (Stice, Marti, Shaw, & Jaconis, 2009; Swanson et al., 2011). Although the onset of EDs is often in older adolescents (Swanson et al., 2011), some research shows that body weight and shape concerns have been seen in females as young as 6 years old (Smolak, 2011). Similarly, findings show that in elementary-aged females, 40% to 60% reported having weight-related concerns (Smolak, 2011). With body image concerns spanning throughout the formative years of schooling, the school environment can be a place of prevention through the use of evidence-based wellness initiatives, such as yoga and yogic principles, within the daily structure of schools.

ETIOLOGY

It is theorized that ED behavior develops over time as individuals work to negotiate both their internal needs and experiences (i.e., physical, emotional, cognitive) while also meeting the challenges and perceived expectations present in their external world (i.e., family, friends, community, culture; Cook-Cottone, 2006, 2015a; Cook-Cottone & Kane, 2013). This is especially true for school-aged children. Internally, they may feel negative affect, physical changes related to puberty and growth, and substantial cognitive challenges as they move from concrete thinking to more formal or conceptual understanding of the world around them. At the same time, there are many media and cultural messages about how the body should look and feel, that teens and young people should look effortlessly perfect and

happy, and that they should be successful socially as well as academically. ED symptoms may be an attempt to self-regulate in the absence of effective tools and practices (Cook-Cottone, 2015b). Cognitions begin to center on the narrative of food and body control as a pathway to mood regulation and happiness (e.g., “I will be okay when I get to my ideal weight”). Through restriction of food intake, bingeing, purging, and excessive exercise there is an attempt to control the size and shape of the body and as well as to control and/or avoid negative emotions (Cook-Cottone, 2015b). Authentic connection to the body is lost, and any attunement between mind and body is in service of symptoms and maintenance of the disorder (Cook-Cottone, 2015b).

The result is a loss of positive embodiment, which may be one of the primary causes of risk and a key to prevention and intervention (Cook-Cottone, 2015b, 2017). *Embodiment* refers to using the body as a source for emotions, cognitions, and actions (Cook-Cottone, 2015a; Cook-Cottone & Guyker, 2018; Khoury et al., 2017). The body is our sensing, experiencing, and acting system, our interface between our inner and outer worlds, and how we experience the body, perceive it, identify with it, treat it, and move from it is an aggregation of both our internal and external experiences (Cook-Cottone, 2015b). It is theorized that awareness of and connection with the body is prerequisite to and part of embodiment and maintenance of well-being (Cook-Cottone, 2015a, 2015b; Ogden & Fisher, 2015).

YOGA FOR THE PREVENTION OF EATING DISORDERS

Change in the mind–body relationship requires more than a cognitive reframing—it must be lived and experienced (Cook-Cottone, 2015b; 2016; Ogden & Fisher, 2015). This has already been acknowledged in ED research; methods used in ED prevention research have been interactive and are based on a cognitive or behavioral theory to promote behavior and attitude change (Ciao, Loth, & Neumark-Sztainer, 2014). Further, many of the comprehensive prevention programs promote moderate to heavy physical activity (Ciao et al., 2014). However, interactions and physical activity may be qualitatively distinct from physical practices designed to promote embodiment (e.g., yoga; Cook-Cottone, 2015b). Interventions, such as yoga, that facilitate a healthy mind and body integration are being studied for both treatment and prevention of EDs. Yoga is a physical practice that allows for active integration of internal and external experiences (Flynn, 2013). This chapter discusses the evidence for using yoga as an ED prevention method for children and adolescents and outlines the application of yoga within the school environment.

Through yoga, children and adolescents can be taught how to navigate their external lives through accessing their inner selves. To effectively prevent EDs, children and adolescents must learn how to negotiate the stresses and challenges in any given moment without disconnecting from their inner experiences or turning against the body (Cook-Cottone, 2016). Yoga has

ancient roots in the Eastern hemisphere (see Cook-Cottone, 2017, for a brief history of yoga and yoga in schools). Yoga taught in schools today shares the main tenet of connection of the mind and body through the practice of postures (*asanas*), relaxation (*savasana*), meditation (*dhyana*), and breath work (*pranayama*; Cook-Cottone, 2015b, 2017; Serwacki & Cook-Cottone, 2012). These practices work simultaneously, interweaving the physical stretching, strengthening, and relaxation of the muscles through each posture with mindful breathing and relaxation exercises and work with sensations, feelings, and thoughts through meditation practice (Scime & Cook-Cottone, 2008). Through practice, the body, through the mind-body connection, becomes a resource for self-regulation and calming (Scime & Cook-Cottone, 2008).

Yoga has been gaining ground in research relating to the treatment and prevention of EDs among youth, including minority youth (Carei, Fyfe-Johnson, Breuner, & Brown, 2010; Cook-Cottone, Jones, & Haugli, 2010; Cook-Cottone, Talebkhah, Guyker, & Keddle, 2017). It has been hypothesized that yoga facilitates positive embodiment by encouraging participants to focus on the poses and their breath (i.e., their experiences), rather than having their mind be dominated by food-related thoughts (e.g., judgments; Carei et al., 2010). By moving mindfully into poses, working on stretching, physical balance, and attention to breath, yoga provides opportunities for participants to gain self- and body awareness through direct experience of the body and bodily sensations (Daubenmier, 2005). Theory and emerging research have suggested that positive embodiment through self- and body awareness is a critical step in cultivating resilience to and counteracting symptoms of EDs (Cook-Cottone, 2015a, 2015b; Mahlo & Tiggemann, 2016). Notably, these benefits may be unique to yoga; other forms of exercise have not been shown to have the same psychological and physical effects (Martin, Prichard, Hutchinson, & Wilson, 2013; Prichard & Tiggemann, 2008).

Using yoga for the prevention of EDs is based on the theoretical framework of positive psychology (Cook-Cottone & Lampard, 2017; Steck, Abrams, & Phelps, 2004). Intentionally, positive psychology works by promoting healthy attitudes and positive self-perceptions, rather than emphasizing risk factors and psychoeducation, which has been found to be a weak prevention strategy in schools (Carter, Stewart, Dunn, & Fairburn, 1997; Steck et al., 2004). Positive psychology interventions follow a broaden-and-build framework (Fredrickson, 2013; Garland et al., 2010). The broaden-and-build theory of positive emotions asserts that positive emotions, such as happiness, broaden an individual's awareness and increase the likelihood of the individual experiencing novel, varied, and exploratory thoughts and actions. It is believed that this broadened behavioral experience builds both skills and resources. In yoga, it is not only what you do but also how you do it that makes all the difference. All practices provide a sense of joy, compassion, equanimity, and loving-kindness (i.e., the four immeasurables; Cook-Cottone, 2015b, 2017).

RESEARCH ON YOGA FOR THE PREVENTION OF EATING DISORDERS

Currently, research on yoga for the prevention of EDs is in its nascent stage. However, there are some promising results from studies completed with school-aged populations. One such program is Girls Growing in Wellness and Balance (GGWB). Designed in 2002, it is the only yoga-based program that has been studied extensively in schools as a prevention for EDs (Cook-Cottone & Kane, 2013; McVey, Tweed, & Blackmore, 2007; Yager, Diedrichs, Ricciardelli, & Halliwell, 2013; see Holt & Ricciardelli, 2008, for a review). GGWB focuses on yoga, relaxation, psychoeducation, and interactive activities specific to ED risk factors and correlates (Cook-Cottone, 2017). The program uses the framework of positive psychology, focusing on helping adolescents build skills and strengths for the enhancement of positive embodiment and personal agency (Cook-Cottone & Kane, 2013). This prevention program curriculum includes the yoga teaching tools (e.g., breath work, emotion and body awareness); active practice of yoga; psychoeducational content, cultural media influences (media literacy), and body image concerns; and cognitive dissonance work in which the participants create and disseminate their own healthy-body magazine filled with content that counters media ideals and messages (see GGWB manual; Cook-Cottone & Kane, 2013). The yoga practice allows for active practice of positive embodiment, which is unique to the GGWB program.

First, each of the 14 sessions of the GGWB group follows the same format: yoga practice, interactive and creative engagement in psychoeducational content, journaling, and relaxation or meditation (Cook-Cottone & Kane, 2013). Over the 14 sessions, the GGWB curriculum is organized in three sections: (a) Me, (b) Me in My World, and (c) Me in This Culture. The first section, Me, delivers content on basic coping skills (e.g., breath work), balancing of internal and external demands, mindful eating, identification of emotions, and self-care (Cook-Cottone & Kane, 2013). The second section, Me in My World, addresses interpersonal skills such as assertiveness and setting boundaries. The third section, Me in This Culture, reviews the roles and expectations of women in our culture, media portrayals of women, and personal beliefs about the media. This section also involves the construction of a group magazine portraying health and wellness for women that is later disseminated in a manner that is selected by the participants. Groups often deliver it to the entire grade at school or send it to a publisher that portrays women in a way the group does not identify with (Cook-Cottone & Kane, 2013).

The GGWB has been studied for over a decade. Research has indicated that it lowers ED risk factors and decreases some ED behaviors (Cook-Cottone, Jones, & Haugli, 2010; Cook-Cottone, Talebkhah, et al., 2017; Scime & Cook-Cottone, 2008). In a series of noncontrolled, controlled, and matched-controlled studies, the GGWB prevention program showed decreases in levels of drive for thinness and body dissatisfaction among fifth-grade girls who participated in the program (Cook-Cottone et al., 2017). In a matched-controlled study,

Cook-Cottone et al. (2010) found the results to be stable across race and ethnicity while controlling for body mass index and socioeconomic status. Across studies, there tended to be no significant change in compensatory behaviors (e.g., purging and excessive exercise). This is consistent with other prevention research and is thought to be due to the young age of the participants and low baseline rates of these behaviors (Cook-Cottone et al., 2017; Scime & Cook-Cottone, 2008; Stice & Shaw, 2004).

Other GGWB findings have included increased rates of self-care behaviors found to be associated with body esteem and reduced risk of ED behaviors in community samples (Cook-Cottone et al., 2017). Specifically, Cook-Cottone et al. (2017) showed participation in the GGWB prevention program to be related to significant improvements in self-care behaviors of 5th-grade females compared with controls. Self-care behaviors found to increase in the intervention group compared with controls included significant reports of increased nutrition (e.g., eating three balanced meals a day, taking vitamins), increased ability to take care of one's responsibilities (e.g., completing schoolwork and other housework), and increased ability to be safe with their bodies (e.g., not engaging in self-harm or allowing others to mistreat them; Cook-Cottone et al., 2017). These changes are not unlike those seen in adult yoga programs, where healthy eating is supported in the yoga participants, but not in the controls (Martin et al., 2013).

The field of positive body image has evolved substantially over the past 15 years. Rather than target EDs directly, many professionals are interested in the role body image plays in ED risk and other adolescent issues such as mood, sexual decision making, agency, and assertiveness. Recent findings in a small controlled study suggest that intentionally structured yoga participation may support positive body image among adolescents. Focusing on body image among adolescents, Cox, Ullrich-French, Howe, and Cole (2017) examined the effects of 12 weeks of a pilot yoga-based physical education (PE) curriculum by testing for change in trait body surveillance, physical self-worth, and body appreciation. Innovating the research design, they also examined the relationships among change in body image variables and the role of state mindfulness in predicting state body surveillance during classes. Cox et al. found significant, moderate decreases in trait body surveillance and minimal nonsignificant increases in physical self-worth among those in the yoga-based PE class ($n = 20$; $M_{\text{age}} = 16.45$, 90% female) compared with traditional ($n = 23$; $M_{\text{age}} = 14.52$, 57% female) PE. Interestingly, change in trait body surveillance was inversely related to change in physical self-worth and body appreciation in yoga participants. Further, multilevel modeling analyses revealed that more mindful students also surveyed their body less during class (Cox et al., 2017).

RESEARCH ON YOGA AS A TREATMENT FOR EATING DISORDERS

There is also growing evidence that yoga may be a helpful adjunct in the treatment of EDs (Klein & Cook-Cottone, 2013). Cook-Cottone, Beck, and Kane (2008) found that a yoga-based group helped those in treatment with an

ED show decreased drive for thinness and body dissatisfaction over 6 to 8 weeks. McIver, O'Halloran, and McGartland (2009) randomized 90 women meeting criteria for BED to a yoga or wait-list control group and found that the yoga group showed a self-reported reduction in binge eating and an increase in physical activity compared with controls. In a randomized controlled trial (RCT), Carei et al. (2010) found that when compared with standard care, those who took part in yoga and standard care demonstrated overall greater decreases in ED symptoms from pre- to posttest and decreases in food preoccupation following each yoga session. Pacanowski, Diers, Crosby, and Neumark-Sztainer (2017) conducted an RCT within a residential ED treatment program. Participants were randomized to control or yoga intervention: 1 hour of yoga before dinner for 5 days. Negative affect was assessed pre- and postmeal. Yoga significantly reduced pre-meal negative affect compared with treatment as usual. The effect was attenuated postmeal. Overall, these findings suggest that yoga is safe to be practiced by those struggling with EDs.

LIMITATIONS

Some limitations to yoga as a prevention for EDs have been noted in the literature. In a study of yoga-based ED prevention among college-age women, Mitchell, Mazzeo, Rausch, and Cooke (2007) randomized 93 women to a dissonance intervention, yoga, or a control group. Although outside of the K–12 age range, this study illustrates an important aspect of yoga-based interventions: dosage. In the Mitchell et al. study, the dissonance group was found to have significantly lower scores than the yoga group and the control group on measures of disordered eating, drive for thinness, body dissatisfaction, alexithymia, and anxiety. Further, the yoga group did not differ at post-intervention from the control group on these measures. In a review of research on yoga-based prevention and treatment of EDs, Klein and Cook-Cottone (2013) suggested that the yoga dosage used by Mitchell et al. of 45 minutes per week over 6 weeks was insufficient for change. Cook-Cottone (2013) suggested a frequency of two or more times per week for 60 to 90 minutes (with at least 45 minutes of yoga practice if combined with psychoeducation) and a duration of more than 6 weeks for significant impact. Further, the body of research on yoga interventions has suggested that internalization of the practice as evidenced by home practice and continued practice after completion of the program may also be important (Cook-Cottone, 2013). To date, dosage issues have yet to be studied for yoga-based ED prevention programs. Also, although studies have suggested that yoga may be a helpful adjunct to therapy, much more research is needed to understand how best to align the yoga with treatment at various levels (e.g., inpatient, day treatment, or outpatient). In addition, the appropriate dosage must also be identified to provide the most optimal chance of lowering risk and ensuring recovery.

TIERED DELIVERY MODEL

In the past, ED prevention in the schools used a didactic, psychoeducational framework only, leading to initial drops in ED risk; however, long-term effects were ineffective and, at times, even harmful (Carter et al., 1997). Now it is recommended that prevention methods be theoretically based, focused on decreasing risk and increasing protective factors (Scime & Cook-Cottone, 2008). Aligning all aspects of yoga (e.g., postures, relaxation, meditation, breath work) with the main tenets of positive psychology, namely, positive subjective experiences, individual traits, and focus on personal well-being, meaning, and quality of life (Seligman & Csikszentmihalyi, 2000), the school environment has the capacity to be an environment for ED prevention. Cook-Cottone, Tribble, and Tylka (2013) provided a comprehensive framework for a three-tier prevention intervention in schools in their text *Healthy Eating in Schools: Evidence-Based Intervention to Help Kids Thrive*.

It is important to note that caring for a child with an ED calls for a multi-intervention approach. Although yoga can make a paramount difference in correcting the way children view themselves by assisting in the connection between their internal and external worlds (Klein & Cook-Cottone, 2013), it should not be used as the sole intervention for regaining health and well-being. As outlined in the case study at the end of this chapter, mental health professionals, ED specialists, and medical checkups should be used as well.

Tier 1: Yoga-Based Universal Interventions

The goal in universal prevention for EDs in schools is to cultivate resilience and decrease risk among the entire student body, in hopes of leading to long-lasting resilience against body image issues and weight-related concerns (McVey et al., 2007; Serwacki & Cook-Cottone, 2012). Scime and Cook-Cottone (2008) proposed that universal prevention should occur in elementary schools and early middle school because this is often before body-image and weight-related concerns begin to crystallize. Programs emphasizing healthy eating and physical activity, body acceptance, media literacy, and increased coping and self-care are recommended as efficacious for preventing EDs (Cook-Cottone, 2009; McVey et al., 2007; Yager et al., 2013). Yoga may be offered as a school-wide program, with all students participating as a means of fulfilling the social-emotional learning program within the school district (Cook-Cottone, 2017). Because the practice of yoga is associated with increased body awareness, understanding one's unique body cues such as hunger, satiation, and even moods may improve and become more regulated within these universal sessions. Universal prevention programs include specific class time dedicated to yoga (i.e., yoga classes) both during and after school, as well as yoga mini-sessions, workshops, and breaks during class to help students learn to self-regulate through movement and breath (e.g., movement to get engaged and breath work to calm; Cook-Cottone, 2017). See Cook-Cottone and Douglass's (2017) article, "Yoga Communities and Eating Disorders:

Creating a Safe Space for Positive Embodiment,” for a set of guidelines on how best to use language, interactions, and yoga practices to support positive embodiment.

Aside from the physical practice of yoga, yogic principles could be easily incorporated into the school atmosphere to create a healthy environment for reducing ED risk. For example, appearance-based teasing and conversations about weight loss from school personnel in front of or with students could be suspended under a zero-tolerance policy (Cook-Cottone, Tribole, & Tylka, 2013; Puhl, Neumark-Sztainer, Austin, Luedicke, & King, 2014). This would allow students to foster an attitude of acceptance toward their bodies, rather than an attitude of comparison or desire for change—an important principle in yoga. Similarly, healthy eating habits can be reinforced by offering healthy options for school lunches, along with the integration of nutritional knowledge, coping skills, and self-care behaviors in health and science classes (Cook-Cottone, Tribole, & Tylka, 2013). Proper nutrition and healthy eating are related to the ability to self-regulate, which can be a protective factor against ED risk (Cook-Cottone, Tribole, & Tylka, 2013). Breath work has also been explored in schools, with Schonert-Reichl and Lawlor (2010) examining the feasibility of incorporating a few minutes of attention to the breath in the school day.

Last, yoga practice can also be offered through a set of cognitive guidelines. Cook-Cottone (2017) offered *12 Practices of Embodied Growth and Learning*, which were sourced from the body of literature on yoga and mindfulness in schools. These are embodied, mindful principles that can be adapted in schools as universal and subtle but powerful ways of increasing a child’s ability to recognize, manage, and regulate both internal and external factors. Briefly, the principles are split into three mechanisms of action: (a) mindful embodiment, including principles of worth, breath, awareness, presence, and feeling; (b) embodied self-regulation, including principles of inquiry, choice, self-determination, and sustainability; and (c) mindful growth, including principles of compassion, kindness, and possibility (see Exhibit 20.1; Cook-Cottone, 2017). By reminding students of these principles, teachers and other school personnel can instill elements of the yogic tradition into the classroom and within the student. A complete, comprehensive review of these principles and specifics on how to apply them in the classroom can be found in *Mindfulness and Yoga in Schools* (Cook-Cottone, 2017).

Tier 2: Yoga-Based, Target Interventions

Students who continue to show risk of EDs, such as diet-related behaviors (e.g., weight loss, excessive exercise, dieting, and/or purging), body image distress and appearance-focused behaviors (e.g., monitoring body parts by constantly touching or looking at stomach, thighs, arms, chin, etc., or comparing self with others), should be targeted for Tier 2 intervention to correct budding ED attitudes as early, quickly, and effectively as possible. Referrals of such students can come from multiple sources, such as teachers, other school

EXHIBIT 20.1**The 12 Principles for Embodied Growth and Learning****Mindful embodiment**

- Worth: I am worth the effort.
- Breath: My breath is my most powerful tool.
- Awareness: I am mindfully aware.
- Presence: I work toward presence in my physical body.
- Feeling: I feel my emotions to grow and learn.

Embodied self-regulation

- Inquiry: I ask questions about my physical experiences, feelings, and thoughts.
- Choice: I choose my focus and actions.
- Self-determination: I do the work.
- Sustainability: I find balance between effort and rest.

Mindful growth

- Compassion: I honor efforts to grow and learn.
- Kindness: I am kind to myself and others.
- Possibility: I work toward the possibility of effectiveness and growth in my life.

personnel, the school psychologist, and even concerned parents and friends (Cook-Cottone & Lampard, 2017). Students in middle or high school may be particularly at risk because this is the time when ED attitudes and behaviors begin to crystallize and take shape in adolescence (Scime & Cook-Cottone, 2008). Tier 2 programs should be targeted, focused on decreasing ED risk factors and correlates. This should be done in small groups of eight to 12 students who have been referred due to concerns associated with ED risk: dieting, fat talk, exposure to weight-related teasing, body dissatisfaction, thin-ideal internalization, higher body mass, and negative affect (Cook-Cottone, Tribble, & Tylka, 2013). GGWB is an example of an appropriate Tier 2 program.

Tier 3: Indicated Programs and Interventions

Students who require Tier 3 attention for ED prevention have already begun experiencing symptoms of AN, BN, or BED (Cook-Cottone & Vujnovic, 2017). At this point, they require an individualized intervention strategy that matches their particular needs (Stoiber & Gettinger, 2016). This usually requires an interdisciplinary team approach within the school in coordination with medical and psychological professionals. Treatment for EDs is typically conducted using a team approach with a medical doctor, nutritionist, and mental health professional all specializing in the treatment of EDs (Cook-Cottone, Tribble, & Tylka, 2013). Because the best outcomes for clinical levels of EDs occur when interventions are secured early in the onset of a disorder, all schools should have a point person who is comfortable with and knowledgeable about the disorders (Yager & O'Dea, 2005). Along with conducting proper screening

and making appropriate referrals, this person can also be a body positive role model within the school, which research has shown to be crucial in the crystallization of ED attitudes (Yager & O'Dea, 2005).

SPECIAL CONSIDERATIONS

It is most important to remain inclusive in any attempts of incorporating yoga into the schools. Diversity includes race, ethnicity, socioeconomic status, the location and characteristics of the school and neighborhood, ability levels, skills and challenges, sexuality, gender identity, personal history and trauma, religion, body size and shape, family and neighborhood values, family educational backgrounds, and many other variables and qualities (Rechtschaffen, 2014). A common, beautiful phrase about yoga is “Yoga is for every body.” The basic tenets of diversity and inclusion apply, of course, in that all children should be provided a safe space to be heard, valued, and celebrated. Yoga can align with these tenets. Inclusion in all aspects of yoga—postures, breath work, relaxation and meditation—can be adapted for and modified to the individual needs of each student. Remember this, and engage in continuous learning when you feel you need extra training in cultural competence, diversity, and inclusion. For example, Childress and Harper (2015) offered a comprehensive guide for making yoga inclusive and accessible in their book, *Best Practices for Yoga in Schools*. Also, the National Education Association’s (2019) “Diversity Toolkit: Cultural Competence for Educators” can be accessed to further one’s knowledge on addressing diversity within the classroom.

CASE EXAMPLE SHOWING APPLICATION OF THE INTERVENTION

Mattie is a biracial, eighth-grade girl who does well in school, plays the violin, and presents as social and happy. Teachers frequently describe her as a pleasure to have in class and as engaged in positive peer relations. She is normal weight. Her mother, a dental assistant, is a chronic dieter, and her younger sister has always been a picky eater and is below the 25th percentile for weight. Her father, a dentist, is a normal weight and has never been diagnosed with any mental illness. However, his side of the family has a history of depression and substance use. Her middle school does not have a universal yoga program, and Mattie has never practiced yoga. She does not like her body, wishing she was smaller. She also does not like her hair and saves her money from babysitting and chores for hair extensions. She also struggles in PE class and is often chosen last by her peers when they play as teams.

Over the summer, Mattie stayed for 2 weeks with her paternal grandmother, who drinks alcohol daily and is quite critical of people. Each night after she had a few drinks, she told Mattie that Mattie would look so much better if she lost a few pounds. She would also tell Mattie things about her

personal life and Mattie's father's life that were overwhelming for Mattie to hear. Mattie had nowhere to go and did not know how to stop her grandmother. She would sit and listen and wish she were somewhere else. She never told her parents about it because she was afraid they would get upset. It was then that she decided to go on a diet. She began to secretly follow her mom's latest diet plan emphasizing protein and eliminating dairy and carbohydrates. Mattie has been slowly losing weight. At first, it was just one or two pounds a month. However, in December and January, she lost four and five pounds each month and has now lost a total of 13 pounds, a substantial weight loss for someone who is within the normal range. A group of her friends went to the school psychologist, Dr. Cruize, to tell her that they were concerned about Mattie's eating habits.

Dr. Cruize met with Mattie and asked her to take the Eating Attitudes Test (<https://www.eat-26.com>), a widely used standardized self-report measure of symptoms and concerns characteristic of EDs. Mattie's score indicated that she was at risk. The interview revealed that Mattie had been feeling stressed and overwhelmed at school and did not want anyone to know how sad she was feeling. Dr. Cruize referred Mattie to the GGWB group that was beginning the following week as well as to the local ED specialist for further screening and a medical checkup. Ultimately, Mattie was treated by an interdisciplinary team that included a medical doctor, nutritionist, and psychologist who specialized in the treatment of eating disorders. She had weekly appointments with her nutritionist and psychologist and biweekly check-ins with the medical doctor.

Mattie loved learning the breathing skills for self-regulation in group. During each group, they practiced grounding their feet and using their bodies as a resource for calming and focusing. She had never felt so empowered. The yoga helped her to feel the difference between feeling stressed and tensing your muscles and feeling relaxed and softening your muscles. She learned poses and skills for how to strengthen and relax her muscles. During group work, in the section on feeling feelings and then again during the section on setting limits, Mattie wrote in her journal about what had happened the past summer with her grandmother. The group leader encouraged her to talk to the psychologist about these feelings in her next session. Mattie felt as if there was a team of people that cared about her well-being. Her diet became less important to her as her body and feelings shifted from something that she needed to control to resources she could use. She was going to use the tools she learned in yoga group to help her tell her parents that she did not want to stay at her grandmother's alone again and why.

CONCLUSION

EDs are difficult to treat, affecting individuals' relationship with their body and food. Risk factors include a drive for thinness, internalization of the thin ideal, difficulty with negative affect, body mass, and body dissatisfaction.

Embodiment is disrupted as the body becomes an object that is judged, measured, and weighed. Behaviors such as food restriction, overeating, bingeing, purging, and compensatory exercise complicate eating and hydration, creating further dysregulation. Attunement between the mind and body is lost, and those who struggle can no longer effectively take care of their body, respond to emotions, and evaluate and select cognitions and behaviors.

Prevention programs focus on cognitions and integrate interactive curricular content to engage those at risk in activities that create cognitive dissonance related to media ideals, encourage healthy eating behaviors and exercise, and help kids process emotions. However, only yoga-based programs focus specifically on the body and how to engage the body as a resource in self-regulation. Using yoga as a part of a school's three-tier prevention programming can help prevent EDs and support all students in their use of the body as a resource for self-regulation. Further, research has suggested that yoga can also be an effective Tier 2 and 3 intervention for the prevention and treatment of EDs. See Cook-Cottone (2017); Cook-Cottone and Kane (2013); and Cook-Cottone, Tribble, and Tylka (2013) for more resources and how to implement yoga as a prevention intervention in your schools.

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21

Cognitive Behavior Therapy for Children With Emotion Regulation Challenges

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Cognitive behavior therapy (CBT) is a collection of interventions that incorporate a combination of cognitive and behavioral approaches shown to be efficacious in addressing many difficulties experienced during youth (Chambless & Hollon, 1998). CBT has a strong theoretical foundation. A core assumption of CBT is that a person's dysfunctional or negative thinking affects his or her mood, sense of self, behavior, and even physical state (Beck, 2011). For this reason, CBT can be used as a mind-body intervention, a psychologically based intervention that can effect change on one's mind and body functioning.

The ability to effectively manage one's emotions is a highly valued characteristic in schools and broader society (Hannesdottir & Ollendick, 2007). *Emotions* are biologically based responses to a stimulus or situation that help us to appraise situations and rapidly respond to them (Cole, Martin, & Dennis, 2004). Emotions are critical to a child's functioning because they organize and help direct a child's experience and behavior, are central to the relationships the child has with others, and are fundamental to a child's development (Langlois, 2004). Emotions affect and are affected by one's physiological activity (e.g., cardiovascular, cortical and neuroendocrine systems; Cole et al., 2004). Therefore, emotions and physiology are intimately related and can interact to influence one's evaluation of an experience and behavioral response. Emotion dysregulation is commonplace among children and adolescents in schools. Unfortunately, when youths' emotions are frequently dysregulated, the negative consequences can be diverse and far reaching.

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In this chapter, we define emotion and emotion regulation and describe the association between emotion regulation and students' mental and physical well-being. We then provide a brief overview of Beck's model of CBT, including empirical support for the use of CBT with youth. Theoretical and empirical support for the application of CBT to help youth with emotional regulation challenges in schools is then discussed. We then discuss the implementation of CBT in a school environment—including training considerations. Next, we describe CBT's application within a multitiered system of support. We end with a case example of a school-based CBT intervention designed to target emotion regulation challenges in youth.

EMOTION AND EMOTION REGULATION IN YOUTH

Learning strategies to effectively and appropriately regulate emotional responses are associated with healthier psychological and social functioning, as well as positive well-being (John & Gross, 2004). A child who can conceal her anger after a perceived slight is more likely to be liked by her peers than a child who lashes out physically, cries, or throws a tantrum. Cole and colleagues (2004) defined *emotions* as a collection of biologically prepared processes that facilitate quick appraisal of stimuli to guide behavior. The appraisal, influenced by learning history, determines emotional valence (i.e., positive or negative), where the strength of the appraisal is thought to determine the duration and magnitude of the emotion (Campos, Frankel, & Camras, 2004; Thompson, 1994). Emotional processes motivate behavior, interact with the environment in a dynamic and fluid manner, are context dependent, and can be performance enhancing. Emotion is multifaceted, influenced by neurological activation, the endocrine system, physiological arousal, cognitive appraisal, attention processes, and learning history (Thompson, 1994). Emotions can be thought of as a set of processes that organize our experiences in a constantly changing world.

Emotion regulation is defined as any alteration of an internal or external process in the system that generates emotion or its manifestation in behavior (i.e., emotional expression; Campos et al., 2004). Therefore, emotion regulation is wide ranging, involving a number of methods at various points in the behavioral chain. An individual can choose an alternative situation, modify the situation, divert their attention, reappraise the situation, and/or modulate the emotional response (Gross, 1998). For example, a child could choose not to play with a peer that often calls her names (*situation selection*); she could suggest a new game to play when she becomes bored (*situation modification*); she can close her eyes during a frightening movie (*attentional deployment*); she could reinterpret her friend's silence as a sign that her friend is tired, not upset (*cognitive reappraisal*); or she could engage in mindfulness meditation when she becomes nervous before a test (*emotion modulation*). The most appropriate emotion regulation technique and point of intervention is largely determined

by contextual factors. CBT for youth with emotion regulation difficulties focuses, in part, on teaching skills and strategies to help cope with distressing emotional responses.

For instance, a clinician may provide psychoeducation on thinking errors (e.g., catastrophizing, fortune-telling, overgeneralization) and teach the child or adolescent how to challenge negative thoughts. In addition, clinicians often teach progressive muscle relaxation, mindfulness, and problem solving in the context of the child's particular worries. Adolescents who struggle with distress tolerance can be taught distraction through the acronym "A wise mind ACCEPTS," which stands for activities, contributing, comparisons, emotions, pushing away, thoughts, and sensations. Another strategy involves teaching adolescents to "IMPROVE through movement," which stands for imagery, meaning, prayer, relaxation, one thing in the moment, vacation, and encouragement (Linehan, 2015; Rathus & Miller, 2015). These strategies are directly applicable to multitiered systems of support within the school environment and are most appropriate within Tier 3 services.

OVERVIEW OF COGNITIVE BEHAVIOR THERAPY

In the application of CBT, the practitioner seeks to teach individuals how to evaluate their thinking in a realistic and adaptive way so that they experience improvements in emotional and behavioral functioning (Beck, 2011). CBT has been adapted successfully for use with many problems and disorders in adults and youth. Importantly, although the session content, techniques, and length of treatment may vary depending on the focus and developmental stage or cognitive ability of clients (Fonagy, Target, Cottrell, Phillips, & Kurtz, 2002), the theory of change remains constant. For instance, CBT for younger children tends to have more of a behavioral, rather than cognitive, focus. This behavioral focus helps younger children improve their functioning by teaching them tangible strategies to reduce their symptoms. As an example, CBT for a younger child might address distressing bodily symptoms (e.g., racing heart, sweating palms) by teaching breathing techniques and distraction. In contrast, CBT for adolescents can incorporate methods for addressing cognitive distortions (maladaptive ways of thinking) as a means of creating behavioral, emotional, and physical changes.

CBT is not a unitary treatment, however, but a collection of interventions from a biopsychosocial perspective, targeting both behaviors and cognitions in an effort to improve an individual's mental, as well as physical, health. Although diverse, CBTs typically (a) adhere to the scientist–clinician model, thereby incorporating treatments based on empirical support; (b) begin with a functional analysis or comparable ideographic assessment to better understand the behavioral, cognitive, and situational maintenance factors (e.g., Haynes & O'Brien, 1990); (c) are problem-focused, emphasizing problem-solving; (d) include psychoeducation, an empirically supported intervention where

youth are presented with information about their particular difficulty in a supportive environment (e.g., Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008); and (e) end with relapse education and generalization. In youth, CBTs also typically include (a) assessments of the target symptoms from multiple reporters (e.g., mother, father, teachers), (b) a developmental assessment to guide treatment, and (c) parental involvement, sometimes explicitly, as is the case with family CBT (Kendall et al., 2008).

CBT programs for youth with emotion regulation challenges vary but typically use a common set of intervention components: psychoeducation, cognitive restructuring, exposure, modeling, reinforcement, and “homework” assignments. Treatment is relatively brief—typically involving weekly, 50-minute sessions for 12 to 16 weeks (Seligman & Ollendick, 2011). Treatment interventions are tailored to the child’s developmental level and their specific symptoms. Hierarchical and problem-focused, CBT involves teaching skills and coping strategies to help children effectively deal with a wide range of emotional responses. Skills and strategies are practiced in session, as well as at home “in the real world,” often as a homework assignment. These homework assignments help the child generalize skills learned in session to everyday life, building a sense of efficacy and positive affect.

EMPIRICAL SUPPORT FOR COGNITIVE BEHAVIOR THERAPY FOR EMOTION REGULATION

CBT administered within a multimodal, evidence-based practice model is the treatment of choice for youth with internalizing disorders (Compton et al., 2004; Connolly & Bernstein, 2007; Geddes, Reynolds, Streiner, & Szatmari, 1997). For example, nearly 50 studies have provided empirical support for CBT for youth with difficulties regulating their anxiety (Ollendick & King, 1998; Ollendick, King, & Chorpita, 2006); this evidence-based treatment for youth often produces large effect sizes in randomized controlled trials (Chorpita et al., 2002). Following CBT, approximately 66% of youth no longer meet criteria for their primary diagnosis, and these effects are often maintained at 3-, 6- and 9-month follow-ups, with an average treatment length of only 12 to 16 weeks (Seligman & Ollendick, 2011). These treatment gains have been shown to be maintained in studies that follow youth up to 9 years following treatment (Nevo & Manassis, 2009). Of great importance, CBT for anxiety has been found to be efficacious in youth with comorbid conditions (e.g., Ollendick, Jarrett, Grills-Taquechel, Hovey, & Wolff, 2008), as well as across a number of cultural and ethnic groups (Ginsburg & Drake, 2002; Kataoka et al., 2003; Kendall, 1994; Weiner, Schneider, & Lyons, 2009).

School-based behaviorally related interventions for children have decades of research providing compelling empirical evidence for their effectiveness (Akin-Little, Little, Bray, & Kehle, 2009). In a review of 300 meta-analytic studies on the efficacy of CBTs with children, medium to large effects were

found across numerous child outcomes (Weisz, Weiss, Alicke, & Klotz, 1987). Notably, meta-analytic research has shown behavioral interventions, including CBT, are superior to nonbehavioral interventions (Casey & Berman, 1985; Weisz et al., 1987). In addition, the treatment effects observed in school-based behavioral interventions are comparable to that of child psychotherapy (Stage & Quiroz, 1997). Like child psychotherapy, a behavioral intervention is a collection of common, empirically supported behavioral strategies: self-management, token economies, stimulus cueing, differential reinforcement, combined reinforcement and punishment, and group contingencies, all of which have been found to have large effects in decreasing disruptive behaviors (see Stage & Quiroz, 1997, for a review). Therefore, these practices tailored to a child's specific difficulties are often recommended to improve classroom behavior (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008).

TARGET EMOTIONS AND INTERVENTION EXAMPLES

Common emotional targets of CBT youth programs include, but are not limited to, anxiety, depression, trauma, and anger. For instance, there is substantial support for Cognitive Behavioral Intervention for Trauma in Schools (CBITS; Jaycox, 2004). CBITS is an evidence-based intervention (EBI) that was originally developed for ethnic minority and immigrant youth exposed to trauma, where it has been found to decrease the negative effects of trauma exposure in ethnically, linguistically, and socioeconomically diverse groups (Kataoka, Fuentes, et al., 2006; Kataoka, Stein, et al., 2003; Stein, Jaycox, et al., 2003; Stein, Kataoka, et al., 2002). Similarly, the Incredible Years Program is an EBI designed to prevent and treat disruptive behavior problems from birth to age 13. The program incorporates parent training, teacher training, and child intervention components (Webster-Stratton & Reid, 2010). There is substantial research in support for the Incredible Years Program, including multiple randomized trials demonstrating improvement in youths' behavior problems and improvements in problem solving and prosocial skills with peers (Webster-Stratton & Reid, 2010).

Coping Cat is a common CBT for childhood anxiety that has significant empirical support (Kendall, 1994; Kendall et al., 1997). It follows a therapist manual (Kendall & Hedtke, 2006a) and uses a client workbook (Kendall & Hedtke, 2006b). The manual guides the therapist (in a flexible manner), whereas the workbook contains tasks and activities for the child, which scaffolds with treatment. The program is a 16-session treatment for children aged 7 to 13. The first half of treatment includes psychoeducation, teaching the child to identify cues for anxiety and skills to help him or her effectively cope. The second half of treatment involves the child completing a graduated fear hierarchy created with the therapist. To help children remember their coping strategy, Coping Cat uses a mnemonic (the FEAR plan). The *F* (Feeling Frightened?) helps the child to check how their body is feeling, the *E* (Expecting Bad Things to Happen?) helps the child to remember to label anxious cognitions, the *A* (Attitudes and

Actions that Can Help) prompts the child to use his or her coping skills (e.g., coping thoughts, problem solving, relaxation, belly breathing), and the *R* (Results and Rewards) step asks the child to rate and reward their performance.

Two large randomized controlled trials have provided support for Coping Cat (Kendall, 1994; Kendall et al., 1997; Kendall, Safford, Flannery-Schroeder, & Webb, 2004), where 60% of youth no longer met criteria for their principal anxiety disorder following 12 to 16 sessions (Kendall, 1994), which were maintained at a long-term follow-up (Kendall et al., 2004). Importantly, the effects of CBT appear to be improved when completed in conjunction with a selective serotonin reuptake inhibitor; 81% of youth responded to treatment following 14 sessions of CBT and medication (Walkup et al., 2008).

Surprisingly, there was a significant difference in substance use problems between treatment responders and nonresponders at 7.4-year follow-up (Kendall et al., 2004). Responders to CBT were less likely to meet criteria for an anxiety disorder or depressive disorder, were found to consume less alcohol per month, and had a lower rate of drug use. Responders to treatment had significantly less unwanted social, physical, and psychological impairment. It seems the long-term alleviation of anxiety and/or the improved emotion regulation may work as a preventive treatment for at-risk children. Though childhood anxiety may be successfully treated as an acute disorder, substance use disorder is chronic (McLellan, Lewis, O'Brien, & Kleber, 2000). Therefore, not only is CBT a treatment for successful emotion regulation but it can also be viewed as a preventive intervention, altering a child's developmental trajectory and impacting youths' emotional and physical well-being in the long term.

PHYSICAL HEALTH

There is a bidirectional relationship between mental and physical health (Cross & Pressman, 2017; Eells, 2000). For instance, pervasive negative emotional states have long been hypothesized to negatively affect physical health (Alexander, 1939). More recently, there has been a growing interest in the harmful effects that childhood psychosocial stress can have on one's long-term physical health (e.g., Miller, Chen, & Parker, 2011). Importantly, the downstream effects of CBT interventions have also been shown to have a positive impact on physical health (Schmidt et al., 2003). Although more research is needed to understand better the positive impacts that CBT can have on youths' long-term physical health, we review the research to date that, broadly, provides support for CBT as a mind-body intervention.

Historically, challenges regulating negative emotional states have been found to exacerbate coronary heart disease and hypertension (e.g., Booth-Kewley & Friedman, 1987; Friedman & Booth-Kewley, 1987; Krantz & Manuck, 1984; Smith, 1992; Steptoe, 1993), accelerate cancer progression (Fawzy et al.,

1993; Gross, 1989; Spiegel, Bloom, Kraemer, & Gottheil, 1989), and worsen minor ailments (Pennebaker, 1990) and have been associated with negative long-term health outcomes (Peterson, Seligman, & Vaillant, 1988). More recently, research has begun to shed light on the deleterious impact childhood psychosocial stress can have on one's physical health (Gallo & Matthews, 2006; Gluckman & Hanson, 2006; Matthews & Gallo, 2011; Repetti, Taylor, & Seeman, 2002; Shonkoff, Boyce, & McEwen, 2009). This line of literature led Miller et al. (2011) to propose the biological embedding model. By synthesizing the behavioral and biomedical literature, they posited that childhood stress influences macrophages through various biological mechanisms (e.g., epigenetic markings, posttranslational modifications, tissue remodeling). Macrophages, essential for good physical health, are then more likely to have a pro-inflammatory response, increasing cytokine responses, and reduced sensitivity to inhibitory hormones. In parallel, childhood stress exposure also influences certain behavioral tendencies and hormonal dysregulation, further exacerbating the impact of stress on one's physical health. These researchers suggested that childhood stress, and subsequent biological changes caused, can lead to social mistrust, threat vigilance, poor social relationships, impaired self-regulation, and the development of unhealthy habits later in life.

In sum, this theory attempts to explain the connection between mental and physical health through pathogenic mechanisms that promote chronic disease. There is overwhelming evidence of direct, physiological benefits derived from experiencing, as well as expressing, positive emotions. Moreover, the negative health consequences associated with negative emotional states highlight the importance of teaching skills and strategies to repair negative moods in an effort to improve physical health (Salovey, Rothman, Detweiler, & Steward, 2000). Schmidt and colleagues (2003) provided some support for CBT improving physical health outcomes. They found that treated individuals demonstrated a marked improvement in both anxiety symptoms and physical health symptom ratings, maintained through a 6-month follow-up. Interestingly, anxiety symptoms did not appear to mediate the relationship between treatment and improved physical health ratings. The authors suggested CBT may have an immediate and long-term beneficial impact on physical health, independent from its reduction of anxiety symptoms. Therefore, school-based interventions targeting emotion regulation strategies early in childhood have the potential to improve the emotional and physical well-being of children.

COGNITIVE BEHAVIOR THERAPY IN THE SCHOOL ENVIRONMENT

CBT has frequently been implemented within a school environment, either individually or in a group setting, and is typically directed at one presenting problem (e.g., anger, anxiety; Creed, Waltman, Frankel, & Williston, 2016). The training that is necessary to implement these programs might include workshops—either several hours or daylong—delivered by mental health

professionals or developers of the programs, coaching, and/or ongoing consultation. If available, CBT can be provided by qualified mental health professionals; however, CBT and its skills have the potential to be delivered or supported by multiple people (e.g., teachers, school counselors) within the school environment (Creed et al., 2016). Further evidence of CBT in the school setting was demonstrated in a systematic review of its implementation with youth diagnosed with depression (Kavanagh et al., 2009). This review found that CBT was more effective with more sessions and when it was provided by existing school staff (Kavanagh et al., 2009). School counselors can be effectively trained by mental health professionals to provide CBT to students (Warner et al., 2013), and some programs are even designed to be implemented by regular classroom teachers following interactive workshops (e.g., *Tools for Getting Along*; Daunic, Smith, Brank, & Penfield, 2006).

Delivery of CBT by existing school staff may allow the student to more effectively generalize the CBT skills to important natural settings (Creed et al., 2016; Kavanagh et al., 2009). In addition, providing training to teachers on the principles of CBT may allow them to understand how academic functioning can decrease when a student is experiencing psychological distress (Kavanagh et al., 2009). Providing CBT in a school setting may pose several challenges (e.g., cost); however, it may allow children to develop skills more rapidly because they are provided with immediate opportunities to practice skills (Elkins, McHugh, Santucci, & Barlow, 2011). In addition, providing CBT within a school environment may remove several barriers to implementation (e.g., transportation; Elkins et al., 2011). Consideration should be made when implementing traditional CBT strategies, and components may have to be modified to maintain relevance in varying settings (Ginsburg, Becker, Kingery, & Nichols, 2008). For example, when implementing CBT in underserved school populations, efforts should be made to increase buy-in from school staff and parents—in addition to as-needed adjustments to scheduling and session length (Ginsburg et al., 2008). Examples of CBT programs that have been implemented in schools and found to be efficacious are listed in Table 21.1.

APPLICATION THROUGH TIERED SYSTEMS OF SUPPORT

Multitiered systems of support can be a useful framework for determining which students are at risk of emotion regulation challenges and most in need of services. Next, we discuss an assessment and progress-monitoring protocol for each tier. Then, we discuss strategies that can be implemented at each tier.

Assessment

In Tier 1, the use of universal screeners is necessary to determine which students may need to be moved to receive Tier 2 services. Examples of screeners that may be used to determine which students are struggling with emotion

TABLE 21.1. Examples and Descriptions of Cognitive Behavior Therapy Programs That Can Be Implemented in Schools

| Program | Citation | Target emotion | Content | Delivered by | Materials | Training |
|---|---|---------------------------|--|--|---|---|
| Cognitive Behavioral Intervention for Trauma in Schools (CBITS) | Jaycox (2004) | Trauma | Ten 1-hour weekly group sessions | School-based mental health provider | Manual for provider and workbook for students | 5-hour online training followed by 2-day in-person workshops |
| Cool Kids | Herzig-Anderson, Colognori, Fox, Stewart, & Masia-Warner (2012) | Anxiety | 10 individual or group sessions with both parents and youth | School-based mental health provider and counselors | Manual for provider and workbook for students | 6-hour online training |
| Coping Cat | Kendall (1994) | Anxiety and coping skills | Sixteen 50-minute, individual weekly sessions | School-based mental health provider | Manual for provider and workbook for students | Video training, up to 2-day in-person workshops, phone supervision |
| Coping Power | Lochman & Wells (2002) | Coping skills | Thirty-four 50-minute group sessions; can include individual sessions and a parent component | School staff | Manual for provider and workbook for students | Workshops, ongoing consultation, feedback on recorded sessions |
| Skills for Academic and Social Success (SASS) | Fisher, Masia Warner, & Klein (2004) | Social anxiety | 12 weekly group sessions, two individual, two parent, four social events, two booster sessions | School-based mental health provider and counselors | Manual for provider and workbook for students | 5-hour workshop, coleading sessions with mental health professional, ongoing phone consultation |
| Tools for Getting Along | Daunic, Smith, Brank, & Penfield (2006) | Problem-solving skills | 20 biweekly lessons, followed by six weekly booster sessions taught to entire classes | Regular classroom teachers | Manual for provider and workbook for students | 1- or 2-day in-person training; can also provide ongoing consultation |

regulation problems are the Emotional Competence subscale of the Social and Emotional Health Survey (SEHS; Furlong, You, Renshaw, Smith, & O'Malley, 2014), the Youth Internalizing Problems Screener (YIPS; Renshaw & Cook, 2016), or the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). These measures vary in terms of whether they are self-report or filled out by the teacher and are answered via Likert-type scales (i.e., 0 = *never*, 1 = *rarely/seldom*, 2 = *occasionally/moderately*, 3 = *frequently/almost always*). Sample items from these scales include "I feel nervous or afraid" (YIPS), "I feel moody or grumpy" (YIPS), "I can deal with being told no" (SEHS), and "I control my emotions by not expressing them" (ERQ). Students who are identified as at risk will have scores above the appropriate cut-off for each measure.

Students who are identified via a screener should then complete—either themselves or via a third party—a broadband measure such as the Behavior Assessment System for Children—Third Edition (BASC-3; Reynolds, Kamphaus, & Vannest, 2015) or the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). These measures provide overall composite scores (i.e., internalizing problems, behavioral symptoms index) as well as subscale scores (e.g., anxiety, adaptability) that may provide a more specific picture of the regulatory issues with which the child is struggling. This will allow school-based practitioners to place students in small groups to deliver a more tailored intervention that is appropriate for Tier 2 services. As students receive services, the screeners discussed for Tier 1 may be used for progress-monitoring purposes. Broadband measures such as the BASC-3 or the CBCL are not considered appropriate for progress monitoring.

If students are receiving Tier 2 services and are not consistently making progress—or perhaps beginning to struggle in other aspects related to emotion regulation—they may be referred to receive Tier 3 services. To tailor a one-on-one intervention effectively, the student should complete a *narrowband measure*—these are measures that are more specific to internalizing disorders or emotion regulation challenges. In addition, a clinical interview with a qualified professional (e.g., a school psychologist or counselor) may also be appropriate. For example, narrowband measures that can be used in Tier 3 include the Beck Youth Inventories (Beck, Beck, Jolly, & Steer, 2005). This measure can be divided into five inventories that may be used separately or together depending on the child's needs: depression, anxiety, anger, disruptive behavior, and self-concept. These measures provide an in-depth understanding of the various emotion regulation and internalizing challenges exhibited by youth.

Strategies

Several CBT strategies that target emotion regulation issues can be implemented at Tier 1. These strategies include direct instruction of social-emotional learning (SEL) through curricula that may be taught by the general education teacher to the entire classroom. Strategies taught within SEL curricula often

include recognizing and understanding various emotions, dealing with anger, and learning how to solve problems. Many students respond well to this instruction and will begin to use these strategies successfully in addition to generalizing them to novel situations. Strategies that can be implemented at Tier 2 also include direct instruction of SEL skills, as well as various emotion regulation and CBT strategies in a small group setting. Depending on the student's referral concerns, these groups could target anxiety, anger, depression, or trauma—with students grouped based on their presenting problems. Strategies that can be implemented at Tier 3 include all the strategies listed previously as well as more targeted cognitive strategies, such as challenging automatic thoughts and improving adaptability.

CASE EXAMPLE

To illustrate how CBT can be implemented within the school system, we consider a case example of a student in secondary school who had not been previously identified within the school system as having emotion regulation difficulties. For ease of illustration, we name this hypothetical student Taylor. Taylor has always struggled with dealing with his emotions and has begun to feel more and more anxious in the school environment. However, he has typically done well in school and was thus never singled out. As he entered high school, his deficits in these skills became more apparent. As a part of a universal screener aimed at determining which students are at risk of clinically significant levels of emotion regulation deficits, Taylor was flagged. On follow-up with his homeroom teacher, it seemed as though Taylor might benefit from Tier 2 services.

To determine the type of small group best suited for Taylor, two of his teachers completed the BASC-3. Each teacher's scores indicated that Taylor is experiencing "at-risk" withdrawal problems in addition to "clinically significant" anxiety problems. His composite school problems score was also considered "at risk," due to his score on the "attitude toward school" subscale. Thus, it was agreed on with his family that he would benefit from being placed in a small group that received a CBT intervention aimed at improving anxious symptoms and coping strategies. This group consisted of four students. They completed the Cool Kids curriculum, which was developed as a group-delivered CBT intervention for children and adolescents with anxiety (Lyneham & Rapee, 2005). This intervention consists of 10 sessions that are conducted weekly for 2 hours (1 hour if individually delivered; Rapee et al., 2006). In this group, students were given psychoeducation about their anxiety, instruction in cognitive restructuring, and instruction in various coping strategies. They also received direct instruction in assertiveness and completed various in vivo exposures. It was apparent that Taylor's anxiety involved his performance on homework and other assignments. This anxiety was causing him to act out and not complete his schoolwork for fear of negative evaluation. The students in this group completed progress-monitoring measures every 2 weeks.

Following the conclusion of the anxiety group, Taylor exhibited improvements in his behavior and was beginning to complete his schoolwork again. However, he was still not showing growth on his progress-monitoring measure. He was administered the Beck Youth Inventory for anxiety. He also completed a semi-structured interview with the school psychologist. On the basis of the data, Taylor qualified to receive one-on-one intervention services from the school psychologist. Specifically, Taylor was still significantly bothered by his anxiety about performance on school assignments. Although he was completing his schoolwork again, he felt many physical symptoms during the completion of his work (e.g., racing heart rate, sweating), and his grades were not reflective of his ability.

The school psychologist continued the use of the Cool Kids curriculum; however, she used a more targeted approach to Taylor's specific regulatory deficits. Many of their sessions consisted of exposures when the psychologist would time Taylor while he did various tests and assignments. The individualized nature of Tier 3 services allowed the psychologist to devote the adequate time and resources needed to reduce the physiological symptoms exhibited by Taylor. The clinician worked with Taylor to recognize when he was becoming aroused and upset from the present task. She taught him various relaxation skills and conducted exposures to allow him to practice his coping strategies to calm himself. In addition, the clinician worked with Taylor on his negative automatic thoughts about his anxiety. Taylor frequently thought of himself as a failure because, although he had been taught several skills, he was still struggling with feeling nervous while completing his schoolwork. By examining his patterns of negative thinking, he and the clinician were able to target and reduce thoughts related to lack of self-efficacy and reduce anxious symptoms related to his work. Again, progress monitoring was conducted weekly and was conducted using the ERQ.

It was determined after six sessions that Taylor no longer required Tier 3 services (i.e., individual therapy). His progress-monitoring data indicated that he was making improvements in his regulatory symptoms, and he self-reported that he felt more in control of himself. In addition, his performance on his tests and assignments was also improving. Thus, the clinician provided a final session wherein they reviewed the skills learned and set up two booster sessions to be conducted over the next few months.

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22

The Mind–Body Connection in Sleep Health

Conducting Assessments and Interventions in School Settings

Michelle M. Perfect, Sara S. Frye, and Suzanne B. H. Williams

Research has indicated that sleep of adequate duration and quality obtained on a routine basis is important for physical and psychological well-being. Unfortunately, the majority of children and adolescents do not obtain enough sleep. Due to school start times and daily obligations such as homework and extracurricular activities, children’s and adolescents’ sleep schedules are often incompatible with their biological clocks. Thus, they may frequently obtain an insufficient amount of sleep, which has been shown to have broad implications across academic, cognitive, and behavioral functioning. Therefore, there exists a need to address sleep issues within a school setting. There has been a surge in interest in the use of mind–body interventions for health-related conditions, including sleep. This chapter explores the empirical and theoretical support for addressing sleep with mind–body interventions, with a particular focus on the role of the school.

THE EFFECT OF SLEEP ON THE MIND AND BODY

Sleep consists of a series of stages that are broken down into rapid eye movement and nonrapid eye movement. Parasympathetic nervous system (PNS) activity predominates, and sympathetic nervous system (SNS) activity is reduced during the third stage (e.g., slow wave sleep). These systems are implicated in arousal and relaxation responses, respectively. When sleep

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TABLE 22.1. Sleep Conditions in Childhood and Adolescence

| Disorder | Prevalence | Primary symptoms |
|--|--|---|
| Insufficient sleep ^a | 68.9% in adolescents | Inadequate sleep duration per national recommendation or individual need. |
| Insomnia ^b | 10.7% in adolescents | Characterized by trouble falling asleep or staying asleep, often resulting in excessive daytime sleepiness and irritability. |
| Sleep disordered breathing ^{c, d} | 1%–5% in children | A range of disorders resulting in cessation or reduction of breathing during sleep. |
| Delayed sleep phase syndrome ^{e, f} | 3.3%–8.4% in adolescents | A circadian rhythm disorder most common in adolescents in which individuals persistently cannot fall asleep until 2 hours or more after desired bedtime, conflicting with scheduled activities such as school and work. |
| Periodic limb movement disorder ^g | 5% in children 10.5% in adolescents | Involuntary jerking movement of limbs during sleep that results in fragmented sleep and daytime impairment. |
| Narcolepsy ^h | .02%–.05% in adults (likely lower in children) | Dysregulation of the sleep–wake cycle resulting in episodes of excessive daytime sleepiness, frequently paired with muscle weakness. |

Note. ^aEaton et al., 2010. ^bJohnson, Roth, Schultz, & Breslau, 2006. ^cBixler et al., 2009. ^dRosen et al., 2003. ^eSivertsen et al., 2013. ^fSaxvig, Pallesen, Wilhelmsen-Langeland, Molde, & Bjorvatn, 2012. ^gMarcus et al., 2014. ^hCosta et al., 2014.

difficulties become pervasive and significantly impact daytime functioning, an individual may meet the criteria for a sleep disorder. Table 22.1 lists the continuum of sleep problems, including diagnostic information.

Physical Outcomes

Sleep is implicated in a wide array of bodily functions and physical health outcomes. Cortisol, a hormone implicated in the body’s response to stress, has been shown to be elevated at bedtime and suppressed in the morning in those who do not obtain enough sleep (Perfect, Elkins, Lyle-Lahroud, & Posey, 2010). Research has consistently shown that inadequate sleep is a causal factor in glucose dysregulation, obesity, and increased risk of metabolic disorders such as diabetes (Fatima, Doi, & Mamun, 2015).

Psychological Outcomes

Sleep also plays an important role in psychological health outcomes. Several studies have linked sleep difficulties with emotional and behavioral challenges,

either as outcomes of sleep disturbances or comorbid with sleep disorders (El-Sheikh, Kelly, Buckhalt, & Hinnant, 2010). For example, one study found that parental reports of children's daytime sleepiness and self-reports of concurrent daytime sleepiness were related to youth who scored in the at-risk or clinical range on a behavioral assessment tool. Further, endorsed symptoms, such as difficulties with sleep onset and maintenance, predicted scores on a parent-rated measure of internalizing and externalizing symptoms (Perfect, Levine-Donnerstein, Archbold, Goodwin, & Quan, 2014). Academic challenges and lower performance on standardized achievement tests have also been reported across multiple studies among youth with insufficient sleep (Buckhalt, El-Sheikh, & Keller, 2007). Moreover, youth with sleep-disordered breathing (SDB) may present with symptoms of hyperactivity, impulsivity, and social skill deficits (Bonuck, Freeman, Chervin, & Xu, 2012). They also may lag behind in independence and positive social experiences relative to what is expected for their age (Perfect, Archbold, Goodwin, Levine-Donnerstein, & Quan, 2013).

SLEEP IN SPECIAL POPULATIONS

Several neurodevelopmental conditions have been associated with increased risk of sleep problems. In one review, as many as fourth fifths of children with neurological or developmental conditions had sleep difficulties. For example, children with autism spectrum disorder often struggle to fall asleep, stay asleep, and/or obtain enough sleep (Blackmer & Feinstein, 2016). Children with Down syndrome have significantly higher rates of SDB due to the facial structures and anatomical differences (e.g., airway size and tonsil position) associated with the condition (Esbensen & Schwichtenberg, 2016). Other conditions, such as attention-deficit/hyperactivity disorder (ADHD), are also associated with sleep disturbance. Specifically, ADHD combined type may contribute to problems with sleep onset, either due to behavioral problems associated with the condition or because of medication effects (e.g., stimulants). In contrast, children with ADHD, predominantly inattentive type, have been found to have higher rates of sleepiness during the day but are less likely to exhibit nighttime sleep disturbances (Mayes, Calhoun, Bixler, & Vgontzas, 2009). Some studies have demonstrated mild sleep disturbances in children with traumatic brain injuries and that sleep plays a contributing role in recovering from head injuries (Edmed, Rossa, Kenardy, Anderson, & Smith, 2017).

ASSESSMENT TOOLS FOR MEASURING SLEEP

Sleep has been measured with a variety of tools. One method is to use questionnaires completed by either the individual or a caregiver about sleep in general. Alternatively, parents or individuals may be asked to self-report about sleep timing over one or multiple nights. Another method involves objective

measures of sleep that use accelerometers to estimate sleep–wake activity from movement. Polysomnography (PSG) is another method that directly measures brain waves and respiration to ascertain sleep architecture and the presence of SDB. (See also Meltzer & Crabtree, 2015.)

Actigraphy

An actigraph is a wrist-sized device that uses an accelerometer to estimate sleep–wake activity based on movement. Several research grade devices have been validated in studies (Meltzer, Walsh, Traylor, & Westin, 2012), but there are also accelerometers that are sold in retail, ranging in price from \$20 to over \$200. However, the validity of these devices has not necessarily been systematically tested (Lee & Finkelstein, 2015). Various features include movement counts and integrated light sensors that record the presence of incoming light across the color spectrum, including blue light that has been shown to interfere with the production of melatonin. In general, sleep parameters are based on movement using scoring algorithms from the respective company's software program.

Sleep Diary

Sleep diaries can be used to track sleep, including time to fall asleep, number of awakenings, time spent awake after falling asleep, bedtime and wake time, and quality of sleep. School counselors or psychologists can use this information to inform treatment at school. Teachers can also refer to the information to potentially anticipate difficulties with focus, attention, and behavior or at least to understand factors that can potentially contribute to school functioning. Buckhalt, El-Sheikh, Keller, and Kelly (2009) noted that although some children can be asked via an interview about their bed and wake times and other aspects of sleep, a sleep diary provides data over multiple days. Nonetheless, those viewing the data must be aware of the potential inaccuracies in reporting, particularly in younger children who may require the assistance of their parents to provide accurate information. Short, Arora, Gradisar, Taheri, and Carskadon (2017) concluded that 5 nights are necessary to reliably ascertain a pattern of sleep behaviors in adolescents for school nights. However, nonschool night sleep necessitated multiple weekend days (ranging from 4 for sleep onset latency [SOL] to as many as 13 for bedtimes) to obtain reliable data. The authors concluded that combining school and nonschool nights diary entries provided a reliable estimate of sleep schedules, with 2 weeks providing reliable approximations of sleep behaviors.

Epworth Sleepiness Scale

The presence of daytime sleepiness is central to multiple sleep-related disorders including SDB, hypersomnia, and so forth. The Epworth Sleepiness

Scale was originally validated in adults and then shown to have sufficient psychometric properties to detect sleepiness in youth (Janssen, Phillipson, O'Connor, & Johns, 2017). It contains eight questions asking about activities (e.g., watching TV, sitting and reading) during which the respondent struggles to fall asleep or actually falls asleep, using a 4-point Likert scale. The responses are added together to derive a total, with classifications based on the level of sleepiness experienced. It is freely available for use.

School Sleep Habits Survey

The School Sleep Habits Survey (SSHS) was originally administered to a large sample of adolescents in the United States (Wolfson & Carskadon, 1998). It includes subscales to assess sleepiness (e.g., struggling to stay awake during activities), sleep timing (e.g., typical bed and wake times on school and non-school nights), subjective feelings of sleepiness, sleep habits, sleep quality, and circadian rhythm preference (e.g., morningness or eveningness). This measure includes additional questions related to studying, extracurricular, sports practice, and work schedules; a depression subscale; background information; and household composition. A recent review indicated that there is only preliminary psychometric information available on the SSHS (Erwin & Bashore, 2017). It is freely available for use.

Children's Report of Sleep Patterns

The Children's Report of Sleep Patterns is a self-report questionnaire that assesses the child's sleep patterns and habits, including sleep duration, awakenings, parasomnias, SDB symptoms, daytime sleepiness, bedtime resistance, and sleep disruptions (Meltzer et al., 2013). It is considered to be a reliable instrument for use in children and was validated against PSG and actigraphy. It is freely available for use.

Patient-Reported Outcomes Measurement Information System

The National Institutes of Health Patient-Reported Outcomes Measurement Information System Sleep Disturbance questionnaire for adolescents is a free available screening measure, consisting of eight items, that assesses an adolescent's perspective on sleep quality during the past week (Hanish, Lin-Dyken, & Han, 2017).

MIND–BODY HEALTH INTERVENTIONS FOR SLEEP

There is a burgeoning body of literature examining the potential implications of mind–body interventions on sleep. Unfortunately, most of the studies have been conducted with adults, involved small samples, did not use rigorous

designs, or showed mixed results depending on the nature of the outcome assessment. Nonetheless, several of the interventions have shown promise in addressing sleep-related problems that may interfere with students' school experiences and contribute to negative educational outcomes.

Relaxation

Relaxation therapies comprise progressive muscle relaxation, biofeedback, or guided imagery. *Progressive muscle relaxation* is achieved by tensing and releasing the tension of muscles. In *biofeedback*, individuals are taught to respond to feedback by controlling some of their body sensations (e.g., arousal). For *guided imagery*, a clinician might describe different scenes while the individual remains in a still state and envisions what is being described. The effects of relaxation therapies are often used as part of cognitive behavior therapy. Progressive muscle relaxation and imagery techniques have been found to be effective at reducing anxiety symptoms and alleviating stress, both of which may contribute to sleep onset difficulties (Morin et al., 1999). Relaxation therapy in adults was found to be effective in reducing central nervous system activity as measured by electroencephalography, specifically theta waves, compared with music therapy as a control condition. The authors proposed that the use of relaxation techniques mimics the brain activity observed during the lightest stage of sleep (Jacobs & Friedman, 2004). Other relaxation techniques, such as hypnosis and meditation, are reviewed separately next.

Hypnosis

Elkins, Barabasz, Council, and Spiegel (2015) defined *hypnosis* as "a state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion" (p. 6). According to Perfect and Smith (2016), *hypnotic relaxation* provides individuals with suggestions to relax. The induction typically begins by suggesting that a person focus his or her attention on a fixed object or location and then guides the individual through imagery scripts based on their preferences. In addition, Elkins (2014) noted that with hypnotic relaxation therapy, suggestions are offered to promote relaxation, build confidence, and reduce targeted problem areas. Important to all forms of hypnotic interventions is the individualization of suggestions and the emphasis on self-hypnosis, so individuals develop independence in applying the hypnotic techniques. In a review (Perfect & Smith, 2016) of the application of hypnosis to improve sleep, the authors concluded that most of the published literature has been retrospective chart reviews (Anbar & Slothower, 2006), single case studies (Perfect & Elkins, 2010), or adult studies for which sleep was not the primary target but rather a secondary benefit (Neuendorf et al., 2015). Nonetheless, those studies did conclude that the majority of youth demonstrated reduced SOL, reduced awakenings, and more consistent sleep schedules. Cordi, Schlarb, and Rasch (2014) conducted a series of laboratory-based experimental studies

to assess the potential for participants to obtain a deeper stage of sleep during a nap period following hypnotic suggestions delivered via an audiotape. The researchers found that females who scored high on a hypnotizability scale had a greater percentage of time spent in deeper sleep after listening to hypnotic suggestions compared with when they listened to information about minerals. The effects of the hypnosis on sleep were not observed in females who scored low in hypnotizability. Such findings provide support that hypnotic relaxation with specific content related to sleep may alter sleep architecture.

Mindfulness

Though specific definitions of *mindfulness* vary according to context, the general practice of mindfulness involves cultivating self-awareness and receptivity without judgment. Mindfulness-based interventions in youth to target stress reduction and promote adaptive coping mechanisms have yielded generally positive findings (Mendelson et al., 2010; Burke, 2010; see also Chapter 9, this volume). In a study using mindfulness-based cognitive therapy to address sleep, children who received the sleep intervention reported improved sleep quality and fewer behavioral problems (Blake et al., 2017). In a small pilot study of 10 adolescent girls, Bei et al. (2013) found that a mindfulness-based sleep intervention that involved six 90-minute sessions of psychoeducation and mindfulness-based exercises resulted in objective improvements in several facets of sleep, including total sleep time, bedtime variability, SOL, and sleep efficiency. Mindfulness meditation has also shown promise as an intervention for sleep in adults. One study in older adults showed that, compared with a control condition in which only sleep hygiene education was provided, education on mindfulness meditation resulted in improvements in self-reported sleep disturbances and daytime sleepiness (Black, O'Reilly, Olmstead, Breen, & Irwin, 2015). How mindfulness works to improve sleep is not fully understood, but one proposed mechanism is that practicing mindfulness allows people experiencing insomnia to gain more awareness of their bodies and minds. This altered awareness allows the person to respond with less emotional attachment to an outcome, such as the need to fall asleep (Ong, Ulmer, & Manber, 2012). By cultivating acceptance, people are more able to change their behaviors and emotional reactions to promote sleep (Ong, 2017). The process may be different in children because the cause for insomnia is less likely to be related to cognition and more related to other factors.

Cognitive Behavior Therapy for Insomnia

Cognitive behavior therapy for insomnia (CBT-I) is a manualized, nonpharmacological therapy for the treatment of insomnia. Treatment is typically delivered over four to eight sessions and includes both cognitive (e.g., restructuring of unhelpful beliefs about sleep) and behavioral strategies (e.g., stimulus control), as well as other mind–body strategies, such as relaxation training. CBT-I has

consistently been shown to be one of the most effective interventions for sleep. A review by Kozasa et al. (2010) demonstrated that CBT-I was the only mind–body intervention for sleep tested that was found to be more effective than sleep medication. In fact, recent guidelines set forth by the American College of Physicians state that CBT-I should be the first-line treatment of insomnia in adults before sleep medication is prescribed (Qaseem, Kansagara, Forcica, Cooke, & Denberg, 2016). This recommendation is based on decades of research indicating that CBT-I is effective in improving sleep efficiency, SOL, total sleep time, and subjective ratings of sleep quality in adult patients (Mitchell, Gehrman, Perlis, & Umscheid, 2012). There is also evidence that CBT-I can produce changes in sleep architecture. Those who underwent CBT-I experienced increases in slow wave sleep compared with those in the sleep medication or placebo groups (Sivertsen et al., 2006). Recent studies have also supported the effectiveness of CBT-I in adolescents (de Bruin, Bögels, Oort, & Meijer, 2015) and school-age children (Schlarb, Bihlmaier, Velten-Schurian, Poets, & Hautzinger, 2018). CBT-I works by addressing factors that maintain insomnia symptoms, such as anxious cognitions related to sleep; disrupting the behavioral association between the bedroom and nonsleep-related activities; and regulating the sleep–wake cycle.

Light Therapy

Light therapy is used to immediately expose individuals to natural or artificial light of a particular lux (e.g., greater than 10,000) for a period of time (e.g., 30–60 minutes) as they are instructed to wake up a little earlier each day. Several clinical trials have demonstrated the efficacy of bright light therapy (using portable light boxes) to realign the individual's circadian rhythm (van Maanen, Meijer, van der Heijden, & Oort, 2016). One study examined the effect of light therapy as part of a school-based sleep health program (Bonnar et al., 2015). Including light exposure on awakening to the sleep curriculum contributed to increased sleep knowledge, reduced SOL by 15 minutes, and increased total sleep time by 28 minutes. Students who were identified as having a circadian problem (e.g., delayed sleep onset) demonstrated an increase in sleep duration by 45 minutes. The reason proposed for the benefits of light therapy is that the light affects the level of melatonin, which is a hormone regulated by light and dark cycles. However, a study found that the effects of light therapy were not as strong for improving insomnia symptoms in preadolescents as the use of exogenous melatonin (van Maanen, Meijer, Smits, van der Heijden, & Oort, 2017).

Acupuncture

Acupuncture is a traditional practice in Eastern medicine that uses thin needles inserted into precise areas of the body, with certain points thought of as being associated with the treatment of various ailments. Acupressure uses this same system of points, but treatment does not use needles and

instead uses the application of firm external pressure. A recent meta-analysis conducted on the use of acupuncture to treat insomnia in adults concluded that acupuncture significantly improved sleep quality compared with placebo drugs or actual pharmacological intervention using benzodiazepines (Shergis et al., 2016). A limitation noted by the authors was that none of the studies compared the effectiveness of acupuncture with that of CBT, which is considered the first-line treatment for insomnia. There is limited research on the effectiveness of acupuncture or acupressure in youth. One study showed that sleep duration increased and both SOL and wakefulness after sleep onset were reduced in a sample of adolescents after 6 months of wearing an acupressure device on their wrist (Carotenuto, Gallai, Parisi, Roccella, & Esposito, 2013). However, this study did not include a control group; thus, it is unknown whether the device was causally related to the observed improvements in sleep. Research to determine the underlying mechanisms of acupuncture is ongoing; however, current theory has suggested that acupuncture causes an increase in neurotransmitters, such as serotonin and beta-endorphin (Cabýoglu, Ergene, & Tan, 2006). Although both chemicals influence many functions in the body, they are known to reduce stress and thus could have a sedative effect, which could explain improvements in sleep following acupuncture. Overall, acupuncture is reasonably safe and potentially beneficial. However, more research is needed to fully understand the underlying mechanism and determine effectiveness, particularly in pediatric populations.

Tai Chi

Tai Chi is a low-impact series of physical movements that involve breathing control and deep concentration (Raman, Zhang, Minichiello, D'Ambrosio, & Wang, 2013). Numerous studies have documented the potential benefit of Tai Chi for general health, and several have focused specifically on improving sleep quality in adults. A survey study in adults with hypersomnia disorder indicated that less than 5% had tried Tai Chi as a way to treat their sleep problems (Neikrug, Crawford, & Ong, 2017), which indicates that it is not necessarily a widely practiced therapy for sleep-related issues. In a meta-analysis examining the effects of Tai Chi in adults, the findings supported overall improvements in overall sleep quality (Raman et al., 2013). The mechanism of improvement is believed to be the relaxation response evoked by the release of hormones associated with the SNS and PNS balance. To date, no studies have investigated the potential of this intervention in the treatment of sleep problems in children or adolescents. However, anecdotal evidence of a program combining Tai Chi and mindfulness contributed to improved sleep in middle school students (Wall, 2005).

Yoga

Yoga is a movement-based practice that integrates physical activity, breathing, and meditation (see Chapters 13 and 20, this volume). Specifically, yoga

includes deep, slow breathing through the nose and diaphragm, coordinated movements with breathing, static poses, guided relaxation that focuses on feelings in the body, mental focusing, and controlled breathing patterns (Perfect & Smith, 2016). Studies examining the benefit of yoga in improving sleep in the pediatric population are lacking, and studies with adult samples have yielded mixed results (Perfect & Smith, 2016). However, a study that examined a yoga intervention compared with the curriculum as usual in children with autism found significant improvements only in the intervention group in multiple areas of sleep related to awakenings, sleep behaviors, and sleep scheduling (Narasimharao, Pradhan, & Navaneetham, 2017). A review of the impact of yoga interventions on sleep quality found that sleep improved in 10 out of the 20 studies in adults (Neuendorf et al., 2015). A systematic review examined findings related to immune functioning as a result of practicing yoga in adults (Falkenberg, Eising, & Peters, 2018). Although the review did not specifically examine sleep problems, the studies did provide data regarding the potential benefits of yoga on the immune system. The authors concluded that yoga is most effective in improving regulation IL-1 beta as well as some other pro-inflammatory markers (e.g., IL-6, TNF alpha). In some studies, benefits were observed with longer periods and more frequency of yoga. One study found improvements in sleep quality, reduced salivary cortisol levels on awakening, and increased natural killer cell percentage among breast cancer survivors following a yoga intervention (Rao et al., 2017).

Exercise

There are limited data to support the role of exercise in sleep health. However, cross-sectional and experimental studies in adults have provided some evidence as to the relations between physical activity and sleep. General recommendations typically emphasize that vigorous exercise too close to bedtime may be overstimulating and contribute to a delayed SOL but also stress the importance of engaging in some form of physical activity daily (Richardson, Gradisar, Short, & Lang, 2017). In a review of six studies, however, the authors noted that only one study found that the level of physical activity was greater in those who slept the recommended number of hours (i.e., 9 hours or greater) compared with those who slept under the recommended sleep duration (Allen, Howlett, Coulombe, & Corkum, 2016). Four of the studies found that more exercise related to shorter total sleep time. The review also reported that in one of the studies, those who exercised within 30 minutes of bedtime fell asleep faster. Moreover, Richardson et al. (2017) suggested that introducing exercise in the morning could help “advance” the circadian rhythm. A study tested out their supposition by examining the effect of 30 to 60 minutes of moderate physical activity during light therapy in the morning with adolescents. However, the researchers did not find that exercise differentially increased between the treatment and control groups (Richardson et al., 2018). Thus, the improvements observed in SOL and quality

of sleep in the treatment condition cannot be attributed to exercise (see also Chapter 12, this volume, about physical activity interventions in schools).

ADDRESSING SLEEP THROUGH A TIERED SERVICE DELIVERY MODEL

To date, a systematic investigation has not been done to evaluate the utility of a three-tiered framework for assessing and addressing sleep health in schools. Often, sleep problems are addressed if they were identified and deemed a problem. However, unfortunately, sleep is often overlooked as a potential contributing factor to a child's difficulties. Nonetheless, schools could address sleep in the context of a preventive mode that encompasses primary, secondary, and tertiary prevention approaches (Clayton, Chin, Blackburn, & Echeverria, 2010). For instance, Tier 1, or primary prevention strategies, are implemented at a systematic level to avoid the onset of a problem (Clayton et al., 2010). In this regard, schools could implement school-wide programs that promote sleep health universally. A systematic review of 15 school-based sleep education programs and subsequent research (Wing et al., 2015) revealed that typical content included emphasizing the importance of sleep, what sleep is and why people sleep, effects of insufficient sleep, biological aspects of sleep, and sleep hygiene. To a lesser extent, some covered contributors to insufficient sleep and sleep problems. Data indicated that these programs produced varying degrees of impact on sleep behaviors. Most also had not examined secondary academic, social–emotional, or behavioral benefits of increasing sleep knowledge (Gruber, 2017). I (MMP) noted the challenges of adopting school-wide efforts given the varying demands and performance standards (Perfect, 2014). However, I also noted that adequately improving sleep health may contribute to better academic test scores and well-being among students. Another avenue is to incorporate information about sleep and teach students about personal self-monitoring as part of a sleep science curriculum that is aligned to science, math, and/or educational technology standards. The Biological Sciences Curriculum Study successfully disseminated a five-lesson curriculum called *Sleep, Sleep Disorders, and Biological Rhythms* (Biological Sciences Curriculum Study, 2003). A study is currently underway to examine the effects of a sleep science curriculum in elementary school students (Li, Roveda, Powers, Perfect, & Quan, 2017). The students learn about sleep quality, duration, and consistency by conducting research projects based on grade level data that they collected themselves. This process allows students to discover findings about sleep through their investigations, instead of information being conveyed to them in traditional formats. Contrary to studies that have been conducted previously in which the focus was on immediate impacts, the effects of this sleep science program and others could be viewed from a preventive lens, in that they may buffer against future sleep problems. Because it is important to track outcomes at every level, school-based practitioners may wish to include

assessments that are relevant to the goals of the program, such as changes in knowledge, attitudes, or habits.

At Tier II, or with secondary prevention approaches, the aim would be to identify early onset of sleep difficulties or prevent the symptoms from worsening (Clayton et al., 2010). First, according to Gruber (2017), schools should use screening measures to ascertain the scope of the problem (i.e., sleep insufficiency). As part of this process, they could administer a brief sleep questionnaire to students and/or parents that assesses the amount of sleep they obtain each night, the perceived quality of their sleep, difficulties with falling asleep and staying asleep, sleep patterns (inconsistency), and daytime sleepiness. Sleep health would be targeted in small groups or with individuals identified as being at higher risk. For instance, when Bonnar and colleagues (2015) examined a subgroup of students who exhibited phase delay, they discovered that although both parental involvement and bright light independently led to increased sleep duration overall, total sleep time increased even more among those with phase delay. Tier III interventions would include individualized interventions. At this level, or with tertiary prevention strategies, the objective is to offer accommodations that address sleep as a way to meet target goals for students who are identified as having a sleep disorder or impairment as a result of sleep difficulties. Any of the aforementioned interventions may be implemented with proper training and means.

Tracking the effectiveness of sleep-based interventions implemented at school would also be important to determine not only whether sleep improves but also whether changes contribute to other outcomes, such as school performance or social-emotional factors. One possible methodological approach involves using a multiple baseline design (Sexton-Radek, 2014). The student would be provided with a sleep diary and an accelerometer, if available. Parent-reported data should be collected. The baseline period would only involve data collection, not an intervention. The treatment phase would occur once a baseline of sleep behaviors has been established (1–2 weeks are recommended). The intervention length would depend on the approach used. For instance, a hypnotic intervention with daily practice may last 2 weeks, but a cognitive behavioral intervention for insomnia may require 6 to 8 weeks to implement all components (Norell-Clarke, Nyander, & Jansson-Fröjmark, 2011). Daily sleep metrics should be tracked during the intervention. A more robust design would involve a third phase, in which the intervention would be discontinued but sleep would continue to be tracked to assess the potential for sleep difficulties to reemerge in the absence of targeted support. If the sleep problems resurfaced, the practitioner could reintroduce the intervention and measure outcomes.

SCHOOL-BASED CASE EXAMPLE

Jesse (a pseudonym) is a 16-year-old boy attending the 11th grade. He reported having severe difficulties falling asleep and waking up in the morning, occurring daily despite adequate opportunities for sleep. He reported

that the onset of these difficulties began approximately 1 year ago. Since then, the issues have been persistent and are significantly impacting his mood, functioning at school, and overall quality of life. Jesse goes to bed around 10:00 p.m. on weekdays. He has substantial difficulty falling asleep and reports that it can take him several hours to fall asleep, and he sometimes stays up until 2:00 a.m. His alarm goes off around 7:00 a.m. for school, but he often presses snooze on his alarm several times because he cannot wake up. His mother reported that she has to physically remove him from his bed some mornings because he will not wake up. He misses school frequently because he is unable to wake up or is too physically exhausted to go. Even when he does make it to school, he has fallen asleep at his desk. On weekends, he stays up until 2:00 a.m. and sleeps until 12:00 p.m. the following day. He experiences excessive daytime sleepiness (EDS), as measured by the Epworth Sleepiness Scale (Total Score = 10). In addition to his difficulty initiating sleep, he reportedly snores loudly and frequently wakes up with a headache and dry mouth. Despite these difficulties, he has never undergone a sleep study and is not currently taking any sleep medication.

Case Conceptualization

Jesse is likely experiencing a circadian rhythm disorder. Specifically, his sleep pattern of not falling asleep until 2:00 a.m. and desire to sleep until noon fits a diagnosis of delayed sleep phase syndrome (DSPS). In addition to issues related to the timing of sleep, there is also some indication that he may have SDB given that he snores loudly, exhibits EDS, and experiences headaches and dry mouth on awakening. Data should be collected on his sleep–wake schedule to confirm a pattern of DSPS, as well as to monitor treatment progress. Several recommendations can be applied at school and home, in addition to a referral to a sleep specialist.

Sleep-Related Suggestions, Accommodations, and Modifications

- Jesse’s parents should request a meeting with his school to discuss the development of a 504 plan to provide accommodations to ensure he is able to access the general education curriculum. His parents may also request an evaluation to determine whether he would qualify for an individualized education plan under the category of Other Health Impairment based on the diagnosis of a sleep disorder that is adversely impacting his educational performance.
- On the basis of his diagnosis of DSPS, his school should consider allowing for a late start time by adjusting his class schedule such that his core academic courses are later in the day to prevent loss of learning when he is unable to attend class due to his sleep disorder.
- Jesse should not be penalized for being tardy and should be permitted to make up any missed work for the morning classes. Treatment may also

warrant Jesse being excused from school for 1 to 2 weeks to allow for a shift in his sleep schedule. In some states, if the student misses full days as part of this treatment, he may qualify for homebound instruction during this period.

- A main treatment for DSPS is the use of bright light therapy. If using light therapy, Jesse should be permitted to bring the light box to school to use in first period.
- Jesse should be monitored to ensure he is not falling asleep during the school day, which would interfere with treatment that is trying to reset his sleep schedule.
- Consider a modification of homework to emphasize mastery over quantity while the student is working on shifting his sleep schedule (e.g., going to bed earlier) or taking medication (e.g., melatonin) that may make them drowsy.
- On the basis of the presenting symptoms, the student will likely be referred for a sleep study to assess for SDB. If SDB is present, the school should provide accommodations to address the daytime effects associated with SDB.

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23

Treating Pain in School Settings

Targeting Biological and Psychological Factors in Pain Management

Angela Starkweather, Xiaomei Cong, and Heather Evans

It is estimated that one in four children have episodes of chronic pain that last 3 months or longer (King et al., 2011; Kortterink, Diederer, Benninga, & Tabbers, 2015). As in adult populations, the prevalence of chronic pain is higher in females than males and increases with age (pubertal development). The median prevalence of idiopathic pain in community-based samples of children ranges from 11% to 38%, with the most common chronic pain conditions being reported in up to 51% for headache, 41.2% for abdominal pain, up to 40% for musculoskeletal pain, and 24% for low back pain (Brun Sundblad, Saartok, & Engström, 2007; Kortterink et al., 2015; McBeth & Jones, 2007). Chronic pain is associated with a significant psychosocial and physical burden for children and families and ranks as one of the most costly health conditions in the United States at an estimated \$19.5 billion per year (Groenewald, Essner, Wright, Fesinmeyer, & Palermo, 2014).

The experience of pain involves interactions among biological, psychological, and social factors that influence pain perception and pain management outcomes. Because the experience of pain is highly subjective, most interventions are focused at the tertiary level to coordinate an individualized plan that involves medical case management. Interventions for children with chronic pain are ideally tailored to the context of the individual but should also encompass parents, families, schools, and other institutions that support the development of the child (Coakley & Wihak, 2017). Primary and secondary interventions focused on helping children develop knowledge and skills in

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self-regulation and self-efficacy can also be beneficial in helping the child with chronic pain develop healthy coping behaviors and provide the opportunity to promote social peer interactions.

Effective multimodal treatment for pain in children entails efforts to reduce pain severity, interference with daily activities and preservation of physical, psychological, social, and role functions. A major goal is to prevent immediate and future disability; there is convincing evidence that childhood pain predisposes an individual for pain chronicity and development of comorbid pain disorders in adulthood (Walker, Dengler-Crish, Rippel, & Bruehl, 2010). With an increased focus on functional outcomes of pain management, the school setting is an appropriate area of concentration for intervention and to evaluate outcomes because pain can interfere with attendance, academic performance, and peer relationships. Ideally, the school setting provides adequate accommodations, resources, and social support for managing pain. Children with chronic pain that prevents them from participating in school and preferred activities can experience loss of positive reinforcement, friendships, and positive self-esteem. In addition, peer bullying or victimization can also be a problem for children with chronic pain in the school setting, which can become an additional reason to use avoidance coping strategies that place children at further risk of not being able to accomplish their academic goals (Vervoort, Logan, Goubert, De Clercq, & Hublet, 2014).

Maintaining a safe and nurturing environment is particularly important for the child with chronic pain; however, it is also imperative to preserve the system of accountability for academic performance that is consistent with peers. The social stigma of being labeled with a chronic pain condition can have a powerful influence on self-identity. Therefore, assisting children and adolescents with chronic pain to view the pain as a condition to be managed rather than a condition that dictates their behavior and/or activities is a crucial element of pain management. A consistent message of supportive accountability from school administration, teachers, and staff will help the child affected by pain to demonstrate developmentally appropriate behaviors and build effective coping mechanisms for managing pain.

OVERVIEW OF CHRONIC PAIN IN CHILDREN

Pain is defined as “an unpleasant sensory and/or emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (International Association for the Study of Pain, 1994, p. 209). The nociceptive system has been conserved in most organisms in varying levels and sensitivities through millions of years (Garland, 2012). Pain is a mechanism that was evolutionarily developed to avoid harm, protect damaged tissue, and increase the overall survivability of the organism. In contrast, chronic pain serves no useful purpose and compromises psychological, physical, and social functioning. In some instances, acute pain develops into chronic pain (Landry et al., 2015).

During acute pain, primary afferent nerves are activated and send pain signals to the dorsal horn neurons, and from there the pain signals continue to be transmitted to the spinal cord and brain (Starkweather & Pair, 2013). For most individuals, the acute pain resolves with the healing of the injury or resolution of the inciting event. However, due to genetic predisposition, the characteristics of the injury or inciting event, and other biological, psychological, or developmental risk factors, the pain can continue in some individuals long past the normal duration of healing and can become a pathological condition in and of itself (Yazdani & Zeltzer, 2013). Individuals who develop chronic pain tend to exhibit signs of *central sensitization*, a state of nociceptive facilitation that produces an exaggerated response to painful and nonpainful stimuli. This process of dysregulated pain signaling can occur due to direct physical injury as well as a consequence of illness, traumatic psychological events, and immobility (Heim, Newport, Bonsall, Miller, & Nemeroff, 2001; Jiao et al., 2015).

The development and maintenance of chronic pain involves changes in peripheral, spinal, and brain neural pain networks (Melzack, 1999). These changes result in a widespread activation of multiple cortical and subcortical areas of the brain, including the primary and secondary somatosensory centers, amygdala, anterior cingulate, prefrontal cortices, and thalamus (Hashmi et al., 2013; Tracey & Mantyh, 2007; Wager et al., 2013). Human functional brain imaging studies have shown that as chronic pain develops, there is a shift away from engaging distinct cortical and subcortical regions involved in processing the sensory component of pain toward regions that activate emotional and motivational subjective states (Bushnell, Ceko, & Low, 2013). These regions of the brain are associated with functions such as working memory, learning, and emotional regulation, and plasticity in the patterns of activating these areas may contribute to the cognitive and emotional difficulties and subsequent challenges in the school environment confronted by individuals with chronic pain (Logan, Simons, & Kaczynski, 2009). It is well documented that individuals with chronic pain experience increased rates of anxiety and depression, impaired working memory, and difficulty with emotional decision making. However, recent studies have shown that normalization of brain structure and function can occur in response to effective interventions for chronic pain, indicating that brain plasticity can be bidirectional (Seminowicz et al., 2013; Shpaner et al., 2014).

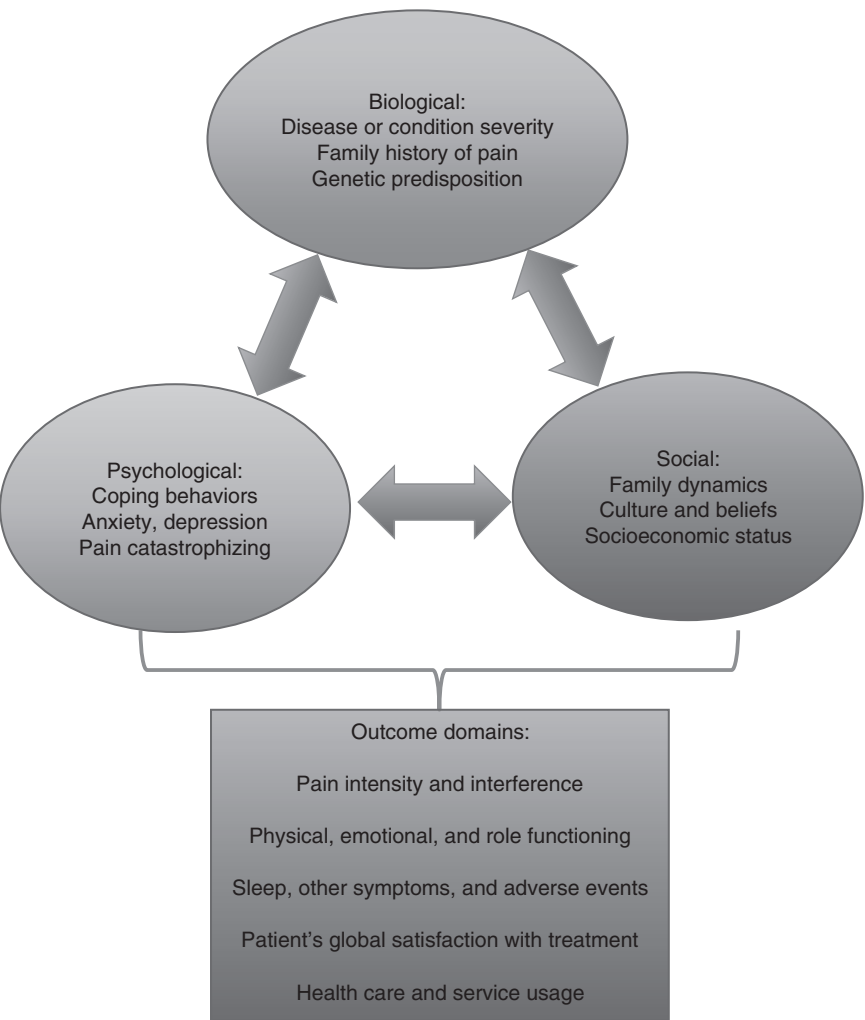
BIOPSYCHOSOCIAL MODEL OF CHRONIC PAIN

One of the most widely accepted models for guiding chronic pain management is the biopsychosocial model of pain. This model depicts the interactions among biological, psychological, and sociocultural factors that influence the impact of pain on the individual (Gatchel, Peng, Peters, Fuchs, & Turk, 2007). A basic premise of the model is the distinction between pain as disease and pain as illness. *Disease* represents the pathophysiological process of nociception

whether it is through tissue injury, a neural lesion, or other source, whereas *illness* refers to the subjective experience of pain and its impact on individual functioning. Nociceptive input is filtered through an individual's biological (anatomical, physiological, genetic) architecture, psychological status, and sociocultural context, with each of these factors contributing to how the individual lives with and responds to the perception of pain (illness).

The pathophysiological underpinnings of chronic pain are shaped by psychological factors, such as anxiety and depression, as well as social factors, including the individual's history of pain and its meaning (see Figure 23.1). These factors are in constant interaction and influence pain processing and perception. For many individuals who experience chronic pain, there are psychological comorbidities that accompany the experience of pain, and other conditions or symptoms are also prevalent (Tran et al., 2015). In a study that

FIGURE 23.1. Biopsychosocial Model of Pediatric Chronic Pain



included 1,518 adolescents ages 11 to 19 years, 11.4% reported chronic pain, and 25.6% reported sleep disturbance; however, the overall prevalence of comorbid chronic pain and sleep disturbance was 19.1% (Siu, Chan, Wong, & Wong, 2012). Risk factors for comorbid pain and sleep disturbance included being female and having depressive symptoms and perceived stress.

In the context of chronic pain in children, the experience of pain must be understood within a developmental context, both physiological and cognitive (Roessler et al., 2016). Parental behaviors about pain and response to their child's pain can have a significant influence on the meaning of pain to the child (Sieberg & Manganello, 2015). Children who have a parent with chronic pain learn the meaning of pain and accepted coping strategies by observing their family members' response to pain (Wilson, Moss, Palermo, & Fales, 2014). In addition to modeling pain coping strategies, the parents' response to their child's pain can influence pain expression, coping, and disability. Parental distress about their child's pain is associated with higher levels of parent protective behaviors, helplessness, and child functional disability (Caes, Vervoort, Eccleston, Vandenhende, & Goubert, 2011).

However, not all support systems of children with pain endorse the biopsychosocial model. In a study that examined teachers' attributions about the causes of chronic pain in adolescent students, it was found that documented medical evidence supporting the pain was the most influential factor in eliciting sympathy and academic accommodations (Logan, Catanese, Coakley, & Scharff, 2007). Children with pain often report that school personnel do not understand their pain or believe it is real. A teacher's ability to sincerely acknowledge a student's report of pain and express a shared perspective about identifying possible ways to reduce pain and/or psychological stress may improve school functioning.

A randomized controlled trial demonstrated that educating teachers about chronic pain associated with sickle cell disease through written materials and in-services with a member of the health care team led to fewer absences among children with sickle cell anemia (Koontz, Short, Kalinyak, & Noll, 2004). A more recent cross-sectional study examined child and adolescent pain severity in relation to domains of school functioning and the protective role of perceived teacher support of child and adolescent autonomy and confidence (Vervoort et al., 2014). In the study, data from 10,650 school children and adolescents were collected as part of the World Health Organization collaborative Health Behavior in School-Aged Children survey. Approximately 14% of children and adolescents reported moderate to severe pain problems, and higher pain was associated with poorer outcomes across all domains of school functioning (absenteeism, school-related pressure and satisfaction, and bullying experiences), with the exception of academic performance. However, in children who perceived their teachers to be highly supportive of competence and autonomy, the association between pain severity and absenteeism was less pronounced, and teacher support of competence was protective against the harmful effects of severe pain on instances of bullying experiences at school.

As a significant element of the psychological and social realms of chronic pain, the school environment, teachers, peers, and staff all contribute to the experience of pain in children and adolescents. A holistic approach to pain management should therefore also address each of these factors to position children to successfully manage their pain in the school setting. This may entail regular communication among the child or adolescent, parents, health care providers, teachers, and school administrators.

SCHOOL-BASED INTERVENTIONS FOR CHRONIC PAIN

Medical Management of Chronic Pain

Medication management for chronic pain may entail the use of analgesics, antidepressants, anticonvulsants, and antihypertensive medications (Landry et al., 2015). For most individuals, common side effects include drowsiness, dry mouth, and nausea, particularly with titrating dosage. The use of antidepressant medications blocks the reuptake of central neurotransmitters, such as serotonin and norepinephrine, which are involved in blocking pain signaling and therefore may reduce pain perception. Anticonvulsants act by blocking the transmission of pain signals in the periphery and spinal cord. When medications are used for chronic pain, the child may experience difficulty with side effects and require monitoring as dosages are adjusted. Coordination of medications should take place with the school nurse if dosages are to be administered during the school day and to provide monitoring of outcome and side effects. Protocols for assessment, evaluation, and documentation can be developed to assist in communication with the health care team (Sprague-McRae & Rosenblum, 2013).

Special Considerations

Opioid medications that are administered as part of a chronic pain management plan should be appropriately secured in a lockbox, with a daily administration record to document the pill count. Due to the high risk associated with opioid medications, a school opioid administration policy may entail having two personnel present during the pill counts and medication administration and to ensure secure storage.

Tiered Service Delivery Model

Medical case management is at the tertiary level to coordinate communication and planning among the child or adolescent, family, and health care providers. The school nurse can ideally serve as the point of contact for medical case management.

PAIN EDUCATION

Pain education is a foundational aspect of chronic pain management and can be delivered to individuals, families, or groups. The goal of providing pain education is to increase awareness of body mechanics and repetitive injuries and knowledge of how to prevent injury and manage pain when it does occur. School-based programs for pain education have largely focused on back pain; however, a systematic review of 11 studies on back pain education found weak evidence of the efficacy of school-based interventions on increasing spinal care knowledge and decreasing the prevalence of spinal pain (Steele, Dawson, & Hiller, 2006).

In a study to test the efficacy of a 2-year back education program among school-aged children, 193 children were administered the intervention and were compared with 172 controls (Geldhof, Cardon, De Bourdeaudhuij, & De Clercq, 2006). The back education program and simulations resulted in increased back posture knowledge, improved postural behavior during material handling, and decreased duration of trunk flexion and neck torsion during lesson time. However, not all pain education programs have been found to result in long-term improvement in pain outcomes. Dolphens and colleagues (2011) delivered a 6-week school-based back education program that was primarily focused on biomechanics to 96 subjects and compared long-term outcomes with 98 controls, all of whom were 9 to 11 years of age at baseline. Posttests were performed within 1 week after program completion, after 1 year, and after 8 years. Although pain prevalence increased less in the experimental group, it was not statistically significant and did not change behavior or self-efficacy.

More recently, the benefits of providing neuroscience pain education as a component of chronic pain education have emerged (Louw, Diener, Butler, & Puentedura, 2011). This approach includes a description of the neurobiology and neurophysiology of chronic pain, with a focus on deemphasizing anatomical issues and, instead, concentrating on the impact of the central nervous system on pain outcomes. Among adolescents with neck pain, a school-based neuroscience education and exercise intervention was undertaken (Andias, Neto, & Silva, 2018). Unfortunately, the sample size was small in this randomized controlled trial, and the differences did not reach statistical significance. However, the study did find that the approach was feasible, and participants in the intervention group had a significant increase in neck extensors endurance capacity and knowledge of pain neurophysiology, along with a higher mean decrease in pain intensity, pain catastrophizing, and anxiety compared with the control group.

A more general approach to disseminating pain education was undertaken by Wager, Stahlschmidt, Heuer, Troche, and Zernikow (2018) through evaluating the effect of a short educational movie for promoting chronic pain literacy that was added to a school-based health education program. In the

study, 95 adolescents viewed the educational movie, and the researchers found a significant increase in pain knowledge for all participants, with a larger gain in pain knowledge for students with frequent pain.

Special Considerations

Delivery of pain education can take place at the primary level, involving school- or classroom-wide implementation, at the secondary level for specialized groups or the tertiary level for individuals with intensive needs. In each of these approaches, staff preparation in teaching the content and answering questions that may relate to the health care system is important. Materials in written form may be included to assist students in learning the knowledge and skills of chronic pain management.

Tiered Service Delivery Model

Primary interventions in pain education may be general in nature and encompass information about the most common chronic pain conditions in children and adolescent populations. Secondary interventions may be geared toward students who are experiencing chronic pain and include information on resources within the school to assist students in managing pain. Tertiary interventions involve working within individual students who are affected by chronic pain and developing a tailored chronic pain management plan with the student, health care professionals, and school staff.

COGNITIVE BEHAVIORAL INTERVENTIONS

Cognitive behavior therapy (CBT) interventions for chronic pain have been developed for individual children, groups, and families (see Chapter 21, this volume). Family-based interventions using CBT have shown that this form of treatment can result in less perceived pain and fewer school absences than children receiving medical treatment alone (Robins, Smith, Glutting, & Bishop, 2005; Sanders, Shepherd, Cleghorn, & Woolford, 1994). A meta-synthesis of 35 studies using different modes of psychological therapies for chronic pain in children showed that they can significantly reduce pain and disability in youth with headaches, abdominal pain, and musculoskeletal pain (Fisher et al., 2014). Although school-based CBT has been used to address mental health problems in adolescents, particularly depression and anxiety, it has not been studied in individuals with chronic pain (Kavanagh et al., 2009). Because it has been shown to be successfully used to treat mood disturbances when delivered in a multicomponent, group format, its use in children and adolescents with chronic pain appears feasible.

Acceptance and commitment therapy (ACT) is a CBT intervention that focuses on acceptance of the present condition and commitment toward adapting to the present condition instead of changing it. A study using a

school-based ACT program (Strong Minds) was evaluated in a randomized controlled trial with a sample of 267 high school students (10th and 11th graders; Burckhardt, Manicavasagar, Batterham, & Hadzi-Pavlovic, 2016). Compared with the control group, participants in the Strong Minds intervention reported significant reductions in depression, stress, and composite depression and anxiety scores, as well as increased well-being. There have not been any studies to date testing school-based ACT interventions for students with chronic pain.

A school psychologist can be instrumental in providing one-on-one CBT for children affected by chronic pain, as well as general counseling. Communication between the school psychologist, school nurse, and the child's health care provider can be extremely valuable in ensuring consistent instruction to the child and family and to develop shared treatment goals and assessment of treatment outcomes.

Special Considerations

CBT for chronic pain should be delivered by adequately trained and supported school staff, and programs of at least 10 weeks duration are recommended. Adequate support for dealing with negative emotions and the possibility of suicidal ideation should be addressed, as well as the potential adverse effects related to social stigma.

Tiered Service Delivery Model

CBT can be delivered in a group format as a secondary intervention or delivered to individuals with chronic pain as a tertiary intervention.

RELAXATION, STRESS MANAGEMENT, AND BIOFEEDBACK

Relaxation and stress management techniques are core skills included in multidimensional pain management. *Relaxation* strategies work by eliciting the relaxation response that slows the heart rate and breath and decreases muscle tension. The physiological changes associated with the relaxation response not only help reduce pain but may also help the child develop a sense of mastery over the pain (Landry et al., 2015). Relaxation therapy has been shown to reduce pain in adolescents with tension-type headaches or migraines when delivered in a school-based setting (Larsson, Carlsson, Fichtel, & Melin, 2005). In a series of randomized controlled trials that included over 288 adolescents aged 10 to 18 years who experienced frequent tension-type headache or migraines for at least 1 year, the effects of therapist-led treatment for migraines and nurse-led treatment for tension-type headaches was shown on reducing total headache activity, number of headache days, and peak headache intensity. In addition, treatment gains were maintained at 6- and 10-month follow-ups.

Biofeedback is a tool that measures the body's response to relaxation or meditation and provides information back to the individual about specific physiological functions. This may include fingertip skin temperature, breathing, pulse, heart-rate variability, and more recently, brain electroencephalogram. Children and adolescents can be taught to practice diaphragmatic breathing, progressive muscle relaxation, and imagery to obtain a state of relaxation, often in only one or more sessions (Lee, Crawford, & Hickey, 2014). Practicing the skills daily can help to achieve an effective long-term response. In a controlled, longitudinal study, third-grade children participated in a teacher-led daily 10-minute stress reduction intervention for 4 months (Bothe, Grignon, & Olness, 2014). The control class teacher read from a children's book for 10 minutes daily, and all students used a computer biofeedback program to measure anxiety and heart-rate variability at immediate post-intervention and at 1 year. The intervention class had a significant improvement in anxiety and a small improvement in heart-rate variability at immediate post-intervention and significant improvement in both anxiety and heart-rate variability at 1 year compared with the control group.

Special Considerations

Relaxation, stress management, and biofeedback training can take place at the primary level, involving school- or classroom-wide implementation at the secondary level for specialized groups or the tertiary level for individuals with intensive needs. In each of these approaches, staff preparation in teaching the content would be required. Materials in written form may be included to assist students in learning the knowledge and skills to practice. Biofeedback can be performed using mobile devices or computer software.

Tiered Service Delivery Model

Relaxation, stress management, and biofeedback can be generic and geared toward a primary level intervention while still providing benefit to students with chronic pain. Such an approach would minimize stigmatizing students who experience chronic pain. Secondary and tertiary interventions using relaxation, stress management, and biofeedback for chronic pain can also be developed and used specifically for students with chronic pain conditions.

MINDFULNESS-BASED INTERVENTIONS

Mindfulness-based therapies include guided imagery, deep breathing, and relaxation (see Chapter 9, this volume, for more information). In individuals with chronic pain, mindfulness has been used as an attention-based coping strategy and has been shown to reduce pain severity in a range of chronic pain conditions. To examine the effect of state mindfulness on experimental pain among adolescents, Petter, McGrath, Chambers, and Dick (2014) randomized

198 adolescents to a mindful attention manipulation or control group before the experimental pain task. Although the manipulation had no direct effect on pain thresholds, a secondary analysis showed that meditation moderated the effect of the manipulation, and state mindfulness predicted pain outcomes with reductions in situational catastrophizing mediating this relationship.

A review of 16 studies published on the effects of mindfulness-based interventions in individuals with chronic pain found that a majority showed significantly decreased pain intensity compared with controls, and the results were well maintained over time (Reiner, Tibi, & Lipsitz, 2013). The authors suggested two potentially synergistic mechanisms by which mindfulness-based interventions may help to relieve pain intensity: by accepting pain, reducing avoidance and other efforts to control pain, and diverting attention to goals they can achieve, as well as by detaching the cognitive and emotional components of pain from the sensory component. Among adolescents with chronic pain, an adapted mindfulness program was shown to be feasible and acceptable and led to improved body awareness and ability to cope with stressors (Ruskin, Gagnon, Kohut, Stinson, & Walker, 2017). In a follow-up study, the participants reported positive experiences in the mindfulness-based program, including learning mindfulness skills (present moment awareness, pain acceptance, and emotion regulation) and receiving support from peers (Ruskin, Harris, et al., 2017). Suggestions to improve the program included increasing the number of sessions and clarity on the intention of the intervention from the outset regarding a focus on reducing emotional suffering rather than physical pain.

Special Considerations

Mindfulness-based interventions follow a specific curriculum and require a trained individual to deliver the intervention. Written materials can be used to supplement the training and practice.

Tiered Service Delivery Model

Mindfulness-based interventions can be delivered as a primary intervention geared toward the general student population. Secondary approaches can be used for groups of students who are affected by chronic pain conditions. Mindfulness-based interventions for individuals with special needs can also be delivered on a one-to-one basis and include tailored information based on the needs of the student with chronic pain.

YOGA

Yoga has been shown to be an effective, evidence-based therapy for musculoskeletal pain such as low back pain (Lee et al., 2014; see Chapter 13, this volume, for more on yoga). A recent systematic review on the efficacy of

yoga in school-based settings that included 47 publications found that yoga is a viable and potentially efficacious strategy for improving child and adolescent health (Khalsa & Butzer, 2016). In these studies, there were both subjective benefits reported as well as objective benefits identified. However, there was a high degree of variability across the studies concerning the characteristics of the yoga interventions, and there were numerous study design limitations. Given the multiple areas of potential benefit on mental, emotional, physical, and behavioral health, additional research including children and adolescents with chronic pain should be undertaken.

Special Considerations

Trained personnel are needed to deliver yoga-based interventions, which should include basic stretching, breathing, and movements (poses) to minimize the risk of injury. Space may be needed for poses that require a wide stance or for floor work. Depending on the type of poses, yoga mats are typically used for any floor work. Students with disabilities may need additional personnel to assist with movements.

Tiered Service Delivery Model

Yoga can be used as a primary level intervention delivered on a school- or classroom-wide basis either in the classroom or gym. It can be used as a group-based intervention for students with chronic pain but may need to be tailored to the specific condition. For instance, some yoga poses may aggravate the back muscles and should be avoided in students with back pain.

OTHER FORMS OF TREATMENT

For children with functional abdominal pain and irritable bowel syndrome, hypnosis therapy appears to provide significant pain improvement (Vlieger, Menko-Frankenhuis, Wolfkamp, Tromp, & Benninga, 2007). Music therapy (Kenny & Faunce, 2004) and animal-assisted therapy (Braun, Stangler, Narveson, & Pettingell, 2009; Marcus et al., 2012) have been used in patients with chronic pain but have not been tested in a school-based format.

CASE EXAMPLE

Elizabeth is a 10-year-old girl in the fourth grade who was experiencing recurrent abdominal pain (RAP). Her pain management entailed long-term opioid therapy administered at home before and after school with long-acting opioid analgesics, as well as CBT that she receives from a private psychologist. The school nurse was in communication with Elizabeth's primary health care

provider and was aware of her treatment regimen and the potential side effects. Due to the constant attention to her abdominal pain and focus on avoiding certain foods, she was alienated by her peers and usually sat alone at lunch or recess. She also had difficulty concentrating during class time and often appeared distracted. Her family was proactive in seeking medical treatment, and they were going to family therapy each week. Elizabeth's school offers a before-school yoga class in the gym as an extracurricular activity led by one of the teachers at the school. During one of Elizabeth's visits to the school nurse, the nurse suggested that Elizabeth try the yoga class as a way to learn new skills in relaxation and breathing. Elizabeth decided to join the class and enjoyed having the time to learn about meditation and the different poses they practiced. She began to be more self-aware of her thought patterns and body language, and during the class, she developed some friendships with a few of the girls who regularly attended. She grew confident in her ability to perform yoga and practiced daily at home. She also practiced the breathing techniques when she felt anxious during school. With her ongoing medical treatment and family therapy, Elizabeth's RAC subsided, and she was able to focus more on her academic goals. A weaning protocol of the long-term opioid analgesics was started, requiring administration of a short-acting opioid analgesic during school for a set duration. The school nurse coordinated the communication with the health care provider and family to administer the opioid analgesic and to observe Elizabeth for any signs of opioid withdrawal. Elizabeth's mother delivered a specific number of pills to the school nurse, and these were stored in a lockbox in the health clinic. Elizabeth went to the office each day at lunchtime to obtain her medication for several weeks. With fewer missed days of school and several friendships that developed during the yoga class, Elizabeth is now excelling in her grades, her self-esteem has improved, and she is excited about joining some other clubs at her school. The opioid weaning protocol lasted several weeks, and she is successfully tapered from using opioid medications to treat her pain. Although the yoga class was not focused on her specific chronic pain condition, it allowed her to learn new skills in relaxation, internal and external awareness, emotion regulation, and meditation. She has been able to apply those skills to her daily life and uses them as a way of coping when she does experience abdominal pain.

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School-Based Mind-Body Interventions in the Treatment of Childhood Trauma

Jacqueline A. Brown, Emily Hattouni, and Samantha Russell

According to research examining the occurrence of trauma in youth, almost two in three children will experience one or more traumatic events before reaching 18 years of age (McLaughlin et al., 2013). Although not all children will experience severe or concerning traumatic symptoms after being exposed to a traumatic event, this prevalence rate is still of great concern considering the potential short- and long-term negative effects trauma may have on a youth's development (Dorsey et al., 2017). For example, exposure to childhood trauma may result in the development of posttraumatic stress disorder (PTSD) and other related outcomes (e.g., other anxiety or mood disorders, disruptive behavior problems) and decreased academic performance, along with long-term brain changes and the presence of disease in adulthood (e.g., cancer and diabetes; Lieberman, Chu, Van Horn, & Harris, 2011; Read, van Os, Morrison, & Ross, 2005; Shonkoff, Boyce, & McEwen, 2009). Consequently, it is critical that youth exposed to trauma obtain effective support, both within and outside the school setting, to decrease their risk of experiencing long-term consequences. This chapter highlights key physiological underpinnings leading to trauma, possible adverse consequences in adulthood, and mind-body interventions that can be implemented across all tiers within the school setting and concludes with a case study illustrating the use of these interventions.

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PHYSIOLOGICAL UNDERPINNINGS LEADING TO TRAUMA IN EARLY CHILDHOOD

The experience of traumatic events can disrupt daily living and manifest through unwanted behaviors, emotions, and thoughts. Trauma can result in difficulty regulating and identifying emotions and navigating social situations and can even negatively affect important brain areas and systems (e.g., dopamine and serotonin systems, amygdala, prefrontal cortex, hypothalamic–pituitary–adrenal [HPA] axis; Lieberman et al., 2011). Exposure to one or more traumatic events at a young age can lead to an increased risk of developmental delays, problematic social and emotional functioning, and poor academic performance (Lieberman et al., 2011). Children exposed to trauma may also experience emotional dysregulation, which may manifest itself in a variety of ways, such as aggression toward teachers and other students or withdrawal from school activities. Looking at the effect of trauma on emotion regulation reveals how trauma can disrupt a child’s ability to succeed in the classroom. Investigating the biological response of the nervous system to the experience of stress and trauma demonstrates the lasting effect that exposure to trauma may have throughout a person’s life (Olofsson, Lindqvist, Shaw, & Danielsson, 2012).

The regulation of one’s emotional states is an important skill for social interaction and classroom success. For example, Panlilio, Harden, and Harring (2018) found that children identified as emotionally dysregulated scored significantly lower on achievement tests of reading and math than children described as emotionally regulated by parent reports. Furthermore, exposure to traumatic events can interfere with one’s ability to regulate emotions and interact with others. Marusak, Martin, Etkin, and Thomason (2015) showed that a group of trauma-exposed youth had greater difficulty discriminating the facial expressions of their peers (i.e., fear vs. happiness) than a comparison group of children who had not experienced trauma. The group of children who experienced trauma also showed overactivity in regions of the brain associated with threat detection (i.e., amygdala). This suggests that children exposed to trauma are prone to mistaking their peers’ emotions as aggressive, making it more challenging for them to get along with others. Effective therapeutic interventions and treatment for trauma-exposed youth must, therefore, address the ability to regulate emotions.

In addition to disrupting emotion regulation, the negative impact of trauma can also emanate from the physiological reaction within the brain and nervous system. The biological mechanism responsible for responding to stress includes specific brain structures and systems, such as the HPA axis and, more broadly, the sympathetic nervous system (SNS; De Bellis & Zisk, 2014). These interacting systems are meant to prepare an individual to respond to the stressful event. When the SNS is activated, there is an increase in blood pressure and stress hormones and a shift in biological resources that prepare someone for “fight or flight” (Chrousos & Gold, 1992). Contributing to the

activation of the SNS, the HPA axis is partially responsible for taking in and processing information during times of high stress. Signals from this region of the brain can release neurotransmitters and hormones, such as dopamine and cortisol, to address the stressful environment.

Studies have found that exposure to childhood trauma interacts with a genetic predisposition in the HPA axis, increasing the likelihood of PTSD symptoms (e.g., Xie et al., 2010). The HPA axis responds to a traumatic event through signaling and activation of various stress response systems. However, if the HPA axis is repeatedly activated or if the event that activates the system is particularly potent, the brain region can be fundamentally changed to increase sensitivity to stress (Bowirrat et al., 2010). Along these same lines, traumatic experiences in childhood can trigger stress responses in the brain, leading to lasting effects on the functioning of these brain regions (Anda et al., 2006; Bowirrat et al., 2010). Overall, researchers have emphasized the importance of early detection and intervention services for children exposed to trauma.

IMPLICATIONS FOR LATER FUNCTIONING IN ADOLESCENCE AND ADULTHOOD

The experience of early childhood trauma has multiple effects on a person's functioning during adolescence and adulthood (De Bellis & Zisk, 2014). The effects are broad, with multiple studies finding connections with conditions spanning physical ailments (e.g., cancer and diabetes) to psychopathologies (e.g., depression, PTSD, and even schizophrenia) and highlighting the many biological effects that childhood trauma imposes on later functioning (Read et al., 2005; Shonkoff et al., 2009). Research has shown that when children are exposed to particularly stressful events early in life, changes can occur in their neuroanatomy and physiological composition (Anda et al., 2006). These changes can have lasting effects on their ability to manage their emotions, navigate life challenges, and cope with stressful events (Shonkoff et al., 2009).

One of the most prominent efforts to evaluate the various impacts of trauma in early childhood is the Adverse Childhood Experiences (ACE) Study, which was conducted by the American health maintenance organization Kaiser Permanente and the Centers for Disease Control and Prevention (CDC; CDC, 2016; Felitti et al., 1998). The study recruited participants from 1995 to 1997 who participated in long-term follow-up health monitoring. Numerous scientific explorations have examined the data collected from this effort, and nearly all measured outcomes suggest a strong association between ACEs and social and health problems in later adulthood (CDC, 2016). Naturally, biological implications and changes have been identified among the results of childhood trauma through the ACE Study (Anda et al., 2006). Anda and colleagues (2006) evaluated the data of approximately 17,300 participants from the ACE Study, with their results showing a dose-response relationship between the

number of ACEs an individual experienced and the number of corresponding affective symptoms (emotional), somatic symptoms (body pain complaints), presence of substance abuse, memory problems, and aggressive behaviors. In other words, the more ACEs reported by an individual, the more problems she or he experienced across several functional domains (Anda et al., 2006). This further highlights the importance of implementing interventions designed to support children with adverse experiences in their early development.

As previously noted, other studies have suggested that the HPA system is dysregulated in response to traumatic experiences in early childhood (De Bellis & Zisk, 2014). The dysregulation of this important stress-response system is thought to underscore the problems observed in later life functioning, including substance abuse, poor health outcomes, and psychopathologies (De Bellis & Zisk, 2014). Consequently, early exposure to traumatic experiences (e.g., under 5 years of age) can lead to structural changes in the brain, which are immediate and continue into adulthood.

Shonkoff et al. (2009) identified two ways in which adults are biologically affected by trauma experienced in their early life development: (a) damage to the structures of the brain is cumulative due to ongoing traumatic experiences throughout early development, or (b) early traumatic experiences create an embedded traumatic effect in brain development that is introduced in sensitive developmental periods and has lasting effects. In addition, Shonkoff and colleagues indicated that there is a gap between the time that the trauma is experienced and when the later biological impacts emerge (e.g., physical illnesses or psychopathology). Overall, the evidence for biological effects due to early childhood trauma is extensive, with a number of biological implications affecting multiple domains of functioning across the lifespan (e.g., De Bellis & Zisk, 2014; Shonkoff et al., 2009). Collectively, this research suggests that modes of intervening early in a child's life and providing effective support for their development are worthy investments because it makes for a healthier and happier life.

Trauma not only affects the physiological networks of the developing brain in young childhood but also makes children more susceptible to certain psychological problems. Several studies have highlighted the effects of childhood trauma on functioning later in life and how those early experiences might make an individual more vulnerable to maladaptive patterns of behavior and mental health issues. For example, childhood trauma is a strong risk factor for the development of PTSD, which includes the dysregulation of various physiological systems involved in the stress response (including the HPA axis and cortisol regulation), rendering an individual more sensitive to the experience of distress when faced with stressful events and emotions (Yehuda, Halligan, & Grossman, 2001). Other studies have highlighted the increased prevalence of depression (Caspi et al., 2003) and even more extreme forms of psychopathology, such as schizophrenia (Read et al., 2005), among adults who reported early traumatic experiences. Importantly, research has suggested that children who have been exposed to traumatic experiences show higher levels

of both externalizing symptoms (males) or internalizing behaviors (females) compared with children who have not experienced trauma (Haller & Chassin, 2012). The overall impact of early childhood traumatic experiences is alarming, both in their physiological and behavioral outcomes. Given this information, it is imperative that schools and caregivers do their best to mediate these effects using the best and most empirically supported methods possible.

EVIDENCE-BASED MIND–BODY INTERVENTIONS FOR TRAUMA

A variety of treatment approaches can be used to treat trauma in youth effectively. Although this chapter focuses on mind–body interventions, it is important to note that recent research (Dorsey et al., 2017) showed that, overall, mind–body interventions are possibly efficacious for childhood trauma. However, other well-established treatments, such as trauma-focused cognitive behavior therapy (TF-CBT), integrate components of mind–body interventions (e.g., mindful breathing and relaxation, mental or guided imagery techniques). Furthermore, other mind–body techniques, such as biofeedback, are paired with cognitive behavior therapy (CBT) and exposure techniques to help youth process their trauma. There is some good preliminary evidence that exists that suggests that mind–body techniques are a helpful approach to treating youth, particularly when used in combination with other treatments (Allen & Johnson, 2012; Edwards, 2016; Hamiel, 2005; Thornback & Muller, 2015).

Mindfulness and Relaxation Techniques for Trauma

There is evidence to suggest an inverse relationship between trauma and mindfulness, influenced by styles of emotion regulation (Im & Follette, 2016). In other words, individuals who reported exposure to trauma scored lower on measures of mindfulness, especially when they used maladaptive forms of emotional regulation, such as rumination. Targeting emotional regulation may be particularly beneficial when introducing interventions for trauma in youth due to the impact of trauma on the ability to regulate anxiety and increased likelihood of engaging in continuous, repetitive thinking (e.g., worry and rumination; Im & Follette, 2016). Thornback and Muller (2015) found that improvements in emotion dysregulation best predicted the progress maintained (i.e., reduced PTSD symptoms) for a group of trauma-exposed youth who completed trauma-focused CBT. This suggests that the utility of mindfulness-based interventions for trauma in youth may stem from the improvement of emotion regulation skills.

There are various evidence-based mindfulness interventions that can be used in schools with trauma-exposed youth (see also Chapter 9, this volume, for more information about mindfulness-based interventions in schools). Although TF-CBT (Cohen, Mannarino, & Deblinger, 2017) is not specifically

a mind–body intervention, some of the components of this therapy incorporate theories of mindfulness and mind–body interventions. TF-CBT includes psychoeducation to inform individuals about trauma, relaxation and breathing techniques to help them deal with responses to trauma, stress-management training, creation of a trauma narrative, and building skills for dealing with the expression and appraisal of emotions. Researchers have found TF-CBT significantly reduces the number of PTSD symptoms reported posttreatment (e.g., Cary & McMillen, 2012). Of the various components included in TF-CBT, Allen and Johnson (2012) found that relaxation and coping techniques were most commonly used by practitioners working in child centers. This suggests that teaching mindfulness and relaxation is useful for trauma therapy among children.

Another mindfulness-based intervention that is effective for trauma-exposed youth is mode deactivation therapy (MDT). Based on theories of emotion and cognition, including acceptance and commitment therapy, dialectical behavior therapy, and mindfulness, MDT focuses on fundamental issues of emotion regulation and appraisal through acceptance and non-judgment. In a randomized controlled study, Swart and Apsche (2014) found a 35% improvement on average for adolescents who received MDT compared with an average 5% improvement for those receiving CBT.

The feasibility of mindfulness-based interventions within the schools depends, in part, on the perceptions of the people involved with the intervention (e.g., teachers and students). In a three-tiered model of school-based interventions, mindfulness can be incorporated in myriad ways. To produce the most positive outcomes for students, trauma interventions must address emotion regulation and provide supportive environments that are perceived as safe and accepting. First, the most targeted interventions conducted with individual students do not show improvement using other methods. School psychologists or counselors trained in TF-CBT or other therapies that incorporate mindfulness strategies can provide extensive support to individual students who have experienced trauma. This can be further reinforced through teacher and parent inclusion and attempts to provide comprehensive care. Teachers can reinforce the lessons taught in therapy and even introduce classroom exercises that encourage practice with mindfulness. Classroom-based interventions, such as meditation or relaxation techniques, are accessible for teachers to use on a daily or weekly basis with groups of students or entire classrooms.

Researchers such as Harpin, Rossi, Kim, and Swanson (2016) and Renshaw (2012) have provided specific recommendations for how mindfulness can be incorporated within the school setting. For example, Renshaw described its utility at the school-wide, group, and individual level following a crisis. At the school-wide level, teachers may lead a 3-minute breathing meditation session at the beginning of the day and have students complete mindful check-ins (where students identify how they are feeling physically, mentally, and emotionally) after lunch or at the end of the day. At the small-group level, students

experiencing distress or trauma following a crisis may receive small group counseling one to two times per week to further enhance their mindfulness skills and improve their well-being and emotional regulation. Mindfulness interventions within the small-group setting may include breathing, body scan (e.g., directing one's awareness to each area of the body), and walking meditations. Individual students with more severe emotional, social, and physical distress following a traumatic event may require a more intensive mindfulness-based treatment that focuses on the development of some of the skills noted earlier to address their symptoms. Mindfulness has a versatile range of applications, but the skills cultivated through mindfulness practice can directly address the needs of trauma-exposed youth.

Biofeedback and Trauma

Biofeedback is a mind–body and behavioral technique used to help people, including children and adolescents, gain control over their physiological arousal (Hamiel, 2005). The body's many natural responses to stress and pain, for example, are accompanied by physiological reactions, such as increased heart rate, perspiration, fluctuations in body temperature, and changes in brain activity (Frank, Khorshid, Kiffer, Moravec, & McKee, 2010). These physiological reactions are often outside an individual's conscious awareness, and therefore, it appears that a person is not and cannot be in control of these basic processes. Biofeedback is a system of providing information about the body's physiological processes through the use of electrodes that measure these changes (Frank et al., 2010). Once individuals spend time understanding how their body feels in the presence of these states of physiological arousal, they are taught how to gain control of these physiological responses. Biofeedback operates on the basis that a person can gain control over their physical arousal, which in turn impacts their emotions and reported feelings of stress or pain. The calmer individuals feel in the face of experiencing adverse events, the less distress they experience. This calmness is cultivated by the skills learned in biofeedback (Hamiel, 2005).

Biofeedback as a service is relatively simple; however, there are essential components of the intervention that cannot be missed. It is recommended that practitioners who offer biofeedback have some formal training to offer the therapy in a clinical setting or the opportunity to be supervised by a clinician who has formal experience (Association for Applied Psychophysiology and Biofeedback, 2011). When biofeedback is provided to clients, such as children or adolescents, essential components include the following (Khazan, 2014):

- Psychoeducation of physiological states and how they relate to emotional experiences. This involves teaching youth about how their physiological arousal is in part what creates their emotional experiences. For example, when they are angry, their heart races and their hands clench, which helps youth draw the connection between their physiological and emotional worlds.

- Training to recognize physiological states and how they are tied to emotions. This aspect of the intervention helps youth recognize that when they feel strong emotions, their physiological states change. This requires youth to identify how they feel and what their body feels like.
- Training to alter physiological states. This is at the core of biofeedback because it teaches youth that they can decrease their heart rate when they are feeling angry or upset. This, in turn, changes their emotional experience and gives them a sense of self-control over their feelings.
- Pair physiological states with CBT and exposure to processes trauma. Later on in treatment, the clinician guides youth through discussing the trauma they have experienced while receiving feedback on a screen about their physiological arousal. Youth will learn how to process the feelings related to their traumatic experience while cultivating a physiological state of calm. They often do this before receiving some reinforcement by the biofeedback system (e.g., playing a favorite song after achieving a certain heart rate).
- Integrate calm skills without biofeedback (generalization). This is the skill of cultivating the calm without the use of the biofeedback equipment, meaning that the skill can be applied in their everyday life.

Biofeedback can be useful in treating children and adolescents who have experienced trauma (Hamiel, 2005). One form of biofeedback, called *breathing biofeedback*, can be paired with helping the child or adolescent process certain traumatic events they have experienced by helping them cultivate a physical calmness voluntarily and simultaneously. Breathing biofeedback provides paced-breathing techniques and information about the rate of breathing for a child or adolescent while they are cognitively appraising the stressful event. Breathing biofeedback provides simple instructions that are easily paired with brief CBT, which is appropriate for use in the school setting (Edwards, 2016).

The benefits of biofeedback reach beyond breathing biofeedback; other forms of physiological monitoring can be used to help children and adolescents process their feelings and memories in a manageable way (Hamiel, 2005). In general, biofeedback is a tangible way for a person to learn how to practice relaxation and develop automatic pathways that can serve as coping tools (Lichtenstein, 2016). Children and adolescents can have extensive pressure from their surrounding environment to succeed. When this is coupled with a history of trauma, the reasons for learning how to control one's physiological arousal are further emphasized (Edwards, 2016). Furthermore, the use of biofeedback has been shown to effectively mitigate the biological impacts of early childhood trauma on brain development. One study showed that children with symptoms of PTSD at age 9 showed a further reduction in their symptoms 2 years later when they underwent biofeedback (Pop-Jordanova & Zorcec, 2004). Biofeedback practice also has a strong mindfulness component. These skills practiced together can help children with early trauma experiences better regulate their emotions (Hamiel, 2005).

Although purchasing the biofeedback software and receiving training can be expensive (the Biopack, the tool used to gather information from the body through electrodes, costs \$2,000–\$4,000), once the investment is made, the system can be widely used for any child who needs Tier 2 or Tier 3 services. Identifying children with PTSD and accompanying somatic symptoms can be done with basic PTSD or anxiety screening. Furthermore, because biofeedback is not necessarily time intensive (per session), it is appropriate for children already receiving services, without taking away from other treatment goals. Small group (up to five students) sessions can be effective and even more motivating for students to reach their biofeedback goals if peers are also participating. A small group format could be implemented over a class period (about 45 minutes) so that students take turns discussing their concerns related to their PTSD symptoms and practicing lowering their physiological arousal with the biofeedback equipment. Biofeedback takes some time for a child to “master”; therefore, a minimum of 10 weeks for the intervention is recommended. Sessions can be as brief as 20 minutes per individual session to see improvement. The system is straightforward and easily self-directed once the practitioner is familiar with the equipment. There is some good preliminary evidence for the effectiveness of biofeedback in supporting children with traumatic backgrounds to better regulate their emotions, which makes it a worthy investment for schools.

APPLICATION OF EVIDENCE-BASED MIND–BODY INTERVENTIONS FOR TRAUMA THROUGH A TIERED SERVICE DELIVERY MODEL

As highlighted earlier, these evidence-based mind–body interventions that are effective for youth who have experienced trauma can be implemented within the school setting with entire classrooms (Tier 1), small groups (Tier 2), or during more intensive one-on-one counseling or therapy sessions (Tier 3). Table 24.1 provides a detailed summary of how these interventions can be used at all three tiers. Although the implementation of these interventions at each tier is described individually, they can also be used simultaneously. For example, although biofeedback itself is typically only used with individuals and small groups, all students within a school or classroom can be taught basic information about how their physiological arousal affects their emotional experiences (e.g., they may be scared when they feel nauseous and their heart is racing), how to identify their physiological states, and strategies to use to decrease both their emotional and physical sensations. One strategy that can be taught is mindfulness, with specific mindfulness practices, such as breathing meditations and mindful check-ins, being incorporated into their daily classroom routine. At Tier 2 and Tier 3 levels, students should be given the opportunity to engage in more in-depth reflection surrounding their specific trauma symptoms, including reflecting on their symptoms (e.g., shock, anxiety,

TABLE 24.1. Mindfulness and Relaxation Interventions for Trauma at the Three Tiers

| Tier | Strategy for implementation |
|------|--|
| 1 | <ul style="list-style-type: none"> • 3-minute breathing meditation session each morning • Mindful check-in after lunch or before leaving school |
| 2 | <ul style="list-style-type: none"> • Small group counseling and implementation of mindfulness strategies (e.g., breathing meditation, body scan, walking meditations) one to two times a week |
| 3 | <ul style="list-style-type: none"> • Intensive individual counseling one to two times a week • Use of mindfulness strategies to specifically target individual symptoms (e.g., breathing meditation, body scan, walking meditations) |

Note. Renshaw (2012) and Harpin, Rossi, Kim, and Swanson (2016) are helpful resources that provide more information about implementing mindfulness and relaxation information at all three tiers.

irritability, difficulty concentrating, somatic complaints), when the symptoms occur, how they respond when these symptoms occur, and specific coping strategies. In addition, by using specific biofeedback procedures at Tier 2 and 3, students can increase their understanding of their physiological responses and learn to better regulate their behavioral and emotional responses (Matuszek & Rycraft, 2003) through mindfulness techniques and other strategies.

SCHOOL-BASED CASE EXAMPLE

The following scenario is an example of how these mind–body practices can be successfully used for youth who have experienced trauma. Associated ethics are also described to help school-based practitioners working with these youth consider their ethical obligations and engage in effective practice.

Julie, a 14-year-old, was at home with her mother when her mother collapsed in cardiac arrest. Julie attempted to find neighbors to help, but no one was home, so she called 911. Julie rode in the ambulance to the hospital and waited for hours until her father was able to pick her up because he was away on a business trip. Julie experiences exaggerated startled responses and severe emotional reactivity whenever she is faced with traumatic reminders, such as when she hears sirens or sees ambulances.

Julie experienced a devastating traumatic event and appears to have some symptoms of PTSD. Because of her exaggerated startled responses and severe emotional reactivity to reminders of her mother’s death, she would benefit from individual support. Although she may need additional intensive therapy outside the school setting, the mind–body interventions highlighted in this chapter will also help mitigate her symptoms. For example, Julie would benefit from attending one-on-one school-based counseling sessions approximately one to two times per week for 50 minutes. The school-based practitioner may start by providing Julie with psychoeducation regarding both her emotional and physical symptoms and how they are connected to her trauma. Because

Julie's father is likely also experiencing grief and shock because of his wife's death, it would also be helpful to meet with him and provide him with psychoeducation on how to best support Julie. Although Julie should also be given support for her grief, her traumatic symptoms should first be targeted. If the practitioner has received training in biofeedback, he or she can teach Julie how to decrease her heart rate and reactions when faced with traumatic reminders, gain self-control over her feelings, talk about the trauma while simultaneously receiving feedback about her physiological arousal, and use coping strategies to help decrease her anxiety and enable her to feel calm (Khazan, 2014). For example, Julie would benefit from learning how to engage in deep breathing, meditation, and other effective mindfulness practices to help her regulate her emotions (Renshaw, 2012). Once she has developed an understanding of her physiological state and her emotional reactions and has practiced effective coping strategies, Julie should be encouraged to practice these strategies both in the classroom and at home to help manage her symptoms and improve her daily functioning.

There are some critical ethical considerations when providing treatment to Julie. First, due to the severity of her symptoms, it is imperative that the practitioner providing treatment be competent in supporting youth who have experienced severe trauma. As highlighted by the National Association of School Psychologists (NASP) Principles for Professional Ethics (2010; Standard II.1.1.), "School psychologists recognize the strengths and limitations of their training and experience, engaging only in practices for which they are qualified." The importance of practicing within one's boundaries of competence is also emphasized by the American Psychological Association (APA) *Ethical Principles of Psychologists and Code of Conduct* (2017; Standard 2.01, Boundaries of Competence). Along these same lines, because of the specialized training required for biofeedback and the expense associated with purchasing the equipment, it is imperative that the school-based practitioner is properly exposed to and trained in using these skills.

Second, obtaining informed consent from parents for minors is always required when providing one-on-one support to students in schools, unless countermanded by a state or other law that allows minors to give consent. Because of the specialized nature of the services being provided to Julie, it is critical that her father understands the nature and scope of services being provided, possible risks or consequences, procedures that will be used, and availability of alternative treatment options (NASP, 2010, Standard I.1.3). Furthermore, if Julie is receiving additional services outside the school, the school-based practitioner may wish to obtain permission from Julie's father to release and obtain treatment information to coordinate services (NASP Standard I.2.4; APA, 2017, Standard 3.10, Informed Consent). The school-based practitioner should also be clear on what information she or he can share with teachers and others in the school setting and what information should be kept confidential (NASP Principle I.2 Privacy and Confidentiality). Although it will be helpful to provide information regarding how to best support Julie in

the classroom, psychoeducation on possible symptoms she may experience, and ways to encourage her use of effective strategies, it is vital that she or he does not disclose information that may put Julie or her father at risk (NASP Standard I.2.2) and that information only be shared on a need-to-know basis (NASP Standard 1.2.5).

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The Effects of War and Trauma on Learning and Cognition

The Case of Palestinian Children

Reham Mougrabi-Large and Zheng Zhou

Millions of children grow up in parts of the world (e.g., the Middle East, Central and South America, Southeast Asia, Africa) where war is all they have ever known. In past decades, war has killed, orphaned, and inflicted physical and psychological trauma on millions of children around the world (Attanayake et al., 2009). They are denied the right to be protected from physical and mental harm, the right to adequate health care and education, the right to their dignity, and the right to live in peace. The United States has received an influx of refugees of war as humanitarian aid, and the numbers are increasing (Clark, 2003). As school psychologists, it is difficult to ignore the children who are living amid the violence of war and not feel responsible for addressing the needs of those children whose lives have been disrupted by terrorism, war, and various forms of oppression. In her American Psychological Association, Division 16, School Psychology, presidential address, Dr. Elaine Clark (2003) said it was our responsibility as school psychologists to learn about these children and what they have experienced so we can develop ways to help children in war, as well as those who seek refuge in this country. Empirical evidence is needed on the types and frequency of psychological problems of children exposed to war and on the gender, age, family, and community variables that may moderate the strength and nature of wartime effects (Flores, 1999; Leavitt & Fox, 2014). As we increase our knowledge of those factors, interventions may become more effective and less expensive.

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To increase our understanding of the impact of political violence as a public health concern and as an advocacy effort to aid organizations in the planning of intervention programs for children affected by armed conflicts, this chapter provides empirical evidence of the war, trauma, and quality of life on the learning and cognition of the Palestinian children in the West Bank (Mougrabi-Large, 2016).

WAR AND CHILDREN

Children are the most vulnerable group to be affected by conflict and war (Hamdan-Mansour, Abdel Razeq, AbdulHaq, Arabiat, & Khalil, 2017; Khamis, 2008, 2015; Slone, Lavi, Ozer, & Pollak, 2017). Trauma exposure has been found to be associated with psychological problems, such as posttraumatic stress disorder (PTSD), anxiety disorder, depression, and conduct disorder (Elbert et al., 2009; Hadfield, Ostrowski, & Ungar, 2017; Halevi, Djalovski, Vengrober, & Feldman, 2016; Niwa et al., 2016; Oppedal, Özer, & Sirin, 2018; Wani & Phogat, 2018). Aside from the psychological consequences, disrupted schooling can deter children from effectively engaging in the learning process because their cognitive and behavioral resources are devoted to struggling to survive rather than to working on their growth and mastery of developmental tasks (Duque, 2017; Guttman-Steinmetz, Shoshani, Farhan, Aliman, & Hirschberger, 2012; Halevi et al., 2016).

It has now been more than 6 decades since the start of the occupation of Palestine. Despite the considerable losses, destruction, and suffering that have been experienced by people involved throughout the years, a peace settlement is still not in sight (Nasie, Diamond, & Bar-Tal, 2016). Millions of Palestinian children and adolescents are exposed to war and conflict both directly and indirectly, with deleterious effects (Dimitry, 2012; Nasie et al., 2016; Slone et al., 2017; Slone & Mann, 2016; Thabet, Abed, & Vostanis, 2002). Exposures to conflict and occupation and their long-term effects on children's mental, physical, and cognitive development have consistently been documented in children in the contexts of war and refugee camps (Al-Krenawi, Graham, & Kanat-Maymon, 2009; Borba et al., 2016; Guttman-Steinmetz et al., 2012; Miller & Jordans, 2016; Nada, Celestin-Westreich, Van den Broeck, & Celestin, 2010; Sagi-Schwartz, 2008). Children living in different proximities to the war are affected on different levels and in different ways (Baker & Kanan, 2003; Sait, 2004; Slone et al., 2017). Quality of life manifested in physical, emotional, mental, social, and functional aspects of well-being and health has been reported to act as a protective factor that can alter the effect of trauma on cognitive and psychological functioning (Massad et al., 2011; Schlack, Ravens-Sieberer, & Petermann, 2013). When quality of life is high, children exposed to trauma show fewer mental health issues and academic failures (Schlack et al., 2013).

EFFECTS OF WAR AND TRAUMA ON PALESTINIAN CHILDREN'S COGNITIVE DEVELOPMENT

Cognition is defined as a person's capacity to acquire and use information to adapt to environmental demands (Josman, Abdallah, & Engel-Yeger, 2011). Cognitive skills predict a child's school readiness and successful participation in school (Graham, Minhas, & Paxton, 2016; Josman et al., 2011). Cognitive flexibility and emotion regulation facilitate distress tolerance and the development of healthy coping strategies (Levey et al., 2016). Children with cognitive deficiencies have been shown to experience difficulties in achieving scholastic success (Graham et al., 2016; Sait, 2004). Studies examining the cognitive functioning of children living in war conditions have shown impairments in executive function, memory, verbal ability, and school performance (Berthold, 2000; Bücker et al., 2012). Children with PTSD living in war zones have shown difficulty in attentional control, memory problems (Blair et al., 2013), problem solving, planning, reasoning, and concentration (Dubow, Huesmann, & Boxer, 2009). Trauma affects children's ability to process and understand information (Pine, Costello, & Masten, 2005). This was reflected in the longer time children who had experienced trauma took to grasp what others were saying, understand and follow directions, read and understand information, and react to and carry out tasks (Srouf, 2005). They showed difficulty in attention, learning and remembering new information, and remembering events or retrieving long-term memory information (Blair et al., 2013; Bücker et al., 2012; Palosaari, Punamäki, Diab, & Qouta, 2013). Research has also revealed that children exposed to war have trouble with tasks that require multiple steps and tasks that include analyzing information (Paxson & Schady, 2007).

Studies on the cognitive difficulties of Palestinian children living in war have shown that these children experience stressors that affect their cognitive functioning, such as memory and executive functioning (Altawil, Nel, Asker, Samara, & Harrold, 2008; Bücker et al., 2012; Qouta, Punamäki, & El Sarraj, 1995). Palestinian children who lived in the Gaza Strip were studied during the Intifada (Baker, 1990; Elbedour, Onwuegbuzie, Ghannam, Whitcome, & Abu Hein, 2007) when they experienced high degrees of violence, loss, and threat to life (Qouta et al., 1995). These factors have been shown to disrupt healthy overall cognitive functioning (Baker & Shalhoub-Kevorkian, 1999) and, in particular, creativity, visual-motor performance, and ability to organize symbolic material (Baker & Kanan, 2003). The higher the degree of trauma the Palestinian children experienced, the more concentration, attention, and memory problems they demonstrated, as measured by the Wechsler Individualized Scale for Children (4th ed.; Wechsler, 2003) Digit Span subtest. Furthermore, their attention, perception, memory, and executive functioning had also been affected by traumatic experiences (Qouta et al., 1995). The direct relationship between trauma and cognitive skills involving attention, perception, memory, and executive functioning are described in more detail in subsequent sections.

Attention

The attention of children in war has been found to be affected by war exposure (Goldstein, Wampler, & Wise, 1997). Children exposed to war had a difficult time maintaining attention to tasks, and as a result, their cognitive functioning declined (Blair et al., 2013; Mataria et al., 2009). When children attend, they perceive. When children attend and perceive, they remember. When children attend, perceive, and remember, they learn (Mataria et al., 2009). The research on Palestinian children has shown an inverse relationship between exposure to war and their performance on information processing and comprehension (Husain, Allwood, & Bell, 2008; Pine et al., 2005). These children's thoughts were preoccupied with the situation they lived in, and as a result, they were not able to concentrate on other areas of life (Goldstein et al., 1997; Husain et al., 2008).

Perception

There is a close relationship between perception and cognitive functioning (Sparrow & Davis, 2000). Perception is the first step in cognition, whereas attention is the first step in perception (Bodenhausen & Hugenberg, 2009). Perception is an important component of children's development because perception is the interpretation of information that includes recognition and identification (Mataria et al., 2009). Palestinian children exposed to war had difficulty in perception due to heightened anxiety, and they often misunderstood information they saw or heard (Punamäki, Qouta, Miller, & El Sarraj, 2011). Children living in war had a hard time with direct awareness of their environment and what was in it (Punamäki et al., 2011). This, in turn, affected their cognitive functioning because perception is a building block for overall cognitive development (Bodenhausen & Hugenberg, 2009).

Memory

Decreased performance on measures of auditory attention and working memory has been found in children exposed to war (Aupperle, Melrose, Stein, & Paulus, 2011). Trauma exposure in childhood has been found to impair the ability to recall specific autobiographical memories in late adolescence (Brennen et al., 2010). Children in war were constantly exposed to the violence and trauma with which their minds had become preoccupied (Kira, Lewandowski, Somers, Yoon, & Chiodo, 2012). Memories of traumatic experiences could persist for years and made it almost impossible for these children to use their memory skills for effective cognitive functioning (Goldstein et al., 1997). Their minds were full of negative memories, which made it hard for them to use their cognition for positive memories and the storage and accessibility of memories (Kira et al., 2012). A recent study found that war trauma was associated with a less positive emotional tone during recall of autobiographical events among Palestinian schoolchildren from the Gaza Strip (10–12 years; Peltonen, Kangaslampi, Saranpää, Qouta, & Punamäki, 2017).

Executive Functioning

Executive functions are those that include a vast range of abilities, such as initiation of behavior, planning to complete an activity, self-monitoring and regulation of behavior, and cognitive flexibility. Research with Palestinian children has shown that the mind of a child exposed to war is not the same as that of a child living in a peaceful community (Nada et al., 2010). Children living in war environments had difficulty with analyzing, planning, organizing, scheduling, and completing tasks at all (McMullen, O'Callaghan, Richards, Eakin, & Rafferty, 2012). Palestinian children had difficulty engaging in simultaneous mental tasks (Khamis, 2012). These children were preoccupied with surviving, and they had difficulty organizing and planning effectively (Mataria et al., 2009).

PROXIMITY TO WAR ZONES AND ITS IMPACT ON PALESTINIAN CHILDREN

The severity of distress symptoms is associated with the proximity of the life-threatening event. Previous findings have consistently shown that children who lived at a greater distance from the traumatic event displayed depression scores significantly higher than their counterparts who lived close (Baker & Kanan, 2003). Close proximity to war trauma had more of an impact on a child's well-being and everyday functioning than distant trauma (i.e., experiences related to the forced removal from one's home or hearing that others' lives are in danger but not one's own; Dubow et al., 2012; Guttman-Steinmetz et al., 2012; Pine et al., 2005). Individuals who lived in regions with high rocket fire intensity showed higher levels of PTSD symptoms than those living in low rocket fire intensity regions (Besser, Zeigler-Hill, Weinberg, Pincus, & Neria, 2015). Studies involving Palestinian children who lived in close, moderate, and far proximity to high violence areas found that the psychological well-being of children, including positive emotions, healthy relationships, and having a sense of meaning in one's life, was affected negatively by the military and political violence to which they were subjected (Baker & Kanan, 2003; Pine et al., 2005).

QUALITY OF LIFE AS A PROTECTIVE FACTOR FOR PALESTINIAN CHILDREN

Quality of life encompasses emotional, social, and physical aspects of an individual's life (Massad et al., 2011). Quality of life includes the environment one lives in, physical and mental health, education, recreation and leisure time, and social belonging (Raaij, Botterweck, Landgraf, Hoogeveen, & Essink-Bot, 2005). For young children, quality of care and quality of life are the most important protective factors (Massad et al., 2011; Tol, Song, &

Jordans, 2013). Quality of life is important in studying the effect of trauma and war on children's cognitive functioning (Massad et al., 2011). Positive quality of life has been found to serve as a moderator between trauma and cognitive functioning (Raat et al., 2005). Children with a positive quality of life were not as affected by trauma and war as those with a negative quality of life (Massad et al., 2011).

The war and the long-term conflict in Palestine have exposed the children to recurrent traumatic events that have violated their human rights: the right to live, to learn, to be healthy, to live with their families and communities, to develop their personalities, to be nurtured and protected, and to enjoy childhood (Altawil et al., 2008). Mataria et al. (2009) showed that Palestinian children living in war zones reported a lower quality of life compared with Palestinian children living in Israel. In their study of the quality of life among Palestinian children in the Gaza Strip, Massad et al. (2011) found that these children's psychosocial health and emotional functioning were severely impaired due to poor quality of life.

MOUGRABI-LARGE'S STUDY

Mougrabi-Large (2016) examined the effects of proximity, trauma, and quality of life on cognitive (attention, perception, memory, and executive functioning) and academic functioning (reading and math) in Palestinian children in the West Bank. Four hundred participants between 8 and 12 years old were recruited in the West Bank. The Bethlehem school district located within the city of Bethlehem was identified for data collection. The school district housed United Nations Relief and Works Agency (UNRWA) schools (close in proximity to war) and government-funded schools (far from the war). There were three elementary UNRWA schools and 10 elementary government-funded schools in the district. Each school had four classes at each grade level with an average of 30 students in each class. All three UNRWA and six government-funded schools were randomly selected to participate. Children 8 to 12 years old (i.e., in Grades 3–5) were randomly selected from six government-funded schools and three UNRWA schools. An equal number of boys and girls were recruited in relation to their proximity to a war zone: close and far.

Close Proximity

The close proximity area encompassed all homes and school systems falling within a 500-meter radius of ground zero (bombed target). The schools in this category, UNRWA schools, were located within refugee camps and were in the most dangerous environments (McCann, 2009). The schools had the least amount of resources. UNRWA provided food, shelter, and emergency health care.

Far Proximity

Far proximity encompassed all areas falling outside the 1,000-meter radius of the bombed target. The schools far from the war zone were the government-funded schools located in areas that were considered more stable than those in which the UNRWA schools were located, though children still experienced war and violence. The children that attended these schools did not live in refugee camps and still resided in their permanent homes.

The Mougrabi-Large (2016) study used four types of measures: a demographic survey (i.e., children's age, type of school, and gender and parents' education level, employment, and income), the Wechsler Abbreviated Scale of Intelligence (second ed.; WASI-II; Wechsler, 2011), the Child Post-Traumatic Stress Reaction Index—Arabic Version (CPTS-RI), and the World Health Organization Quality of Life Assessment—BREF (WHOQOL-BREF; World Health Organization, Division of Mental Health, 1996). The WASI-II consists of four subtests in two domains: Verbal Comprehension Index (Vocabulary and Similarities) and Perceptual Reasoning Index (Block Design and Matrix Reasoning). The WASI-II has been used with the Arabic speaking population and has been used and validated in the United Arab Emirates with adequate test-retest reliability (Abu-Hilal, Al-Baili, AbdelAziz, Abdel-Fattah, & Al-Qaryouti, 2011). The CPTS-RI consists of a 22-item self-report (interview format) questionnaire based on the *DSM* criteria for PTSD (Thabet & Vostanis, 1999). There are four domains assessed on the CPTS-RI: Traumatic Stressors, Reexperiencing, Avoidance/Numbing, and Hyperarousal. The items are rated on a 4-point scale ranging from 0 (*none*) to 4 (*most*). The WHOQOL-BREF has 26 items rated on a five-point Likert scale and four domains related to quality of life: physical health, psychological health, social relationships, and environment. The WHOQOL-BREF was translated by a native Arabic-speaking educator in the West Bank who was also fluent in English. Mougrabi-Large, who was fluent in both English and Arabic, back translated the Arabic version into English. A health-related quality of life scale was previously used by Massad et al. (2011) to assess the quality of life of the Palestinian children. Children's performance in math and reading was based on their scores on the report card.

Proximity to War Zone and Cognitive and Academic Skills

Preliminary correlation analysis indicated that proximity was negatively correlated with trauma ($r = -0.221$, $p < .001$; i.e., children who lived farther away in proximity to war zones experienced less trauma; children who lived closer in proximity to war zones experienced more trauma). Proximity was significantly correlated with cognitive functioning on the Full Scale IQ of the WASI-II ($r = 0.25$, $p < .001$), with children who lived farther away in proximity to war zones scoring higher than children who lived in closer proximity. Analyses of the subscales on the WASI-II showed a significant correlation between proximity and the Verbal Comprehension Index ($r = 0.222$, $p < .001$)

and the Perceptual Reasoning Index ($r = 0.249, p < .001$). Specifically, proximity was significantly correlated with the Similarities subtest ($r = 0.131, p < .05$), the Vocabulary subtest ($r = .270, p < .001$), and the Block Design subtest ($r = 0.336, p < .001$) but not the Matrix Reasoning subtest. Correlational analyses on children's academic performance revealed that proximity was not significantly correlated with math but was significantly correlated with performance on reading ($r = 0.187, p < .001$), suggesting that children living in close proximity to war zones performed worse on reading tests than those living far from the war zone.

Trauma and Cognitive Skills

There was a significant negative correlation between trauma and overall cognitive functioning as measured by the Full Scale IQ on the WASI-II ($r = -0.233, p < .001$; i.e., children who experienced more trauma as reported in the trauma scale scored lower in their Full Scale IQ, whereas children who experienced less trauma scored higher in their full IQ). There were also significant negative correlations between trauma and the Verbal Comprehension Index ($r = -0.189, p < .001$) and Perceptual Reasoning Index ($r = -0.200, p < .001$). Children who experienced fewer traumas performed better on the Verbal Comprehension Index as well as on the Perceptual Reasoning Index. Separate analyses on the four subtests revealed significant negative correlations between trauma and the Similarities subtest ($r = -0.159, p < .001$), Vocabulary subtest ($r = -0.200, p < .001$), Matrix Reasoning subtest ($r = -0.195, p < .001$), and Block Design subtest ($r = -0.140, p < .01$).

Quality of Life and Cognitive Skills

Quality of life was significantly correlated with Full Scale IQ on the WASI-II ($r = 0.155, p < .01$), suggesting that students who reported better quality of life scored higher on overall cognitive functioning than those who reported poorer quality of life. Within the subdomains, quality of life was significantly correlated with the Perceptual Reasoning Index ($r = 0.195, p < .001$) but not with the Verbal Comprehension Index. Children who scored higher on quality of life showed better performance on perceptual reasoning tests. When each subtest was analyzed separately, quality of life was significantly correlated with the Similarities subtest ($r = 0.110, p < .05$), Matrix Reasoning subtest ($r = 0.185, p < .001$), and Block Design subtest ($r = 0.153, p < .01$) but not with the Vocabulary subtest.

Proximity as a Moderator Between Trauma and Cognitive Skills

To test whether the proximity to a war zone moderated the relationship between trauma and overall cognitive skills, a hierarchical multiple regression analysis was conducted. The interaction term between trauma and proximity

entered in the regression model accounted for a significant proportion of the variance in children's cognitive skills, $\Delta R^2 = .013$, $\Delta F(1,396) = 5.774$, $p < .05$, $b = -.286$, $t(396) = -2.403$, $p < .05$. This suggests an enhancing effect: As trauma decreased and proximity increased, cognitive skills increased. As trauma increased and proximity decreased, cognitive skills decreased. Therefore, proximity moderates the relationship between trauma and cognitive skills.

Proximity as a Moderator Between Quality of Life and Cognitive Skills

To test whether proximity to a war zone acted as a moderator between quality of life and overall cognitive skills, a hierarchical multiple regression analysis was also conducted. The interaction term between quality of life and proximity entered to the regression model accounted for a significant proportion of the variance in children's cognitive skills, $\Delta R^2 = .027$, $\Delta F(1,396) = 12.212$, $p = .001$, $b = .440$, $t(396) = 3.495$, $p < .01$. This finding suggests that as quality of life and proximity increased, cognitive skills increased. As quality of life and proximity decreased, cognitive skills decreased. Therefore, proximity moderated the relationship between quality of life and cognitive skills.

Quality of Life as a Moderator Between Trauma and Cognitive Skills

To test whether quality of life moderated the relationship between trauma and overall cognitive functioning, a hierarchical multiple regression analysis was conducted. The interaction term between quality of life and trauma added to the regression model did not account for a significant proportion of the variance in children's cognitive skills, $\Delta R^2 = .001$, $\Delta F(1,396) = .462$, $p > .05$. Results showed that quality of life did not account for a significant amount of moderation between trauma and cognitive skills.

Quality of Life as a Moderator Between Trauma and Academic Performance

To test the hypothesis of whether quality of life moderated the relationship between trauma and academic performance in math and reading, a hierarchical multiple regression analysis was first conducted with children's math performance. When the interaction term between quality of life and trauma was added to the regression model, it accounted for a significant proportion of the variance in children's math performance, $\Delta R^2 = .012$, $\Delta F(1,396) = 5.048$, $p < .05$, $b = -.007$, $t(396) = -2.247$, $p < .05$. It suggested that when trauma and quality of life were both high, math performance increased. Therefore, quality of life moderated the relationship between trauma and academic performance in math. Quality of life acted as a buffer that allowed children to perform well in math although their trauma experiences were high. A hierarchical

multiple regression analysis was also conducted with reading. However, the interaction between quality of life and trauma did not account for a significant proportion of the variance in children's reading performance, $\Delta R^2 = .005$, $\Delta F(1,396) = 2.246$, $p > .05$.

Discussion and Implications for Practice

The Mougrabi-Large (2016) study documented intertwined and intricate relationships among proximity, trauma, and quality of life on Palestinian children, suggesting that prolonged and pervasive exposure to traumatic experiences of death and destruction in the West Bank and Gaza Strip had a deleterious effect on the cognitive and academic functioning of these children. Palestinian children in the study who lived in close proximity to the war zone scored lower on cognitive tests (verbal comprehension, perceptual reasoning, and overall functioning), performed worse in reading and math, and reported more traumatic experiences and a lower quality of life than those living in regions far from the war zone. Beyond these simple correlational findings, the author also found moderating effects of proximity to war zone and quality of life on Palestinian children's cognition and learning.

Specifically, it was found that proximity moderated the relationship between trauma and cognitive skills. The interaction of high trauma and close proximity predicted the decreased cognitive functioning of the Palestinian children. Findings from the study are consistent with previous findings that children who live in refugee camps and those who are directly affected by the conflict, including bombardment and home demolition, experienced more psychological and cognitive problems than nonaffected children (Diehl, Zea, & Espino, 1994; Peltonen et al., 2017; Prasad & Prasad, 2009; Qouta et al., 2008; Slone et al., 2017). Furthermore, proximity was also found to moderate the relationship between quality of life and cognitive skills among Palestinian children in the study. As quality of life and proximity increased, cognitive skills increased. These findings are consistent with previous findings that children's cognitive functioning was associated with quality of life, which served as a protective shield against trauma and exposure to war and violence (Altawil et al., 2008; Betancourt & Khan, 2008; Massad et al., 2011; Raat et al., 2005).

Mougrabi-Large (2016) also found that quality of life moderated the relationship between trauma and academic performance. Palestinian children who experienced higher levels of trauma performed better in math when quality of life was high. This finding is consistent with the previous finding that math reasoning was particularly affected by exposure to violence during the whole childhood period (Duque, 2017). Studies have shown that proximity to war could seriously interrupt the school routine and the processes of teaching and learning (Graham et al., 2016; Purwar, Dhabal, & Chakravarty, 2010; Qouta et al., 2008). Children traumatized by exposure to violence have been shown to have lower grade point averages, more negative remarks in their cumulative records, and more reported absences from school than other

students (Qouta et al., 2008). These children had increased difficulties concentrating and learning at school (Purwar et al., 2010). The importance of quality of life on children's academic performance can be interpreted using the bio-ecological system theory that a child's development occurs in the context of interactions between different layers of their "ecology" (e.g., individual attributes, caregivers, family, school, community, society; Graham et al., 2016), which provides an understanding that learning problems arise from the interaction of environmental factors and life experience in a dynamic process.

Mougrabi-Large's (2016) study brings to light the pressing need to provide help for children in war worldwide and Palestinian children and adolescents living in the West Bank and Gaza Strip in particular. Many children living near the border in zones of conflict, where there is constant threat and ongoing trauma and poor health-related quality of life, have immediate needs for food, shelter, and therapeutic involvement. In the Middle East, where family and community play such a central role in the lives of the people, community involvement gives meaning to traumatic events, which can help children cope (Dimitry, 2012). Efforts to reduce the effects of trauma and increase the quality of life for these children can be coordinated through collaboration with local schools, agencies, and families, which are the main sources of stability and safety for the children (Flores, 1999). Positive school experiences can serve as protective factors for children (Hadfield et al., 2017). Teachers have to adapt their curricula to the unique needs of war-affected children. These issues can create challenges for the children, and instead of acting as a protective factor in the context of other difficulties, school experiences can lead to worse mental health outcomes. Previous studies have shown that positive student-teacher interaction promoted resilience among adolescents who had supportive teachers who were perceived as kind to them (Fayyad et al., 2017; Oppedal et al., 2018). Although children in school were generally functioning better, many were also struggling. A liaison between schools and families could identify children experiencing difficulties and offer additional support to those families. To serve this liaison, more mental health professionals are needed, requiring the development of training programs in school psychology and social work.

Parenting during wartime can be difficult. As violence increases, the mother-child relationship could become harsher (Levey et al., 2016). However, mothers exposed to severe war trauma were found to show especially high attachment to their children (Palosaari et al., 2013). Interventions such as support groups for mothers can be used to increase their sense of well-being, self-confidence, and ability to care for their children in difficult times. Parents should encourage their children to express their feelings about what has happened, share their feelings with them, and frequently reassure them that they are safe and loved. Parents should praise and recognize responsible behavior and reassure children that their feelings are normal in response to an abnormal situation. Parents have to be honest with their children and open about the current situation. Returning the family to a normal routine

can help provide a sense of security and safety. Children who are not able to articulate their feelings should be encouraged to express themselves through coloring, drawing, and painting.

Various government organizations and nongovernmental organizations, such as the United Nations Children's Fund (UNICEF), Save the Children, United Nations High Commission for Refugees, and Human Aid can play a major role in providing support through socioeconomic stability, education, and awareness of the impact of trauma. The UN's "anti-war agenda" states that most of the tragedy that children experience can be prevented (UNICEF, 1996). To prevent these situations, education should promote peace and tolerance. International affairs and politics have to focus more on the effect of war and trauma on the children of the world. The issues these children are facing should be incorporated into peace negotiations and accords. Protecting the children should be included in all UN peace operations.

The Mougrabi-Large (2016) study also has implications for psychologists providing mental health services for war refugee children and their families in the United States. There is evidence that how parents cope with stress can affect the mental health of refugee children, including an association between mental health problems and anger being directed to children, and that parental or family cohesion can moderate children's mental health (Bryant et al., 2018). However, successful counseling with Arab Americans relies on the relationship between counselor and client rather than on interpretation or exploration of client issues (Nassar-McMillan & Hakim-Larson, 2003). Because of cultural differences, it may take longer to develop the therapeutic relationship. There is also the importance of interacting with individuals on a personal basis before addressing the "official" concerns. The traditional Western model of counseling or therapy must often be discarded when working with clients of Arab descent and background (Abudabbeh & Aseel, 1999). One of the differences in counseling style from a traditional Western model is that family members are frequently included in the therapeutic process. For example, because of a lack of child care, children may be present in sessions when their participation is not needed.

Finally, findings from the Mougrabi-Large (2016) study highlight the need for further research on this vulnerable population, especially research rooted in a developmental perspective using longitudinal approaches that offer a comprehensive examination of developmental trajectories of affected children's cognitive and psychosocial development. Studying the factors that moderate these outcomes would be particularly instructive in deepening our knowledge of the impact of war on children and informing interventions and policy to support children affected by war to achieve their developmental potential.

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