FACTORS INFLUENCING CLINICIANS' USE OF EXERCISE AS A MENTAL HEALTH INTERVENTION

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Dissertation

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ABSTRACT

Although exercise has long been studied primarily for its physical health benefits, over the past four decades an increased focus has been placed on research that examines the ability of exercise to redress mental health concerns (Bergin 2020; Leith, 2009). Despite exercise having been demonstrated to exhibit positive associations with reducing negative mental health and physical health outcomes, at best a moderate number of people engage in physical activity on a regular basis (Daley, 2008; Kleemann et al., 2020). Additionally, it has been noted that individuals with mental health concerns will come into contact with a range of health professionals and all could play a potential role in legitimizing, prioritizing, and supporting physical activity as an important ingredient of overall well-being (Faulkner & Taylor, 2012). A number of researchers (Daley, 2008; Millard, 2013; Otto & Smits, 2011) have postulated that mental health clinicians may be well-positioned to incorporate physical activity interventions with their clients. To date, much of the research that has been conducted on the use of physical activity as a mental health intervention has been done in countries outside of the US (e.g. Australia, Canada, India, United Kingdom) and in disciplines outside of psychology (exercise physiology, medicine, nursing, psychiatry, social work). Additionally, an underlying framework for conceptualizing factors that influence mental health practitioners' use of physical activity as an intervention has not been thoroughly studied. Accordingly, examining the factors that influence mental health professionals' use of physical activity for the prevention and

treatment of mental health problems is warranted. The current study, therefore, uses a clinical decision-making model (Jacobs et al., 2012) to help delineate the relationship between mental health practitioner related factors and their association with how these professionals incorporate exercise within their clinical work. Results indicated that physical activity on the part of the mental health clinician was significantly and positively correlated with scores for exercise prescription, accounting for the majority of variance in clinician's use of exercise as an intervention. Cognitive-behavioral and solutions-focused theoretical orientation were also significantly and positively correlated with scores for exercise prescription. Implications and limitations are discussed.

Keywords: exercise, mental health clinician, clinical decision-making

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

Despite the physical (e.g., Myers et al., 2002) and psychological (e.g., Lawlor & Hopker, 2011) benefits of exercise, many adults in Europe (NIHCE, 2006) and the United States (USDHHS, 2002) fail to meet minimum physical activity recommendations. Although almost universally recognized as a valuable health behavior and demonstrated in research to have many mental health benefits, at best moderate numbers of people engage in recommended amounts of physical activity (Danaei et al., 2009; Haskell et. al, 2007). Given the combination of considerable health benefits of regular physical activity and relatively low prevalence of physical activity among the general population, previous researchers (Daley, 2002; Garber et al., 2008) have suggested that increasing rates of regular physical activity ought to be a public health priority. Their assertion is that strategies that produce sustained physical activity have the potential to achieve widespread health benefits. Recognizing the immense physical health and mental health benefits of exercise, the Chief Medical Officer for the Department of Health in the United Kingdom stated, "The potential benefits of physical activity to health are huge. If a medication existed which had similar effect, it would be regarded as a 'wonder drug' or a 'miracle cure'" (Department of Health, 2011, p. 14).

Exercise, often used synonymously with physical activity, is defined more specifically by the American Psychological Association (2023) as "a form of physical

activity that is planned, repetitive in nature, and designed to enhance or maintain physical condition. Physical exercise may also be used as an adjunct to mental health therapy." The World Health Organization (WHO, 2011) defines physical activity as "any bodily movement produced by skeletal muscles that requires energy expenditure" (para. 1). Previous research has struggled to differentiate between the terms exercise and physical activity, but for the purposes of this study, the distinctions are moot, so the terms exercise and physical activity will be used interchangeably.

Although exercise has long been studied primarily for its physical health benefits, over the past three decades an increased focus has been placed on research that examines the ability of exercise to redress mental health concerns (Kleemann et al., 2020; Leith, 2009). A large and growing literature base has provided consistent and overwhelming support for the positive relationship between participation in exercise and reduced symptoms of mental illness (Daley, 2002; Ekkekakis, 2013; Kleemann et al., 2020; Ströhle et al., 2007). Several consensus documents and reviews demonstrating widespread support for a positive and lasting relationship between participation in regular exercise and various indices of mental health have been published on this topic (e.g. Biddle, Fox, & Boutcher, 2000; Ekkekakis, 2013; Loprinzi & Beets, 2014). More specifically, numerous meta-analyses and reviews have documented the mental health benefits of exercise with both clinical (Lawlor & Hopker, 2001; Mead et al., 2009; Phillips, Kiernan, & King, 2003) and nonclinical (Conn, 2010; Wipfli, Rethorst, & Landers, 2008) populations. Of importance, although the evidence for psychological benefits are impressive for mentally healthy individuals, some research has suggested that physical activity may have even stronger effects for populations that are receiving

professional psychological treatment (Ekkekakis, 2013; Jacob et al., 2020). For example, a number of studies have demonstrated a positive relationship between exercise and mental health for people with alcohol use problems, individuals with schizophrenia, and those with clinical depression (Martinsen, 1995; Mead et al., 2009). Furthermore, exercise has been demonstrated to decrease symptoms of anxiety and stress reactance, while also increasing feelings of wellbeing (Martinsen, 2005; Netz, Wu, Becker, & Tenenbaum, 2005; Wipfli, Rethorst, & Landers, 2008). Additionally, physical activity has been linked with an increase in self-reported general quality of life (Weinberg & Gould, 2011). Researchers have also noted that exercise, unlike other forms of treatment, has few negative side-effects and, in fact, can have many additional positive benefits for individuals such as improved physical fitness, improved self-esteem, and increased social and community involvement (Biddle, Fox, & Boutcher, 2000).

In short, strong evidence exists that physical exercise can be an effective intervention for addressing a variety of mental health concerns. Landers (2005) summed up the evidence supporting exercise as a treatment for some mental health concerns by stating, “We now have evidence to support the claim that exercise is related to positive mental health as indicated by relief of symptoms of depression and anxiety” (p. 4). Additionally, a review of four randomized controlled trials (RCTs) on the effect of regular exercise on PTSD found that physical activity significantly reduced depressive and PTSD symptoms and concluded that including physical activity in the treatment of PTSD appears to be helpful. Although not a panacea, empirical literature supports exercise as a viable intervention or adjunct to treatment for several mental health

concerns with demonstrable psychological benefits for those individuals who engage in physical activity and few negative side effects (Martinsen, 2005).

This study examines the factors associated with mental health professionals' use of exercise as a mental health intervention. This study investigated the influence of clinician-related variables, setting-related variables, and client-related variables on the decision to "prescribe" exercise as a mental health intervention. Clinician-related variables included gender, theoretical orientation, personal exercise behavior, and age of clinician. Setting-related variables included primary place where clinical work was conducted and any specific program available for exercise. Client-related variables included gender, diagnosed condition, and perceived receptiveness to exercise. This study was grounded in various conceptual frameworks stemming from the established clinical literature available and described the prediction of prescribing exercise as an intervention.

Exercise has the potential to be a positive intervention as a stand-alone treatment, on par with both talk therapy and medication for many presenting concerns (Taylor & Faulkner, 2010). Exercise has also shown to have a positive impact on mental health when used in conjunction with other forms of treatment (Hays & Sime, 2013). Although debate is still taking place on the exact dosing and frequency to optimize the effect of physical activity, what is settled is that incorporating exercise in treatment or as part of a healthy lifestyle has a positive effect on mental health (Ekkekakis, 2013; Faulkner & Taylor, 2005; Millard, 2013). There is a strong movement, headed by the American College of Sports Medicine (ACSM), to encourage healthcare professionals to implement physical activity counseling in their practice. *Exercise is Medicine* (ACSM, 2007) is promoting a global initiative suggesting that all health care providers assess and review

every patient's physical activity at every visit. Sallis (2011), a physician and a leader in the *Exercise is Medicine* initiative, contends that physical activity should be included as the fifth vital sign (in addition to body temperature, pulse rate, respiration rate, and blood pressure) and that all health care practitioners should ask at least two questions related to physical activity at each clinical consult. (e.g. 'on average, how many days/ week do you engage in moderate or greater physical activity (like a brisk walk)?' and 'on those days, how many minutes do you engage in activity at this level?')

Although exercise has been demonstrated to have positive associations with reducing negative mental health and physical health outcomes, only a moderate number of people engage in physical activity on a regular basis (Daley, 2008). A significant number of people do not participate in physical activity at all or have dropped out of exercise regimens altogether (Blumenthal et al., 2007). Specifically, recent estimates indicate that, worldwide, 31% of individuals over the age of 15 were not sufficiently active to achieve associated physical and mental health benefits (WHO, 2010). Despite the immense evidence supporting exercise as a positive intervention, recent research reveals that almost a third of American adults (32%) do not engage in any leisure-time physical activity (American Heart Association, 2013). Additionally, only 21% of American adults meet the 2008 physical activity guidelines for both aerobic and strengthening activities, which have been shown to be important components of overall physical fitness.

Mental health practitioners experience with using physical activity in treatment

Despite the documented evidence supporting exercise as an effective method to help treat mental health disorders, prior research suggests the topic of exercise is rarely

broached in therapy (Faulkner & Biddle, 2001; McEntee & Halgin, 1996), with as few as 10% of mental health professionals recommending exercise to their patients (Walsh, 2011). Additionally, much of the research examining the inclusion of physical activity in therapy is limited and dated (Barrow et al., 1987; Burks & Keeley, 1989; Faulkner & Biddle, 2001; McEntee & Halgin, 1996). Previous researchers (Craig, Bauman, & Reger-Nash, 2009) have suggested that the increased focus on health promotion for physical activity in the media (e.g. Michelle Obama- "Let's Move", NFL Play60) may have positively changed therapists' attitudes towards physical activity. To understand how attitudes and practices may have shifted, more current data on the experiences of mental health practitioners is needed (Pasquariello, 2011). One of the aims of the current study, therefore, is to generate current data regarding the frequency with which mental health practitioners currently discuss physical activity with their clients.

Although prior research suggests psychologists do not frequently include exercise recommendations for their patients in psychotherapy, the reasons why this may be are not clear. An empirical understanding of the thoughts and perceptions of the psychological healthcare providers that would potentially use this intervention with their patients has been by and large overlooked (Hitschfeld, 2011). To better understand how to help mental health consumers access the benefits of physical activity recommendations, it is important to gain a better understanding of the factors that influence mental health practitioners' implementation of exercise as an intervention by psychological healthcare providers.

Although there has been discussion in extant literature (Ekkekakis, 2013; Pasquariello, 2011) regarding variables that are likely to impact practitioners' decision to

use physical activity as a part of treatment, what is missing is a coherent and underlying conceptual framework through which to view the current literature and make sense of how particular factors impact decision-making. Smith, Higgs, and Ellis describe clinical decision-making as entailing a plethora of factors and treatment decisions which are contextual and multifaceted (2007). Given this clinical context, it is necessary to understand how various factors influence treatment decisions for mental health practitioners concerning the use of an intervention such as physical activity. This study will explore these variables through the framework of the clinical decision-making model (Jacobs et al., 2012), which emphasizes evidence-based practice, client-centered care, and the integration of clinical expertise with the best available research. The clinical decision-making model indicates that taking into account various facets of clinical interventions, including variables specific to the client, the clinician, and the overall setting. By taking this factors into account, the model promotes improvement in the quality of care, enhancement of treatment outcomes, and greater likelihood that decisions are made in a thoughtful, informed manner.

The Human Health Services (HHS) Healthy People 2030 report provides a science-based, 10-year national plan (2021-2030) for improving the health of all Americans. The plan discusses the importance of promoting and integrating health interventions that address the psychological, biological, physical, and environmental determinants of health. Specifically, the plan encourages collaboration across disciplines and to promote interventions that are preventative in nature and which empower individuals toward making informed healthcare decisions. The American Psychological Association (APA) also noted the large potential role for professional psychology in

accomplishing the ambitious goals set forth by Healthy People 2030 (USDHHS, 2023). The combined mental health and physical health benefits of increased physical activity make promotion of physical activity by psychologists an area that could fit effectively with this plan. Without a shift to using interventions which integrate both mind and body considerations, Counseling Psychology specifically, and psychology in general, runs the risk of being left behind in these areas if we do not find ways to embrace a more integrated model of mental health care.

Psychology's role in promoting and supporting exercise

A number of authors have called for mental health professionals to more readily use exercise as an intervention or adjunct to treatment (Daley, 2002; Faulkner & Biddle, 2001; Olofsgard, 2009). Taking this a step further, Otto and Smits (2011) put forth a book in the "Treatments that Work" series focused on using exercise within treatment, paired with an accompanying handbook for clinicians, promoting the use of physical activity by mental health practitioners. Given the literature that now exists documenting the many positive mental health benefits that can be accrued from exercise and the overlap with positive psychology and preventative care, psychology, and in particular Counseling Psychology, may be able to take a leading role in bringing this intervention to consumers in the age of integrated, empirically supported care. Even prior to the recent push for integrated, empirically supported interventions, authors have highlighted the importance of mental health professionals in enacting behavior change. Janis (1983), for instance, focused on the behaviors exhibited by counselors that were effective in supporting client behavior change. Janis concluded "the most serious problems that today plague the majority of Americans and Europeans are not primarily medical; they are behavioral

problems requiring the alteration of personal habits, preferences, and decisions" (Janis, 1983, p.146). Although published 40 years ago, this quote remains true today. Also supporting this notion was Powell's (1988) assertion that in his analysis of factors leading to lost years of life, lifestyle factors were the largest percentage, at 53%.

Exercise may be an ideal way for psychological health service providers to collaborate with other health care providers to provide patients with the highest level of care. In much the same way physicians are going to find it increasingly necessary to recognize the mental health role in many conditions and diseases, psychological healthcare providers are going to need to recognize the physical health role associated with many mental health conditions. Exercise is one of the areas where this crossover can be made and collaboration enhanced. Highlighting an important opportunity for intervening, Faulkner and Taylor (2012) noted that individuals with mental health concerns will come into contact with a range of health professionals who could all play a potential role in legitimizing, prioritizing, and supporting physical activity as an important ingredient of overall well-being. Further highlighting the potential for clinicians to address physical activity with their clients, previous research has suggested that individuals using mental health services tend to be less physically active than the general population (Janney et al., 2008). On the other hand, not addressing exercise could place mental health professionals in the role of dismissing, trivializing, or hindering exercise as a viable adjunct to their treatment (Faulkner & Taylor, 2012). Accordingly, examining the factors that influence mental health professionals' use of physical activity for the prevention and treatment of mental health problems is warranted.

Consistent with the inclusion of physical activity in treatment, Counseling Psychology holds as one of its tenets a view of not pathologizing people and building on strengths without compromising independence. One common treatment for mental health concerns, medication, has been discussed in many forums as taking away people's agency and autonomy and the side-effects associated with medications have long been derided. Exercise, on the other hand, not only has been shown to be a positive intervention for mental health concerns, but the side effects of exercise are almost entirely positive; better heart health, increased quality of sleep, more energy, and lower levels of overall stress have all been well-documented (Meltzer, Phillips, & Mitchell, 2009). Using exercise therapeutically also has the potential, when implemented in the correct fashion, to be a cost-effective intervention and a helpful adjunct to treatment. In light of the research on the positive relationship between physical activity and mental health, combined with the positive associated benefits of physical activity, one is left to wonder what lies beneath the discrepancy in psychologists' implementation of exercise as a standard of care in addressing mental health concerns. What is needed to help explain the discrepancy between research and practice is a better understanding of the factors that influence clinicians' decision to implement, or not to implement physical activity as a mental health intervention.

In discussing how physical activity as an intervention fits with their approach to clinical work, a number of clinicians report that they feel the use of exercise as an intervention places the client in control of their own healing, which has been one of the factors associated with positive personal growth along the lines of Self Determination Theory (Edmunds, Ntoumanis, & Duda, 2007; Teixeira et al., 2012). Similarly, clinicians

have made the case that the comorbidity of many physical and psychological conditions justifies the use of exercise as a mental health intervention (Millard, 2013).

As an example, consider a hypothetical client who presents with moderate depression and concurrently deals with high blood pressure, food restrictions due to type-2 diabetes mellitus, and is moderately overweight. One potential approach would be to use therapy to help the client accept themselves and work to reduce the negative psychological symptoms associated with their self-perception. Another possible approach would be to use motivational interviewing to empower the client in taking ownership of their recovery. Yet another perspective would be to talk about the prejudices of society and how that relates to their current psychological state. Alternatively, one could focus on gaining understanding into the "root" of what is driving the clients' psychological distress. It is also possible that progress could be made to help the client reduce their negative psychological symptoms. However, the client is still forced to deal with the physical problems associated with being overweight and the other realities that come with unaddressed health conditions. Incorporating physical activity as part of psychological treatment could supplement the treatment approaches listed above, while having the secondary benefit of addressing one of the core causes of the distress with a positive impact on associated physical health conditions.

Using this case, consider the incorporation of exercise as part of the treatment. Implementing exercise as a mental health intervention has the potential to address both sets of concerns and to begin a cycle of reciprocal benefit. A single session of exercise could immediately benefit the clients' psychological well-being due to the increase in the amount of endorphins released and activation of neurotransmitters associated with

positive mood states. With this positive change in mood state, the individual may be more apt to see this as a success, which would increase the likelihood of engaging in this activity in the future, all while experiencing positive side effects related to physical health. The reciprocal process of increased feelings of physical and mental well-being has, in fact, been suggested as a key factor in the effectiveness of physical activity as a mental health intervention (Ekkekakis, 2013). Understanding clinical work in this complex way is one example of the potential power of integrated mental health care, or "health care for the whole person" (Levant, 2005, p. 147).

To date, much of the research that has been conducted on the use of physical activity as a mental health intervention has been done in countries outside of the US (e.g. Australia, Canada, India, United Kingdom) and in disciplines outside of psychology (exercise physiology, medicine, nursing, psychiatry, social work). A number of researchers (Daley, 2008; Millard, 2013; Otto & Smits, 2011) have postulated that mental health clinicians may be well-positioned to incorporate physical activity interventions with their clients. Along these lines, some countries already incorporate exercise as one of the standard approaches for the treatment of mental health concerns. In the United Kingdom, for instance, an exercise referral scheme exists that aims to engage clients in exercise regimens for a variety of maladies. However, to date, little research has been conducted examining the factors that influence American mental health practitioners' incorporation of physical activity in their clinical work. To better understand the factors that contribute to the use of physical activity as an intervention for mental health concerns, what is needed is to gather data to develop an empirical basis for why mental health practitioners do or do not implement physical activity in their treatment.

Possible factors affecting psychologist's use of exercise as a mental health intervention

To better understand the incorporation of physical activity, the aim of the current study will be to investigate the factors that influence clinicians' use of physical activity to promote mental health. Some answers to this question may lie in overcoming previously held notions that may be deeply rooted in historical roots of the professional field. Germin (2010) suggested that one possible underlying reason involves psychotherapists treating the mind and body as separate entities, with exercise being an intervention relating to the body rather than the mind. A participant in Faulkner and Biddle's (2001) qualitative study of directors of doctoral training programs in clinical psychology in England described this approach, stating, "I suspect the body is certainly not considered as much as it should be. The tradition is that we're psychologists and we don't deal with that" (p. 440). Among many potential other factors, the mind-body dualism beliefs are a likely barrier to psychologists embracing interventions such as exercise (Demertzi, 2009).

Although the discussion has long historic roots, a growing acceptance stemming from various cultural traditions is taking hold that the mind and body are not separate entities, but rather are inseparable from one another and therefore needing to be treated as such (Demertzi, 2009). Given the increased movement towards comprehensive etiologies of many diseases, including depression and anxiety, physical activity seems to be a place where psychologists could become more engaged and be able to provide effective interventions for the clients who are suitable for such interventions. In an age of increasing collaboration between psychologists and other health professionals in integrated care, it may be important for psychologists to broaden their appreciation of

exercise as one empirically supported facet of an overall comprehensive treatment approach for individuals with a variety of mental health afflictions. In fact, health service psychologists, and especially those trained in counseling psychology, may be ideally suited to lead the way on these positive changes.

Much of the literature in the area of behavior change, specifically as it relates to physical activity, suggests that the main problems with adoption of preventative health behaviors such as physical activity are psychological in nature, as opposed to stemming from physiological causes. For example, one recent finding suggests that the impediments to participating in exercise are largely psychological, such as anxiety about initiating exercise and lack of motivation to engage despite a desire to do so. Except for a small percentage of instances, no physical attribute is keeping individuals from engaging in physical activity (Weinberg & Gould, 2011). The substantial role that psychological factors play in incorporating health behaviors, such as physical activity, highlights the opportunity for mental health professionals to expand their interventions within an integrated model of care.

Clinicians who are physically active themselves are more likely to discuss physical activity with their patients than those professionals who are not physically active (McEntee & Halgin, 1996). Burks and Keeley (1989) found that professionals who have negative beliefs about physical activity, including absence of beliefs about the efficacy of exercise for mental health concerns, are less likely to address it within their clinical practice. Other researchers (e.g. Dixon, Mauzey, & Hall, 2003; Hitschfeld, 2011; Pasquariello, 2013) have suggested that therapists do not talk about exercise with clients because they lack knowledge on the influence of exercise on psychological disorders.

Additionally, Faulkner and Biddle (2001) have suggested that even those mental health professionals who do have the knowledge about physical activity and a favorable attitude towards exercise may not recommend it due to other factors such as believing that it is outside the realm of psychotherapy. Several additional barriers to addressing exercise in therapy have also been proposed including limited time with clients, beliefs about psychology pertaining more to the mind than the body, beliefs in clients' non-compliance, and fear of offending clients by talking about their bodies. These barriers inhibit psychotherapists from broaching the topic of exercise within therapy (Faulkner & Biddle, 2001; Germin, 2010; McEntee & Halgin, 1996).

Building from previous research (e.g. Olofsgard, 2009; Carlstedt, 2010), several possible factors will be investigated in this study including: the degree to which clinicians are themselves personally physically active, attitudes that mental health professionals hold about exercise, knowledge about the physical activity and mental health relationship, degree to which clinicians' believe that physical activity is within their purview, views about physical activity fitting or not fitting within their theoretical approach to clinical work, and clinicians' understanding and confidence about how to implement exercise as an intervention.

Purpose of the Present Study

Although the link between exercise and mental health has been well-researched, recent data suggest that physical activity for mental health continues to be a relatively seldomly used intervention. The purpose of the current project is to formulate a more comprehensive understanding of the factors that may influence mental health professionals' incorporation of exercise as a mental health intervention within their

clinical work. Additionally, this project aims to delineate the characteristics associated with those practitioners more likely incorporate exercise with clients.

Consistent with the values of Counseling Psychology, investigating the use of physical activity as an intervention promotes an approach that sees clients as a 'whole person', furthering a holistic view of well-being. The Society of Counseling Psychology, under the presidency of Dr. Helen Neville (2023), emphasized a mission to create a more just and equitable world by promoting healing and thriving across all communities. This mission is pursued through holistic and strength-based approaches in psychology and public sector activities, including practice, research, education, training, advocacy, consultation, and leadership. Counseling Psychology is dedicated to facilitating personal and interpersonal functioning across the lifespan, addressing a wide range of issues from developmental concerns to disorders (Neville, 2023), which falls squarely in line with the current line of inquiry.

Remarks from Ruth Fassinger, past President of Division 17 (2019), reflect how this topic corresponds with many of the values of Counseling Psychology, including empowering people to improve their lives, reach their potential, and move toward self-actualization by building upon their strengths. This research is also in line with the values of promoting psychological functioning and resilience beyond ameliorating pathology by using effective psychological interventions that attend to development, prevention, and health across the lifespan. Additionally, past Division 17 President Arpana Inman remarked that in her Presidential Initiative that Counseling Psychology should continue to explore areas where there is an overlap of physical and mental health within our population (2018).

While much of the recent research has focused on looking at which specific exercise protocols are most effective with a variety of groups and conditions, what has been lacking in the literature is an empirical examination of how the incorporation of exercise is implemented by the mental health professionals who are in a position to help appropriate populations engage in physical activity. Although there has been discussion in previous literature regarding variables that are likely to impact mental health practitioners' decisions to use physical activity as a part of treatment loosely based on various theoretical approaches and decision-making frameworks, what is missing is a coherent and underlying conceptual framework through which to view the current literature and clinical decision-making considerations. The current study, therefore, aims to examine the relationship through the lens of the clinical decision-making model to better understand the relationship between mental health practitioner related factors and their association with how these professionals incorporate exercise within their clinical work.

CHAPTER II

A REVIEW OF THE LITERATURE

Chapter one discussed the ways in which using exercise within integrated care has the potential to be helpful in moving forward the field of Counseling Psychology. Chapter one touched on the research examining the positive relationship between exercise and psychological disorders, findings on addressing exercise in therapy, and some potential factors that influence professionals to address exercise with clients. Chapter one also helped to frame the basic questions of how frequently physical activity is being used by mental health practitioners and what factors influence the use of physical activity as a mental health intervention. This chapter will provide a critical review of the extant literature illuminating the potential factors which may influence clinicians' use of exercise as a mental health intervention with a focus on a clinical-decision making model (Jacobs et al., 2012). These areas of the literature will then be integrated to form the specific hypotheses for the current study.

Rationale/Introduction

In our sedentary society, physical inactivity has become what some have called the biggest public health concern of the 21st century (Blair, 2009). Physical inactivity is also a serious concern specifically for psychological health (Daley, 2008). The link between physical activity and mental health has a long and well documented history (Jacob et al, 2020; Leith, 2009). Further, the societal importance of public mental health

and its worldwide impact and economic costs are too large to ignore. Existing mental health problems contribute to a high cost both in quality of life and healthcare costs and overall economic impact (Ekkekakis, 2013).

In addition to numerous physical health benefits, physical activity has been associated with a number of positive psychological and social outcomes. A growing body of evidence suggests that physical activity may be a safe, inexpensive, and, most importantly, effective lifestyle intervention that could assist in both treating and preventing a wide range of mental health problems improving overall quality of life (Acevedo, 2012; Daley, 2008; Ekkekakis, 2013). A number of researchers and public health officials have suggested that physical activity should be more readily considered for treatment of mental health concerns (Fortier et al., 2011; Otto & Smits, 2011).

In the age of integrated health care, it is increasingly important for psychology to incorporate interventions that promote health for the whole person (Levant, 2005). Exercise is one intervention that can be used effectively in this realm. Psychologists are well positioned to provide physical activity counseling and may have ethical obligations to address physical activity with their clients (Pasquariello, 2013). Despite all of the potential positive benefits of clients engaging in physical activity, it is apparent that psychologists continue to underutilize exercise within mental health treatment (Acevedo, 2012; Otto & Smits, 2011). Although some researchers have attempted to look at numbers of psychologists utilizing exercise as part of treatment, no comprehensive data has been collected recently. Carlstedt (2010) concluded that, "the percentage of practitioners who utilize exercise psychotherapy with their patients is largely undetermined" (p.744). Although solid up-to-date data regarding the actual number of

psychologists using exercise with their patients is not currently known, previous studies have suggested physical activity is a relatively infrequent intervention used by mental health professionals (Callaghan, 2004; McEntee & Halgin, 1996). As such, one aim of the current study is to collect current data on mental health professionals' use of physical activity in treatment with their patients. Given the strong research that currently exists supporting the efficacy of physical activity, some individuals have been perplexed at the relatively sparse number of clinicians who use exercise as part of their treatment (Biddle, 2007; Callaghan, 2004). Although there have been a number of articles and position pieces calling for an increase in the number of psychologists using exercise in treatment, relatively little has been done to better understand the factors that influence the decision of psychologists to use (or not use) exercise in their treatment. A second aim of the current study is to outline these factors as a way of conceptualizing the perceived divide between the literature base and practices of mental health practitioners. A number of factors will be proposed in this chapter as arising from extant research and theory and discussed as plausible reasons why exercise is not used more frequently by mental health practitioners. Each of these potential factors will then be tested to determine the amount that these and other factors may contribute to the decisions made by mental health practitioners to use exercise in treatment. In addition, mental health practitioners surveyed will also be asked to offer their own explanation for their use or non-use of physical activity as an intervention with their clients.

Historical Perspectives on Physical Activity and Mental Health

The link between physical activity and health has a long and well documented history (Leith, 2009). Exercise has been described as a fundamental component of "the

healing power of nature" since the time of ancient Egypt and Greece, albeit without a scientific rationale for the underlying mechanisms (Dixon, Mauzey, & Hall, 2003). Metwaly et al. (2021) describes the integration of physical activity as a "therapeutic component" of ancient Egyptian medicine and suggests this approach to care was later passed on to Greek medicine. Acevedo (2012) quotes Plato as saying "lack of activity destroys the good condition of every human being, while movement and methodical physical exercise promote and preserve it" (p.3). The ancient Greek physician, Hippocrates, recommended physical activity for the treatment of mental illness. In 400 BC, Hippocrates is quoted as saying "eating alone will not keep a man well; he must also take exercise. For food and exercise work together to produce a healthy body and mind" (Jonas & Phillips, 2012). In 1632 the British theologian, Robert Burton, wrote about the risks of a sedentary lifestyle, "opposite to exercise is idleness or want of exercise, the bane of body and mind, one of the seven deadly sins, and a sole cause of melancholy" (in Faulkner & Taylor, 2005, p. xviii).

Near the turn of the 20th century, W.E.B. Du Bois, an American sociologist and historian, expressed support for physical education as part of a liberal arts education. Du Bois called for an equal emphasis on mental stimulation and play in education for overall health, contending that one enhances the other. "Boys and girls should be encouraged, if not compelled," he wrote, "to run, jump, walk, row, swim, throw and vault." He continued that "we must rapidly come to the place where the man all brain and no muscle is looked upon as almost as big a fool as the man all muscle and no brain" (Anderson, 2006).

Around the same time, William James, the father of American psychology, stated in 1899 that "muscular vigor will always be needed to furnish the background of sanity, serenity, and cheerfulness to life, to give moral of elasticity to our disposition, to round off the wiry edge of our fruitfulness, and make us good-humored and easy of approach" (in Faulkner & Taylor, 2005, p. xviii). These are but a few of the individuals throughout the course of history who have highlighted the understanding of the important link between of physical activity and personal health.

The empirical study of the link between exercise and psychology is a comparatively new field, but is based on classic ideas linking the mind and body (e.g., healthy body equals healthy mind; Dixon, Mauzey, & Hall, 2003). Only recently, society has become increasingly engaged in sedentary work, travel, and leisure activities (Acevedo, 2012; Biddle & Mutrie, 2008; Ekkekakis, 2013). Many of the psychological consequences of sedentary behavior, and conversely physical activity, have been identified in a number of texts (Acevedo, 2012; Ekkekakis, 2013; Faulkner & Taylor, 2005). Today, with less need for physical activity to perform important work for survival, ease of transportation, more of the population living in urban and suburban settings, and almost effortless access to information, most people must make a conscious effort to incorporate physical activity into their lifestyles (Acevedo, 2012). The challenge to self-regulate exercise behavior has had unexpected, negative health consequences. The consequences of a more inactive society include widespread serious deterioration of health and quality of life. For example, past studies indicate that 63% of U.S. men and women are overweight, and about 35% are classified as obese (Ekkekakis, 2013). Commenting on this problem in her keynote address at the 2004 Society of Behavioral

Medicine Conference in Baltimore, Dr. Risa J. Lavizzo-Mourey, President and Chief Executive Officer of the Robert Wood Johnson Foundation, indicated for the first time in U.S. history, children today will live a shorter, lower quality of life than their parents. She reported that since 1980, the number of overweight children ages 6 to 11, and adolescents age 12-18 has doubled and tripled, respectively (Anshel, 2010).

Today, the American College of Sport Medicine (ACSM), American Medical Association (AMA), American Heart Association (AHA), and many other supporting organizations are calling on all physicians and healthcare workers to make physical activity and exercise a standard part of a disease prevention and treatment medical paradigm in the United States (Jonas & Phillips, 2012). As a nation, there is a lot at stake in getting citizens to utilize physical activity as a health intervention. The cost of inactivity is staggering, with an estimated 250,000 premature deaths annually in the US directly attributed to inactivity and the costs of medical care for inactive patients dwarfing that required to care for active ones (USDHHS, 2018). Jonas and Phillips (2012) warn that physical inactivity will become the greatest public health problem of our time if the health care system does not take bold action.

To help reduce this sedentary lifestyle, discussion has focused on ways that exercise can be more utilized and promoted on a larger scale by individuals in a positon to promote public health. One example of an approach to this, *Exercise is Medicine*, is an initiative taken up by the American College of Sports Medicine to advocate for the promotion of exercise by health practitioners. This initiative lists as one of its aims, "making physical activity and exercise a standard part of a disease prevention and treatment medical paradigm in the United States" (p.13). Another focus listed by Exercise

is Medicine was "for physical activity to be considered by all health care providers as a vital sign in every patient visit, and that patients are effectively counseled and referred as to their physical activity and health needs, thus leading to overall improvement in the public's health and long-term reduction in health care costs (Jonas & Phillips, 2012, p. 18). The Exercise is Medicine initiative strongly encourages physicians and other health professionals to ask questions related to physical activity every time they see their patients (Sallis, 2011). Accordingly, this initiative prompted health providers to also prioritize physical activity in their patients' overall wellbeing. More research is needed, however, to determine if mental health providers are following this directive, and what factors may serve as incentives or barriers to providers using physical activity in their intervention (Sallis, 2011). The current study hopes to add clarity to the potential that exercise may offer to the growing field of mental health promotion by identifying factors related to promoting physical activity as one aspect of promoting good mental health (Faulkner & Taylor, 2005).

Considering the nature of the current problems related to sedentary behavior in our society, promoting physical activity has clear relevance to improving both physical and mental health (Acevedo, 2012). In addition to physical conditions, modern society appears to be characterized by relatively high incidence of mental disorders (Leith, 2009). For some individuals, these problems are severe enough to cause significant burden. Problems of this nature consistently require professional intervention. For others, their fluctuations in mental state reflects normal reactions to day-to-day stressors that may impact overall quality of life. Accumulating research now suggests exercise has the potential to help individuals whose concerns may be considered clinical as well as

individuals experiencing less severe symptoms (Leith, 2009). Evidence supports the view that appropriate physical activity can have significant health benefits for all sectors of the population.

In the past two decades, as a growing number of researchers have looked at the effects of physical activity on psychological well-being, the use of exercise as an intervention has gained increased acceptance (Faulkner & Taylor, 2005). "Exercise psychologists" study the psychological antecedents of physical activity and use their theoretical perspectives to inform the design and implementation of interventions to change sedentary lifestyles (Faulkner & Taylor, 2005). A growing body of scientific evidence shows that exercise is effective in both the treatment and prevention of various psychological disorders (Sime, 2007). Thus, it is a concern that few mental health therapists seem to use exercise as part of their service delivery or feel competent or comfortable incorporating physical activity within their clinical work (McEntee & Halgin, 1996). Previous research has suggested that relatively small numbers of clinicians use exercise as a mental health intervention, although it is not clear as to the reasons these numbers are not higher (Biddle & Mutrie, 2008). The current study will consider a variety of factors which may influence the inclusion of physical activity within mental health treatment. Through a clearer understanding of these determinants and using the lens of a clinical-decision making model, we may better understand how mental health professionals can assist with increasing physical activity participation rates, decrease sedentary behavior, and bring about significant public health benefits made possible by advocating for increased physical activity (Biddle & Mutrie, 2008). A better

understanding of the determinants will provide an empirically-based overview of the emerging case for exercise in the promotion of mental health.

Efficacy of Physical Activity for General Mental Health and Specific Conditions

Research has overwhelmingly and consistently demonstrated the positive effects of physical activity on mental health (e.g., Babyak et al., 2000; Landers & Arent, 2008; Paluska & Schwenk, 2000; Strathopoulo et al., 2006; Wipfli, Rethorst, & Landers, 2008). Involvement in physical activity can have important psychological benefits (Faulkner & Taylor, 2005). Although this has been known to some degree for some time, it is only relatively recently that a systematic approach has been adopted towards the accumulation of empirical evidence to support these anecdotal observations (Faulkner & Taylor, 2005). The accumulation of evidence over the past two decades has involved the use of experimental trials, large-scale surveys, and detailed qualitative studies (Faulkner & Taylor, 2005). Well cited meta-analytic reviews have brought many studies together, with facets of exercise and physical activity assessed regarding its impact on anxiety, stress reactivity, depression, mood, and cognitive functioning (Faulkner & Taylor, 2005). In addition, reviews exist on the links between physical activity and self-perceptions including self-esteem and health-related quality of life (Faulkner & Taylor, 2005). The consensus of these reviews indicates consistently that physical activity has a positive effect on mental health.

Although not a panacea, exercise has been demonstrated to be effective in the treatment of a number of physical and psychological presenting concerns. These concerns range from obesity, heart problems, sleep difficulties, depression, anxiety, and a number of other variables related to overall psychological well-being (Ekkekakis, 2013). The full

range of concerns that exercise has been shown to be beneficial for can be found in detail in reviews completed by Acevedo (2012) and Ekkekakis (2013). Many of these conditions also have a reciprocal effect on one another, with positive changes in one area subsequently promoting positive changes in another (i.e. better quality of sleep may result in fewer depressive symptoms and higher energy levels). Additionally, in contrast to interventions such as medication, few negative side effects have been documented from the use of exercise as an intervention (Biddle, 2007). Groups such as the American College of Sports Medicine, Centers for Disease Control (CDC), the World Health Organization (WHO), and others have promoted the use of physical activity for the treatment of a number of mental health concerns.

There are several mechanisms of action that have been proposed that describe the way in which exercise works to reduce symptoms of anxiety and depression. Although a complete discussion of these mechanisms is beyond the scope of this review, several of these proposed explanations for how exercise impacts psychological health, including increased self-confidence, autonomy, and changes to the neurochemical makeup of the brain are all consistent with the current research. Previous research alludes to the benefits of exercise and the reduction of risk for chronic health conditions (Barnes, 2012). Engaging in regular physical activity can reduce the dependence on medication, improve quality of life, and help maintain psychological well-being (Barnes, 2012).

More specifically, physical activity has been determined to play an influential role in decreasing depressive and anxious symptoms and in bolstering self-esteem, mood, and overall psychological wellbeing (Landers & Arent, 2008). Physical activity has also been demonstrated to positively influence cognitive functioning (e.g., Colcombe & Kramer,

2003; Germin 2010; Heyn, Abrue & Attenbacher, 2004; Hillman, Erickson, & Kramer, 2008; Landers & Arent, 2008). Fitness levels and regular physical activity have been reported to be inversely related to depression and other mood disturbances (Lee & Russell, 2003; Ströhle et al, 2007) as well as enhanced psychological health and well-being (Callaghan, 2004; Lane & Terry, 2000). Exercise has been determined to be an effective method of enhancing mood (Berger & Motl, 2000; Lane & Terry, 2000), as well as ameliorating negative mood. In this regard, a growing body of literature has demonstrated that exercise is viable and cost effective, yet vastly underutilized in the treatment and prevention of psychological and emotional disorders and disturbances (Germin, 2010; Hays, 1999; Olofsgard, 2009).

Exercise interventions have been shown to be comparable to psychopharmacologic medications (e.g., Zoloft, an SSRI) for the treatment of major depressive disorder, both immediately following treatment and at six-month follow-up (Babyak et al., 2000; Blumenthal et al., 1999, 2007). Blumenthal et al. (1999) conducted a 16-week randomized control trial comparing the effectiveness of an aerobic exercise plan with antidepressant medication for Major Depressive Disorder (MDD). Their study of men and women over the age of 50 (N=156) concluded that aerobic exercise was comparable to medication for the treatment of depression as measured by participant scores on the Hamilton Rating Scale for Depression (HAM-D) and the Beck Depression Inventory (BDI). Exercise has often been identified as a key to increasing the quality of life and longevity and has been correlated with many aspects of human health, including mental health (Dixon, Mauzey, & Hall, 2003).

Another area exercise has shown promise is the effect of physical activity on both physical health and mental health. In fact, physical activity may be an innovative and effective way of enhancing the balance between physical and mental health. Increasing the physical and mental health balance has the potential to benefit both areas through a reciprocal effect on one another. This demonstrated relationship between physical health and mental health may be critical for two reasons. For one, the literature indicates that mental health outcomes motivate people to persist in physical activity for physiological benefits while also concurrently having a potentially positive impact on well-being (Otto & Smits, 2011). Second, because physical activity can be an effective method for improving important aspects of physical health such as obesity, cardiovascular fitness, and hypertension, the promotion of exercise for psychological well-being can be seen as a win-win situation with both mental and physical health benefits accruing (Faulkner & Taylor, 2005).

Researchers have sought to gain a better understanding of the relationship that exists between exercise and anxiety, depression, mood, self-concept, and other personality factors (Dixon, Mauzey, & Hall, 2003). Mental health researchers have suggested that a single session of physical exercise might be able to enhance both the physical and mental health of clients (Dixon, Mauzey, & Hall, 2003). Faulkner and Taylor (2005) provided a collection of reviews that summarize the research evidence that exists to support the emerging use of physical activity and exercise as a mental health promotion strategy in a range of conditions and populations, and how this information can guide practitioners and researchers in the context of increasing concern for evidence-based practice. The authors highlight Blumenthal (1999) and Mead et al. (2009) as two

well-conducted studies establishing the benefit of physical activity for the treatment of mental health concerns. Faulkner and Taylor (2005) concluded their review by indicating that the current consensus clearly supports an association between physical activity and numerous domains of mental health in the general population.

Numerous biological reasons for the benefits of exercise for mental health have been noted and discussed at length (Faulkner & Taylor, 2005). Psychosocial theories which link physical activity with psychological health have also been posited. These include the cognitive ("distraction") hypothesis, which stipulates that exercise provides a temporary timeout from everyday preoccupations and stressors (Faulkner & Taylor, 2005). Other theorists suggest that the efficacy promoted by healthy engagement in physical activity can have "spillover" effects into other life areas. Engaging in physical activity may also empower clients, get them moving, increase social contact, and give life meaning and purpose. The exercise and mental health relationship has been discussed as working via a number of different mechanisms, many of which likely work with one another. As a result, these physiologic and psychological theories may have interaction effects, such as in the biopsychosocial model, which reflects interactions among biological, psychological, and social processes (Dixon, Mauzey, & Hall, 2003). The complex interaction of mechanisms underlying the effectiveness of exercise as a helpful intervention for mental health concerns fits in well with an empirically-based integrated model of care.

Use of a clinical decision making model to better understand factors

Despite there being a sizable literature base on the connection between physical and psychological well-being, there is no comprehensive model that addresses the way

that mental health practitioners include physical activity as part of their interventions with patients. As no model exists looking at this area of practitioner behavior, aspects of a clinical decision making model (Jacobs et al., 2012; Figure 1) have been used as the theoretical framework for this study. Decision-making is a multifaceted and contextual process (Smith, Higgs & Ellis, 2007) and the factors assessed in this study aim to capture a snapshot of clinician behavior in an effort to help better understand the variables that play into whether clinicians use physical activity with their patients. The tenets of the decision-making model include three inter-related levels of variables to consider regarding the use of physical activity as treatment: therapist considerations (e.g., knowledge, personal activity levels, theoretical orientation, self-efficacy in service delivery), client variables (e.g., mental health concerns, stage of treatment, treatment goals), and best available research evidence (e.g., support for PA interventions).

The tenets of the clinical decision making model are proposed as a way to look at the process of clinicians arriving at decisions when delivering care to patients, particularly when there are multiple options that exist that relate to whether one intervention or another would be more effective or in some way superior to another intervention. The decision-making model has three general parameters: the best available research evidence, client/population characteristics, and resources (which includes practitioner expertise). The best available research evidence has been presented in the literature review for this study and will be assessed by looking at the awareness that clinicians have about the vast research base that exists regarding the mental health benefits of exercise. Additionally, this is assessed for by looking at which conditions and diagnoses clinicians report considering the use of exercise for and what leads to those

decisions being made. Another aspect of this component of the model is the comfortability of clinicians in using physical activity as an intervention and their confidence in being able to do so, which is also hypothesized to relate to information one has about the research base concerning the mental health benefits of physical activity.

Secondly, client characteristics (needs, values, preferences, and expectations) also factor into the decision-making process for patients (Jacobs et al., 2012). As client preferences and needs are not being directly assessed in the current study, an attempt has been made to assess clinicians' perceptions of their clients responses to various treatments and how a number of client factors play into their decision to use or not use physical activity as an intervention with their patients. Given that treatment adherence is an important aspect of positive outcomes in mental health treatment (Smith, Higgs & Ellis, 2007), assessing for the viability of a particular intervention with a patient population is an important component. This is particularly true for the current study, as exercise behavior is known to have high rates of dropout and discontinuation (Faulkner & Taylor, 2005), often due to behavioral factors with which mental health professionals may be suited to assist patients.

The final aspect of the decision-making model discussed here, and the one receiving the most attention in the current study, is the available resources for an intervention, particularly practitioner expertise. Several measures have been included in this study and aim to assess for the attitudes, impressions, beliefs, and self-efficacy that practitioners feel about the use of exercise as a mental health intervention. For instance, previous research (Ekkekakis, 2013) has discussed that individual's personal use of

exercise, theoretical orientation, or lack of self-efficacy could be at play when understanding clinicians decision to use or not use physical activity as an intervention.

Aspects of clinical decision making have been used, in varying forms, by a number of previous studies examining questions similar to the ones proposed in this study. For instance, in one qualitative study (Smith, Higgs & Ellis, 2007) looking at decision-making in nurses for patients in a physiotherapy context, the authors examined various factors that influence treatment decisions. The authors concluded through their qualitative study that factors such as practitioner comfortability and expertise, the therapeutic relationship, the environment/setting where the intervention takes place, and patient preferences were all important in arriving at a decision for care. Elwyn et al. (2012) further discuss the use of a shared decision-making model and highlight both practitioner and client variables as both being important in the clinical decision-making process. Additionally, a document from the NHS (2010) describes the tenets involved in clinical decision making, particularly the need for informed treatment and inclusion of client preferences, and also discusses how they relate to one another in this context.

Taken together, the results of the literature review suggest that clinical decision making must entail factors related to population characteristics, practitioner expertise, and the best available research evidence. Within these, the factor most often identified as being a primary contributor to the decision-making process is the clinician attitudes and expertise in the area of an intervention in which they are looking to implement. Although this project examines a variety of variables and their potential impact on the degree to which a mental health practitioner might use physical activity (PA) as one aspect of a therapeutic intervention with a client, examining how and why these variables might be

related is an important part contribution that is lacking in the current research landscape. Although it is recognized that consideration of an underlying, unifying theory upon which to base and test speculation about the role and use of PA as therapy is lacking in the literature reviewed, this study aims to avoid continuation of this particular shortcoming, instead aiming to improve on this limitation in the literature by constructing a more theoretical basis for the research questions being examined using a model of clinical decision making. In constructing a more comprehensive understanding about how the variables being viewed might be related, the elements of clinical decision-making help establish the relationships influencing how PA might fit into overall client treatment considerations.

Integrating Care of Mental Health and Physical Health

The World Health Organization (WHO) describes integrated care as, "the management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system" (WHO, 2008, p.2). As it relates to mental health practitioners, the emerging healthcare landscape seeks to increasingly incorporate treatments, both preventative and curative, that help to address mental health concerns while also achieving benefits across other levels of the healthcare system. As such, more information is needed about potential mental health interventions that seek to address the whole person.

Traditionally, the role of exercise as a health behavior has focused almost exclusively on physiological adaptations to physical activity (Leith, 2009). The current trend towards holistic health and wellness has now resulted in exercise being considered

for its possible impact on psychological in addition to physiological health (Leith, 2009). Exercise-based interventions offer the opportunity to address multiple mental and physical health conditions simultaneously (Faulkner & Taylor, 2005). Also, psychological adaptations to promote physical activity have begun to follow suit. Although many professionals have advocated for the use of exercise for the treatment of concerns such as obesity, diabetes, and other physical ailments, until recently few have advocated for the use of physical activity in the treatment of mental health concerns (Carlstedt, 2010). However, in the past decade, a growing number of researchers and others in the field of public health have called for an increased promotion of physical activity for the prevention and treatment of psychological health concerns (Callaghan, 2004; Ekkekakis, 2013; Milllard, 2013). Some clinicians have argued that the use of exercise in therapy fits nicely within the framework of counseling psychology's emphasis on prevention and positive psychology (Acevedo, 2012; Nilsson, Berkel, & Chong, 2019; Pasquariello, 2013). For instance, in their article looking at the effectiveness of exercise as intervention, Acevedo et al. (2012) advocate for researchers to better understand the incorporation of exercise as an intervention by psychological health care providers. Additionally, clinicians may want to consider exercise as a viable, cost-effective treatment alternative or adjunct for depression and anxiety (Dixon, Mauzey, & Hall, 2003). Educating clients on the use of available environmental features (e.g., running trails, malls, parks, golf courses) may also be useful (Dixon, Mauzey, & Hall, 2003; Kleemann et al., 2020). Additionally, as health professionals with a specialty in promoting personal behavior change, mental health providers may be in a unique position to address the fact that approximately 60-70% of adults who begin an exercise program

will quit within 6-9 months, despite the common belief by participants (82%) that exercise is beneficial to good health (Marcus, King, Bock, Borrelli, & Clark, 1998).

Further illustrating the utility of exercise as an integrated intervention is the relationship between the physical and psychological effects of the intervention. For example, the exercise-induced "feel better" effect, although not universally found, is now a reliably established phenomenon (Ekkekakis, 2013). This effect is typically associated with moderate levels of exercise intensity, although for some individuals intensities need to be higher. Due to the high number of sedentary individuals who are unable to meet this threshold, however, significant numbers of people are not able to obtain the level of activity to reach this effect. Therein lies the challenge for public health. To keep people physically active, and thus enable them to benefit from the effects of exercise, the exercise must be pleasant. When exercise is not enjoyable, dropout is more likely to ensue, leading to an even poorer state of physical conditioning, and a perpetuation of a vicious cycle. By better understanding the factors that influence the incorporation of exercise, positive steps can be made toward implementing an intervention that is consistent with the focus on addressing the interaction of physical and mental health.

Although mental health professionals may not have traditionally used interventions such as exercise as a part of their treatment, the changing healthcare landscape dictates that psychologists will need to increasingly collaborate with other health professions in delivering healthcare. Exercise is one of the areas where psychology stands to play a large role in the new integrated care landscape (Ekkekakis, 2013; Faulkner, 2009). Several researchers have supported this integration with calls for a greater incorporation of physical activity within the counseling context. Bhatia (2011),

for example, highlights the need for psychology to join with other healthcare providers in providing comprehensive care for patients. Additionally, Daley (2002) noted that psychologists are well-positioned to promote exercise with their patients. Further, Ekkekakis (2013) discussed the myriad of secondary physiological health benefits that could be accrued through increased physical activity by mental health patients.

In a good example of incorporating physical activity as part of an integrated care treatment approach, Mays and Croake (1997) investigated hospital patients treated for major depressive disorder 1 to 2 years after discharge, assessing the usefulness of a regular aerobic exercise program. The participants (N=430) retrospectively ranked physical exercise as a most important element in their comprehensive treatment program. It is noteworthy that most participants continued regular exercise after discharge and most of these exercised aerobically for at least two hours a week. Those who exercised tended to have lower depression scores in follow-up than in non-exercisers (Mays & Croake, 1997). Lehofer et al. (1992), reviewing psychological and biological research, discussed how running therapy can fit into psychiatric treatment for depression. An increase in activity level, improved social competency, and improvement of a host of attitudes and habits associated with depression were noted as causes of improvement. A positive effect on vegetative symptoms of depression also stood out. Many patients who displayed low energy and other depressive symptoms were less likely to exercise than a more energetic and goal oriented person. The question becomes how to implement an exercise program for the depressed patient. Although exercise may ultimately become self-reinforcing for some patients, a great deal of extra energy on the part of the therapist

may be necessary to "jumpstart" this behavioral pattern (Nilsson, Berkel, & Chong, 2019).

In our emerging health care system, mental health professionals are seeing that evidence-based practice offers the most responsible course of action with clients (Jonas & Phillips, 2012). One of the best-kept secrets in the treatment of mood and anxiety disorders is the proven efficacy of a program of exercise, which has many benefits on mood, but has yet to be widely adopted as a therapeutic technique. Acevedo (2012) points to the obvious benefits of exercise for stress, mood, and anxiety management, combined with the benefits for physical health and well-being, to show a clear need for adoption of exercise based interventions across the range of settings where patients seek help. For many professionals, it may be a matter of not knowing how to incorporate exercise within their treatment. In their manual *Exercise for Mood and Anxiety Disorders*, Otto and Smits (2009) provide guidance for integrating exercise-based interventions within mental health care. Otto and Smits recommend that clinicians dedicate time either at the beginning or end of each session to discuss physical activity with clients, addressing any benefits and barriers their clients have experienced. To providers, these exercise-based interventions may be particularly appealing because they are easy to implement in a variety of settings and easy to learn. For patients, exercise interventions may be appealing because of the reduced stigma associated with such interventions relative to other established treatments for mood and anxiety disorders (Otto & Smits, 2009).

Although many researchers have discussed the benefits of incorporating empirically based mental health interventions in treatment, Faulkner and Taylor (2005) described the ways in which psychology has been slow to take on new interventions, like

exercise. There are likely many mental health professionals working and studying in the field of mental health promotion and treatment who have not even considered the implications of promoting a more physically active lifestyle.

Brinks and Franklin (2011) speculated that there are a number of barriers that exist to incorporating physical activity as a mental health intervention, including lack of training and efficacy of using exercise as an intervention. Brinks and Franklin (2011) also discussed the view by some mental health practitioners that incorporation of exercise within treatment falls outside of the scope of their role. Considering the hypothesized barriers that exist in the promotion of exercise behaviors by mental health practitioners, the current study will examine the effect that these barriers may have on the incorporation of exercise as a mental health intervention.

The option of physical activity interventions for promoting mental health must be evaluated in the context of barriers that present themselves for mental health professionals looking to incorporate physical activity in their interventions. The concerns about the efficacy, safety, and cost of the main forms of therapy have prompted a search for other viable options. It is reasonable to propose that the conditions are now right for the consideration and acceptance of effective, inexpensive, and commonly accessible alternative therapeutic modalities for a wide-ranging spectrum of mental health problems. Of the available options, physical activity seems well positioned due to an already voluminous evidence base, essential absence of adverse side effects, minimal cost, limitless global accessibility, and a wide range of collateral benefits, including those regarding metabolic and cardiovascular health (Phillips, Kiernan, & King, 2003). Acceptance of exercise as a mental health intervention also serves to address the growing

skepticism about psycho and pharmacotherapies, which each have a number of drawbacks (Ekkekakis, 2013).

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. Since 1979, the U.S. Department of Health and Human Services' Healthy People initiative has set and monitored 10-year national health objectives to meet a broad range of health needs, encourage collaborations across sectors, guide individuals toward making informed health decisions and measure the impact of prevention activities. Healthy People 2030 is the fifth iteration of the initiative, where Psychology was mentioned as having a role in achieving the goals of this endeavor. This followed the American Psychological Association's provision of comments on the document to advocate for psychology's role in providing interventions, including exercise, as part of a larger health care team.

To advance the central role of behavioral and psychological factors in health promotion, prevention, treatment and recovery, APA members, divisions, and staff worked together to provide comments on the draft objectives of Healthy People 2023. Among APA's suggestions were that the Healthy People 2030 document specifically reference psychologists and health psychologists as members of health-care teams. "Psychologists are widely recognized as bona fide members of health-care delivery teams and are broadly trained to enhance quality of care and patient outcome" (APA, 2010, p.2). The APA also discussed the need for psychologists to incorporate their work with other healthcare professionals, an endeavor which is consistent with the use of exercise as an intervention. With the emerging healthcare landscape, it is important to assess for the views and approaches psychologists are using to better understand what factors

contribute to the use of exercise as a mental health intervention. Promotion of exercise interventions seek to address the whole person and provide a valuable tool to evaluate in the context of integrated mental health care. Although the incorporation and integration of physical activity by mental health providers within the US health care system has received relatively little attention to this point, a variety of other healthcare disciplines in the US and mental health providers in other countries have been researching and regularly incorporating physical activity as a mental health intervention.

Exercise Studied as an Intervention in Other Healthcare Disciplines

The promotion of exercise has taken on a larger role in several other healthcare disciplines and in other areas of the world, particularly in those countries with socialized medicine or a standardized exercise prescription referral program. Countries like Canada, the United Kingdom, Australia, and even India are producing the majority of the research looking at this topic (Germin, 2010; Khan, Weiler, & Blair, 2011; Olofsgard, 2009). Studies have also looked at the use of exercise promotion as a primary care intervention and a prevention strategy by physicians, psychiatrists, nurses, and mental health social workers (Daley, 2008; Hitschfeld, 2011). In a number of the studies looking at exercise promotion by health professionals, researchers (Callaghan, 2004; Faulkner, 2012) have found that exercise prescription by clinicians remains a relatively underused intervention.

Although research demonstrating the efficacy of exercise as an intervention is still underutilized, recent authors indicate that exercise as an intervention has increased in frequency over the past decade (Pasquariello, 2013). What has been somewhat neglected in the research, however, is the use of exercise as intervention by mental health practitioners. While research has been done in other professions, namely medicine and

nursing, the role of exercise as an intervention by mental health professionals has been largely unaddressed (Callaghan, 2004; Olofsgard, 2009). The current research study will provide a solid foundation to study the factors that influence incorporation of exercise as an intervention among mental health professionals in the US.

A recent survey (N=226) conducted of the public by the American College of Sports Medicine (ACSM) found that nearly two-thirds of patients (65%) would have an increased interest in exercising to stay healthy if advised by their doctor and given additional resources (Craft, 2005). The ACSM recommends that physicians ask about exercise at every patient visit and a patient's activity level should be looked at as a vital sign because it is one the best indicators of a person's health and longevity (Otto & Smits, 2011). Jonas and Phillips (2012) suggest that the message to discuss exercise should be the same, regardless of medical provider or specialty, and should be embraced and reinforced throughout all of organized medicine. Although psychology has often fallen on the edges of organized medicine, and at times resisted being included with organized medicine, exercise promotion is an area where psychology has a significant amount of input to offer with regard to implementing and maintaining this significant health-promoting behavior (Otto & Smits, 2011). Millard (2013) further noted the potential psychological difficulties that patients face when beginning to include physical activity as part of their treatment, and how mental health professionals play an important role in delivering this important intervention.

Another recent report also offered objectives for the discussion of physical activity by healthcare providers. In its report, *Healthy People 2030* discussed an initiative for increasing the proportion of physician office visits that include counseling or

education related to exercise (USDHHS, 2021). Physician counseling for exercise had not previously been tracked by the Healthy People initiative. The most recent report looked at this emerging health issue from the vantage point of adults in the general population who had seen a physician or other health professional in the past 12 months and had been advised to begin or continue to do exercise or other physical activity. About 8 in 10 adults had seen a health professional in the past 12 months during 2000 (80.6%), 2005 (81.2%), and 2010 (79.8%), respectively, with estimates varying by demographic subgroups (Barnes, 2012). In 2010, about one in three adults (32.4%) who had seen a physician or other health professional in the past year had been advised to exercise or do other physical activity, which reflects an upward trend since 2000, when closer to one in five adults (22.6%) reported having been advised to exercise, moving in the direction of meeting Healthy People 2030 goals (USDHHS, 2021).

In relative terms, there has been more than a 40% increase—from 22.6% of adults in 2010 to 32.4% in 2020. Trends over the past 10 years suggest that the healthcare community has increased its efforts to recommend participation in exercise and other physical activity, which research has shown to be associated with substantial health benefits. Still, healthcare providers recommend participation in physical activity and exercise to well below one-half of their patients (Barnes, 2012). These recommendations for physical activity also vary substantially across population subgroups, with middle-aged adults aged 45 to 64 (41.6%) and women (34.1%) being recommended exercise at higher rates than their younger (20.9%) and male (30.3%) counterparts (Barnes, 2012).

Previous Information on Use of Exercise by Mental Health Practitioners

In one of the few studies looking at the use of exercise by healthcare professionals, Olofsgard (2009) conducted an exploratory study looking at Swedish mental health professionals (N=529) use of physical activity as an intervention for mental health and disorders. Olofsgard used a cross-sectional survey to investigate the levels of Swedish mental health professionals' physical activity counseling, their use of counseling methods, as well as their attitudes toward and knowledge about this therapy. Results indicated that nearly all participants in her study (96%) used physical activity at least sometimes as an adjunctive therapy for the purpose of treating and preventing mental disorders. Physical activity counseling was found to be correlated with greater self-reported understanding of counseling methods, attitudes, and knowledge. Further, there were significant differences among the various professions with regard to key study variables including the frequency, behavior, attitudes, and knowledge of physical activity counseling. Olofsgard created a questionnaire assessing practitioners' use of physical activity in counseling as well as assessing for their attitudes, knowledge, and attitudes about the use of physical activity in mental health settings, which has been used or modified in several studies and was a precursor to the measure used in the current study.

In the United States, previous studies (Brinks & Franklin, 2011; McEntee & Halgin, 1996) have looked at psychologists' views and use of physical activity within therapy. Numerous limitations, including the methodology, recruitment of participants, and outdated nature of the existing research all suggest the need for an empirical study looking at the factors surrounding clinicians' use of exercise as an intervention.

Carlstedt (2010) summarized the research on mental health practitioners' use of exercise by stating that the percentage of practitioners who utilize exercise is largely

undetermined. Carlstedt suggested that better data needed to be obtained regarding the frequency of mental health practitioners incorporating physical activity within treatment. Carlstedt further concluded that due to the absence of valid information on the number of mental health professionals incorporating exercise within their treatment, an accurate understanding of the variables contributing to exercise promotion by mental health professionals has remained elusive. He speculated that once a clearer understanding of the factors contributing to exercise promotion by mental health care providers is established, better recommendations for how providers can incorporate this intervention within treatment may be established. An earlier book by Hays (1999), one of the leaders in the area of incorporation of exercise in therapy, suggested that the majority of mental health practitioners do not exercise or utilize exercise psychotherapy with their clients. Additionally, few mental health providers in previous studies indicated that they were comfortable using exercise as therapy or feel confident or comfortable engaging in exercise or walk talk therapy (Callaghan, 2004; McEntee & Halgin, 1996).

Barrow et al. (1987) conducted a survey with psychologists (N=262) listed in the National Register of Health Service Providers to explore the degree to which practicing psychologists were themselves involved in an exercise program and the effect that activity had on various dimensions of their psychotherapy practice. Dimensions of psychotherapy perceived as most positively affected by exercise were the physical stamina, mood, and mental stamina of the therapist (Barrow et al, 1987). Their results also revealed that patterns of exercise were related to demographic factors, including gender and theoretical orientation, with female providers and those ascribing to more directive therapies reporting more exercise behaviors. Although the study talked about

several demographic factors that related to injecting exercise into clinical work, there was no discussion of the factors that led to implementing this behavior in session. Most of the respondents in the Barrow study (71.43%) reported engaging in regular exercise. Most (79%) respondents also reported that they would recommend regular exercise both to other therapists and to patients. Subsequent research findings, however, called into question whether practitioners have translated this into practice (McEntee & Halgin, 1996). One researcher speculated that the use of "discuss" in the Barrow study, as opposed to "recommend" or "address" contributed to the high number of respondents who said they would incorporate exercise with clients. One of the most important findings of the Barrow (1987) study was that mental health practitioners who themselves exercised were more likely to recommend exercise to patients (92% to 59%). There were numerous methodological limitations to this study, including the sparse amount of information obtained from the clinicians surveyed. Additionally, the amount of time since this study was conducted and the substantial changes in psychology and the healthcare field over that time necessitate that these results be replicated and extended.

Following up on this observation that practitioners participating in exercise themselves are more likely to encourage their patients to engage in physical activity, previous studies revealed that 50% to 75% of mental health care providers report engaging in regular personal physical exercise (Barrow et al., 1987; McEntee & Halgin, 1996). As discussed previously, the self-report measure used to gain insight into exercise behavior may have contributed to these relatively high numbers, higher than the general population as a whole (34%, USDHHS, 2010). Although a large number of clinicians reported themselves exercising, research suggests the majority of therapists (71%)

indicate that they do not consistently recommend exercise to their clients (Burks & Keeley, 1989; Callaghan, 2004). Along with other healthcare providers, such as physicians, certified nurse midwives, and physician assistants, mental health care providers are more likely to report that they would recommend exercise if they themselves exercised (Royak-Schaler & Feldman, 1984). Therefore, most exercise recommendations seem to come from practitioners whose beliefs and practices are largely self-informed. However, when a practitioner prescribes or recommends a treatment such as exercise without the provision of either supervision or adequate guidance, patients tend not to follow through (Daley, 2008). Additionally, patients reported not being able to maintain a regular program of exercise over the long term, with dropout rates typically exceeding 50% within six months after initiating an exercise program (Dixon, Mauzey, & Hall, 2003).

As it relates to patients persisting with physical activity, mental health practitioners may stand to play a large role in increasing the number of people who are able to maintain this behavior over time. Jonas and Phillips (2012) suggested that the matter of mobilizing motivation for the patient is where mental health clinicians may play a significant role. The authors suggested that it is difficult for the average person to learn about the health promoting motivational processes and implement behavior change just from reading materials related to a particular behavior. For example, most people do not learn on their own about the importance of careful goal setting in personal health promotion (Jonas & Phillips, 2012). Some individuals can successfully implement behavior changes on their own; however, many more would likely be successful if they were able participate in the process of guided discovery that clinicians can provide. Even

just mentioning regular exercise in the course of a patient visit can have a beneficial effect in helping that patient adopt this new behavior (Jonas & Phillips, 2012). Although many challenges and barriers exist to making exercise a widespread intervention used by mental health practitioners, there have been some recent advances that suggest a bridging of the gap between theorists who suggest the efficacy of this intervention and its adoption in practice. Throughout the Covid pandemic of 2021-2023, the importance of physical activity for mental health was highlighted in a new way, necessitated by the inability of many to see a mental health professional in person or on a regular basis.

One persistent problem has been the relative lack of systematic exposure about the benefits of physical activity. Some important steps have been taken, however, in bringing exercise and physical activity closer to widespread clinical application in the domain of mental health. For instance, the latest (Third) edition of the *Practice Guideline For The Treatment of Patients With Major Depressive Disorder*, published by the American Psychiatric Association (Andersen & Shivakumar, 2013), states that for most individuals, exercise carries benefits for overall health. The publication further states that the potential benefits that can be accrued through physical activity are significant, while any negative side effects are negligible. Other publications have also made positive statements about the use of exercise for mental health concerns. For instance, an evidence-based national clinical guideline for the non-pharmaceutical management of depression in adults issued by Scottish Intercollegiate Guidelines Network (Logue, 2010) stated that "structured exercise may be considered as a treatment option for patients with depression" (p. 10). Likewise, the American College of Sports Medicine has been attempting to advance the incorporation of physical activity by healthcare providers

through the *Exercise is Medicine* initiative (Sallis, 2011). In other cases, although the evidence is compelling, the response from agencies with authority to issue clinical guidelines or recommendations has been tepid. Over the years, authors from various backgrounds have expressed puzzlement, even frustration that physical activity, despite its apparent strengths, is not being promoted more actively as a preventative or therapeutic intervention in the domain of public mental health (e.g., Callaghan, 2004; Donaghy, 2007; Faulkner & Taylor, 2009). For example, the widely cited Surgeon General's report (1999) commenting on mental health, the first and only of its kind, did not mention physical activity among the recognized methods of treatment for anxiety and depression, including only psychotherapy and pharmacotherapy, demonstrating an ambivalence about the effects of exercise on mental health (Ekkekakis, 2013).

To date there is only one empirical study that examined the level of awareness among professionals in psychology of the research literature on physical activity and mental health. Faulkner and Biddle (2001) conducted interviews with 21 directors of doctoral programs in clinical psychology in the United Kingdom. The interviews showed that physical activity was, for the most part, ignored in the clinical psychology curriculum. The authors attributed this phenomenon to a certain degree of disciplinary bias, fueled by "a continued adherence to a dualistic notion of mental illness and mental health" (Faulkner & Biddle, 2001, p. 442). What was most relevant to the present study was the finding that the program directors were unaware of research evidence supporting the positive role of physical activity on mental health. Faulkner and Biddle (2001) concluded that, "awareness of the exercise and mental health literature was extremely limited with most participants being unfamiliar with existing research" (p. 439). The

conclusion was based on statements by program directors, such as the following: “There is no evidence. Although you might find the odd paper says that exercise is effective here and there, as far as treating clinical problems, populations with psychological and psychiatric problems, to my knowledge there is no evidence” (Faulkner & Biddle, 2001, p. 439). Another program director wondered “we might want to ask the question, if there’s evidence for exercise, why is no one mentioning it?” (p. 439). Other respondents questioned the quality of the extant evidence but were unable to refer to specific problems because this concern was based on suspicion rather than actual first-hand knowledge. Although Faulkner and Biddle’s (2001) study was conducted more than 2 decades ago, current reviews of the literature suggest similar ignorance of the awareness about the literature. For example, that “the participants were unable to offer critical insight into the nature of existing research because they were unaware of its existence in the first place” (pp. 439 – 440; Ekkekakis, 2013). The degree to which lack of knowledge, attitudes that exercise is outside the purview of mental health clinicians, and the amount of training clinicians have in exercise promotion contribute to subsequent treatment decisions are not well known and will be a focus of the current study.

Despite the substantial research illustrating the positive effects of physical activity on mental health, there are few specific studies examining the role of exercise in psychotherapy; even fewer studies explore the factors associated with psychotherapists addressing physical activity with their clients (Germin, 2010). Germin conducted a study with self-identified psychotherapists (N=118) recruited through the Canadian Psychological Association (CPA) to examine the factors associated with psychotherapists addressing physical activity with their clients. The psychotherapists in the study were

asked directly about the likelihood they would address physical activity in their service delivery. Similar to previous studies (Barrow et al., 1987; McEntee & Halgin, 1996), Germin found that the majority (76%) of psychotherapists in her study would be inclined to address exercise with a hypothetical client described in a clinical vignette. Although Germin's findings suggest that 3 out of 4 mental health practitioners within the study would be likely to address physical activity with their clients, these numbers do not seem to match up with clients' reported experience of exercise actually being addressed with clinical health providers (Barnes, 2012).

A gap exists in the understanding and subsequent incorporation of physical activity within clinical work. The current study will attend to this gap in the literature by focusing on factors that may aid or hinder psychotherapists' implementation of exercise within the course of therapy. What follows are a number of potential factors that previous research has suggested may be likely to relate to the promotion of exercise by mental health professionals and delineate the specific questions that will be addressed in the current study.

Factors Potentially Influencing Mental Health Practitioners Use of Physical Activity as an Intervention

Despite an abundance of literature documenting the positive effects of physical activity, psychotherapists do not routinely assess clients' exercise habits or to recommend physical activity during therapy sessions (Burks & Taylor, 2004; McEntee & Halgin, 1996). The primary goal of the present study is to investigate the accuracy of this speculation and to explore possible factors that make therapists more or less likely to raise the issue of exercise with their clients. The research that currently exists only begins

to address issues of concern for practitioners, including the specific factors that may be related to the inclusion of physical activity within clinical settings. The absence of clear information on this topic suggests there is a need to examine how physical activity is best delivered to promote mental health, and how we can help guide practitioners in their decisions to consider physical activity as a treatment option.

Due to the strong empirical base for exercise therapy's ability to improve both physical and psychological health outcomes among a variety of populations, exercise appears to represent an efficacious treatment modality. However, given the dearth of empirical research focusing on clinicians' use of physical activity within therapy, future studies are warranted to evaluate factors that may contribute to implementation of exercise by clinicians (Dixon, Mauzey, & Hall, 2003). This study will examine relevant factors through the lens of a clinical-decision making model and the influence of clinician-related factors, client-based factors, and the impact of the environment when considering exercise as an intervention (Jacobs et al., 2012).

Some researchers in this field have speculated about significant barriers which may prevent psychologists from engaging in physical activity as an intervention. Faulkner and Taylor (2005) discussed several of the barriers clinicians are likely to face including a lack of confidence in their ability to utilize the intervention, a belief that exercise is not within their role, lack of reimbursement, not having a clear understanding of specific exercise prescription, and a belief that patients will not follow through with their recommendations. Previous research has also suggested that psychologists who are less physically active themselves are less likely to promote physical activity with their clients (McEntee & Halgin, 1996). Pasquariello (2013) examined another potential factor

that presents an obstacle for clinicians, the lack of training in exercise-related interventions provided in psychology graduate training programs. Although several proposed variables have been discussed as relating to the use of physical activity as an intervention, it is important to determine the factors that may influence psychologist's implementation of exercise within their psychological practice.

Clinicians' Exercise Behaviors

Previous studies have looked at the use of exercise prescription by clinicians based on their own exercise behaviors (Barrow et al., 1987; McEntee & Halgin, 1996). In their study, McEntee and Halgin (1996) surveyed 110 psychotherapists about their exercise behaviors, theoretical orientation, and use of exercise as an intervention with clients using self-report measures. One approach to understanding clinicians' use of exercise as an intervention was through the use of a vignette assessing the likelihood each clinician would be to use exercise with the proposed patient. McEntee and Halgin (1996) reported that those clinicians' who exercise themselves were more likely to prescribe exercise as an intervention with their clients. The study conducted by McEntee and Halgin exhibited several limitations, including the relatively rudimentary information about practitioners' exercise behaviors and practices. Additionally, the length of time since the study has been conducted, a growing interest in the area of integrated care amongst mental health practitioners since this study was conducted, and the changing zeitgeist around self-care for mental health professionals speak to the need for this investigation to be updated. These limitations warrant further research on how the exercise behaviors of clinicians impact the incorporation of exercise in treatment, which the current study aims to determine. It is proposed that those clinicians who themselves

engage in regular physical activity will be more likely to discuss physical activity with their patients than those who clinicians who exercise less frequently

Knowledge, Beliefs, and Attitudes Regarding Physical Activity as an Intervention

When attempting to understand the reasons more clinicians' don't use of physical activity to address mental health concerns, recent literature suggests that the reason is not the absence of evidence, but rather that practitioners lack knowledge about the research that exists discussing physical activity and mental health (Carlstedt, 2010). The schisms that exist between professional disciplines likely contribute to the idea that certain orientations do not view exercise within their purview (Ekkekakis, 2013). These potential factors relating to the use of physical activity as an intervention are viewed through the lens of a clinical decision-making model and are discussed further here.

One significant factor that authors have speculated as influencing mental health practitioners use of exercise as an intervention is the perceived gap between research and practice (Acevedo, 2012; Callaghan, 2004; Otto & Smits, 2009). Researchers working on the effects of physical activity on mental health have often expressed puzzlement, even frustration, that physical activity is not recognized or practiced more widely as a bona fide mental health intervention despite the mounting empirical support it has received. Attempts to probe the causes of this phenomenon have typically led to speculation about several contributing factors: first, a lack of awareness of the evidence and second, a hypercritical treatment of the evidence (e.g., Mead et al., 2009). By stating that it traditionally suffers from poor methodology and lack of RCT's, leading critics of the exercise and mental health connection have often doubted the findings, (Daley, 2008). In the past decade, however, scientific rigor of the research has increased such that research

findings are more robust with stronger evidence of validity (Acevedo, 2012; Ekkekakis, 2013).

An analysis of the current literature leaves questions about the knowledge and beliefs held by mental health professionals of exercise as an intervention (Carlstedt, 2010). Indeed, the US National Advisory Mental Health Council (1998) noted that more information is required to better understand the gap between research and practice. Understanding clinicians' knowledge of and beliefs about the efficacy of exercise is significant, as the acceptance and implementation of exercise by mental health practitioners may be based on the strength, knowledge, and accessibility of available evidence. For example, fairly recent mental health promotion policy documents (USDHHS, 1999) revealed a rather limited inclusion of the role of physical activity despite the fact that research has increasingly suggested physical activity as an effective intervention for mental health concerns. In an effort to explain the current landscape, the US Surgeon General's report on mental health (USDHHS, 1999) suggested that there are multiple and complex explanations for the gap between what is known through research and what is actually practiced, necessitating more information about how to minimize this gap. Several of the explanations offered by the Surgeon General Report revolved around the dissemination of research and the slow uptake of new interventions.

One possible explanation offered by Daley (2002) suggested that mental health practitioners may not have access to the existing research. Although this may have been true in the past, access to electronic data resources make this less of an obstacle (Ekkekakis, 2013). Others have suggested that methodological concerns still exist concerning the research on the mental health benefits of exercise, which make the

incorporation of physical activity as a mental health intervention premature (Dixon, Mauzey, & Hall, 2003). On the opposite end, other researchers have suggested that the accumulation of results and increased rigor of the literature related to exercise as an intervention for mental health speaks to its efficacy as an evidence-based intervention (Acevedo, 2012; Ekkekakis, 2013). Evidence-based practice is defined by its adherence as the "conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett et al., 1996, p. 71). Physical activity seems to fit this description as a safe, inexpensive, and demonstrably effective intervention for a wide range of mental health problems. As such, the current study aims to further explore the degree to which mental health practitioner's awareness of the literature and views about the efficacy of the literature impacts their likelihood of discussing physical activity within their service delivery. It is proposed that clinicians who more regularly use exercise with their patients will have a greater knowledge of the literature that exists discussing physical activity and mental health.

Theoretical orientation. Theoretical orientation has been discussed as one possible explanation for psychotherapists' tendencies to incorporate (or not) physical activity in therapy (Pasquariello, 2011). Results from previous studies looking at the relationship between theoretical orientation and use of exercise as an intervention have been mixed. In their study of 110 psychologists, McEntee and Halgin (1996) found that theoretical orientation, most notably those who self-identify as cognitive behavioral therapists, had a positive correlation with the inclusion of exercise in therapy. However, other previous findings are sparse and have been varied regarding whether theoretical orientation influences the likelihood a psychotherapist will discuss exercise with clients

(Barrow, et al., 1987; Germin, 2010; McEntee & Halgin, 1996). Barrow et al. indicated in their discussion that self-identified cognitive-behavioral and humanistic orientations tended to discuss exercise with clients more than those clinicians with self-identified psychoanalytic or psychodynamic orientations. McEntee and Halgin found no relationship between theoretical orientation and likelihood of addressing physical activity with their clients using a self-report forced choice question. This may be due to the way theoretical orientation was measured in each of the studies. Germin (2010), measuring several theoretical orientations on a continuum from "not at all" to "very," found that those who rated the cognitive-behavioral therapy orientation higher were more likely to discuss exercise with clients. The ability to rate theoretical orientation on a continuum offers a greater ability to offer more nuanced explanations of approaches to work with clients and will be used in the current study. Due to the unclear relationship between theoretical orientation and use of physical activity, the present study intends to generate a better picture of this relationship. It is proposed that those clinicians scoring higher on the cognitive-behavioral orientation will be more likely to address exercise with their patients than those from other orientations.

Attitudes about whether discussion of physical activity is within practitioner purview.

Another potential reason for the gap in clinicians using exercise in mental health settings is that implementation and discussion of physical activity interventions by mental health practitioners are quite different from the more traditional interventions commonly used in psychological treatments, where the client is more in control of the direction of the intervention (Stathopoulou et al., 2006). Historically, psychotherapy or counseling

has been less directive and more collaborative than the physical activity counseling that typically takes place in other locations. Further, mental health professionals may be unsure of how physical activity fits in with individual clients' own cultural values, beliefs, goals, and expectations of therapy (Stathopoulou et al., 2006). Jonas and Phillips (2012) also speculated that the more directive nature of addressing exercise with patients may prove to be a challenge for some health professionals. As such, the current study aims to further explore how mental health practitioners' views on the use of physical activity impact their incorporation of physical activity within treatment. It is hypothesized that those clinicians who use physical activity with their clients more frequently will have more positive attitudes about the use of physical activity as a mental health intervention.

Training and Education of Physical Activity in Mental Health Interventions

There is a perceived lack of training in physical activity counseling among mental health professionals (Dixon, Mauzey, & Hall, 2003). As such, some mental health clinicians may believe that discussing physical activity with their client is outside their scope of practice and clinical knowledge base (Jonas & Phillips, 2012). The lack of education and training for therapists in the area of linking exercise and mental health has been proposed as a significant barrier to the incorporation of exercise interventions in therapy (Pasquariello, 2011; Sallis, Patrick, et al., 2000). In a similar vein, previous research has also looked at the perceptions of training directors and the use of exercise by their students in training (Callaghan, 2004). Many of the training directors in the UK that were interviewed referenced a lack of or absence of an emphasis on the use of physical activity in training programs. One example highlighting the dearth of training related to the use of physical activity in counseling comes from the Council for Accreditation of

Counseling and Related Educational Programs' 2001 Standards (CACREP; 2001) which does not directly emphasize training for counselors in the specific domain of exercise psychology (Dixon, Mauzey, & Hall, 2003). As the research base regarding physical activity expands, it may become advisable for psychology training programs to include some training in exercise physiology, especially regarding the way that exercise and physical activity relate to mental health (Dixon, Mauzey, & Hall, 2003). As an alternative, some clinicians may obtain additional training about the use of physical activity in their clinical work through continuing education. Empirical evidence is needed to support the speculation that absence of training is a significant factor contributing to the decision to discuss physical activity with clients, and if substantiated, recommendations to training directors and others may be warranted. It is hypothesized that those clinicians with more training about the use of physical activity as a mental health intervention will be more likely to use physical activity with clients in practice. This piece fits squarely within the resources and practitioner expertise area of the Clinical Decision Making Model (Jacobs et al., 2012) that forms the structure of the current study.

Practical/Demographic Considerations in the Use of Physical Activity in Treatment (Barriers)

Another possible factor speculated to relate to the use of exercise as an intervention is that the application of physical activity in counseling and medical settings has not been met with large amounts of success (Lobelo, Duperly, & Frank, 2009). Lobelo et al. further speculated that there are a number of practical considerations that may influence clinician's decision whether or not to address physical activity with clients. Several of these considerations may be related to the fact that clients do not

follow through with recommendations, experience significant barriers, lack the time, or are not properly counseled on how to incorporate exercise as part of treatment. It is also possible that physical activity interventions, as currently construed, do not display as much real-life validity as research suggests (Dixon, Mauzey, & Hall, 2003). It is also possible that clinicians do not have sufficient efficacy about their ability to implement physical activity as an intervention, which is likely to limit their potential use of physical activity with clients (Pasquariello, 2011). Another consideration is that personal and environmental factors, such as access to facilities, socioeconomic status, and previous experience may impact the decision by clinicians to consider physical activity as an intervention.

There are also logistical barriers to physical activity counseling for practitioners, such as lack of time in session and lack of reimbursement (Lobelo et al., 2009). These logistical concerns will be examined in the current study to see what impact they have on clinicians decision to utilize (or not utilize) physical activity as part of their treatment. It is hypothesized that clinicians who anticipate more logistical barriers to implementing physical activity as an intervention will be less likely to address physical activity with their clients. Consistent with the clinical decision-making model discussed throughout this project, understanding barriers to the utilization of a particular treatment is vital to understanding the decision-making process. Although directly measuring barriers to the incorporation of exercise has been studied to some extent with the general population (Bird, Karageorghis & Hamer, 2021), less is understood about how these perceived barriers impact clinical care and decision-making for clinicians working with mental health treatment.

Demographics.

A number of demographic factors have also been postulated as also potentially relating to the frequency with which physical activity is utilized by mental health practitioners. For instance, McEntee and Halgin (1996) examined the roles of gender of the clinician, gender of the client, age of the clinician, clinical profession, and setting in which the clinician practiced. McEntee and Halgin reported that female clinicians were more likely overall (78%) to discuss exercise with their patients than male clinicians (62%). Additionally, they reported that male clinicians were more likely to discuss physical activity with male clients than with female clients, whereas females showed no gender differences. Speculation regarding this difference has been suggested to be due to societal norms surrounding males discussing physical health and activity with women. Another finding of McEntee and Halgin was that younger clinicians were more likely to themselves exercise and to use exercise as an intervention with their clients. Callaghan (2004) speculated that clinicians from certain settings, such as a clinician in a hospital, or those from particular professions, such as mental health nurses, would be more likely to incorporate exercise as an intervention. Given this speculation, the role of a number of demographic factors will be explored in the current study. No specific hypothesis will be made in regard to these factors.

Conclusion

The present study aims to examine the characteristics and experiences of mental health practitioners and to better delineate factors that influence the inclusion of physical activity as an intervention within practice. This study falls squarely within the guiding principles of Counseling Psychology. In accord with the clinical decision making model

(Jacobs et al., 2012), these proposed factors include clinicians' knowledge of the physical activity and mental health relationship, attitudes toward the use of physical activity in the prevention and treatment of psychological concerns, how often physical activity is addressed in counseling, how often clinicians are personally physically active, and the amount of training and continuing education practitioners have received regarding the use of physical activity in counseling. In attempting to better understand the factors that current mental health practitioners identify as relating to their use of and attitudes toward exercise as a mental health intervention, the proposed study aims to inform future decisions made about how to incorporate physical activity as a mental health intervention. In particular, this study will explore the factors that relate to the use of exercise as a potential treatment for mental health concerns, which is consistent with the strengths-based holistic approach endorsed by Counseling Psychology.

The current study proposed to investigate the absence or presence of a "gap" between research and practice among mental health practitioners through the lens of the clinical decision-making model. The aim of the current study was to better understand the relationship between mental health practitioner related factors and their association with how these professionals incorporate exercise within their clinical work. Results from the current study provide knowledge to better understand the factors contributing to mental health practitioners' use of physical activity as a mental health intervention. Additionally, results from this study provide a foundation from which proposed recommendations are made to facilitate the use of physical activity by mental health practitioners. Thus, the current study examined the following research questions and hypotheses:

Question 1: To what extent do clinicians utilize exercise as an intervention with clients and how do personal physical activity habits impact use of exercise as an intervention?

- Hypothesis 1: Clinicians who themselves engage in regular physical activity will be more likely to discuss physical activity with their patients than those clinicians who exercise less frequently.

Question 2: Are clinicians who ascribe to a cognitive-behavioral orientation more likely than those who are aligned with other theoretical orientations to discuss physical activity with their patients?

- Hypothesis 2: Clinicians scoring higher on the cognitive-behavioral orientation will be more likely to address exercise with their patients than those from other orientations.

Question 3: Is the relationship between clinician factors and clinicians' utilization of exercise with their clients explained primarily by clinicians personal physical activity?

- Hypothesis 3: Clinicians personal physical activity will explain the majority of variance in use of physical activity as an intervention above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention.

Question 4: Do factors related to clinician considerations predict use of physical activity as an intervention to a greater degree than client and setting variables?

- Hypothesis 4: Factors related to clinician considerations (demographics, attitudes, self-efficacy, theoretical orientation) will predict use of physical

activity as an intervention above and beyond that of client and setting variables.

CHAPTER III

METHODOLOGY

Participants

Three hundred and forty-nine respondents initiated the survey. After removing participants who did not meet inclusion criteria, or who evidenced an unacceptable amount of missing data, a total of 223 participants were included in the final sample (see Chapter IV for data cleaning and missing data procedures).

The sample ranged from 23 to 72 years of age (M = 39.95, SD = 8.72). The sample was fairly evenly distributed between genders, with the women in the sample slightly outnumbering the men. One hundred and eleven (49.8%) participants identified as female/women. One hundred and six (47.1%) participants identified as male/men. A total of one (0.5%) participant identified as nonbinary / third gender. Finally, five participants (2.2%) chose not identify their gender.

Participants were predominantly Caucasian/White (n = 123; 55.2%), with 46 (20.6%) participants identifying as Black/African American, 18 (8.1%) as Asian/Asian American, 16 (7.2%) as Latino/Hispanic, 4 (1.8%) as AMENA, 3 (1.3%) as Indigenous/Aboriginal, and 9 (4.0%) as Multiracial. Four participants (1.8%) did not select any of the above categories for racial identity and selected the option "rather not say."

Participants also provided demographic information regarding their highest degree obtained. Participants reported having a Ph.D (n = 58; 26.0%), Psy.D (n = 42;

18.8%), M.S.W. (*n* = 34; 15.2%), M.A. (*n* = 27; 12.1%), M.S. (*n* = 30; 13.5%), MFT (*n* = 15; 6.7%), Ed.D (*n* = 10; 4.5%), DSW (*n* = 2; 0.9%), M.Ed. (*n* = 5; 2.2%) degree. All participants affirmed that they were currently licensed as a mental health provider at the time of their participation in this study.

In response to current profession, respondents indicated Psychologist (*n* = 106; 47.5%), Licensed Professional Counselor (*n* = 59; 26.5%), Licensed Clinical Social Worker (*n* = 39; 17.5%), Licensed Marriage and Family Therapist (*n* = 7; 3.1%), Other (*n* = 12; 5.4%), with School Counselor (*n* = 4, 1.8%), Neuropsychologist, (*n* = 3, 1.3%), Art Therapist (*n* = 1, 0.4%), and Director of Behavioral Science in Family Medicine Residency program (*n* = 1, 0.4%) as listed under "Other".

When asked about their current setting of clinical practice, those surveyed reported Private Practice (*n* = 49; 22.0%), University Counseling Center (*n* = 55; 24.7%), Private Hospital (*n* = 32; 14.3%), VA Hospital (*n* = 38; 17.0%), Community Mental Health (*n* = 33; 14.8%), Other (*n* = 16, 7.2%), with "Other settings not being specified" within the demographics due to the uploaded study design not allowing the option to further identify a setting. This limitation is addressed in Chapter 5.

Participants stated that they saw between 2 and 45 clients or patients per week, with the average being 16.53 and the standard deviation being 10.51. In terms of how long they have been working with patients/clients, that is their number of years practicing, respondents reported having between one and forty-three years of experience (*M* = 8.90; *SD* = 7.83). The majority (79%) of respondents fell between 3 and 25 years practicing.

In addition, participants provided information about the amount of their current patient population they saw via telehealth, which was significantly impacted by Covid. Regarding the amount of clientele that respondents reported seeing via telehealth, responses ranged anywhere from none (0%) to all (100%), with the average being right around one-quarter of patients being seen via telehealth (M = 24.89; SD = 24.01)

With regard to the location of the participants who completed the survey, all lived within the United States and District of Columbia (DC), with the highest percentage of participants hailing from Ohio (n = 63, 28.3%), Texas (n = 27, 12.1%), California (n = 17, 7.6%) and New York (n = 10, 4.5%). In total, 39 of the 50 states and District of Columbia were represented in the survey.

Finally, participants reported demographic details about their subscription to various theoretical orientations, which they were asked to consider and could respond to multiple orientations. Participants' responses to these items reflect the degree to which they feel as if they practice from a particular orientation. As such, these data do not necessarily reflect an absolute degree of theoretical orientation but rather a relative one. Most participants reported having a approach most consistent with cognitive behavioral (M =3.68, SD = 1.06), constructivist or narrative/solution-focused (M = 3.42, SD = 1.08), family systems (M = 3.31, SD = 1.15), feminist (M = 2.75, SD = 1.19), humanistic/existential (M = 3.24, SD = 1.09), multicultural (M =3.30, SD = 1.01), psychoanalytic/psychodynamic (M = 2.90, SD = 1.20). All participants rated themselves on each of the scales listed here, and although they represent individual approaches, overlap between various approaches is likely due to how the orientations were measured.

Intercorrelations between the various theoretical orientations and other variables of interest are included in Table 3.

Procedure

Participants were treated ethically in accordance with the American Psychological Association Ethical principles of psychologists and code of conduct regarding data collection (APA, 2017). Institutional Review Board (IRB) approval was received from The University of Akron. In order to pursue this investigation, licensed mental health practitioners were recruited for this study via the internet. The literature supports the use of Internet samples in psychological research (Mathy, Schillace, Coleman, & Berquist, 2002). Participants eligible for this study were those over the age of 18 holding a license to provide mental health services in the United States and who were currently seeing patients/clients.

Participants were recruited from multiple sources in order to increase generalizability of findings. Professionals were recruited from a number of listservs including APA listservs for Division 12 (Society of Clinical Psychology), Division 17 (Society of Counseling Psychology), Division 29 (Psychotherapy), Division 38 (Health Psychology), Division 47 (Exercise and Sport Psychology), the Ohio Psychological Association (OPA), the APA Practice Organization (APAPO) and from Division 45 (Society for the Psychological Study of Culture, Ethnicity and Race). Participants from other mental health fields were recruited from similar listservs and professional databases including the website and listservs for the National Association of Social Workers (NASW) and the American Counseling Association (ACA). Additionally, emails were sent to identified college counseling centers through the Association for University and

College Counseling Center Directors (AUCCCD) and Veterans Affairs Hospitals via the Association of VA Psychologist Leaders (AVAPL) for inclusion in data collection. Finally, participants were recruited through both a local and national listserv from the United Way of Summit County. A thorough record was kept of each of the listservs, websites, and emails used in the collection of data for this survey and will be stored in records.

A standard script was used to recruit participants from the databases discussed here and can be found in Appendix A. Participants' age, gender, race, years of experience, theoretical orientation, exercise behaviors, and clinical practices were collected. Other relevant demographic information included highest degree achieved, current profession, state of residence, and current practice setting. A copy of all proposed measures may be found in the attached appendices.

The survey began with an informed consent page which described the purpose and procedures for the study, criteria for participant eligibility, risks and benefits associated with the study, length of time to complete the survey, a statement regarding privacy and confidentiality, IRB approval information, and the primary investigator's contact information. This informed consent page was followed by self-report measures for those who provided consent to participate. Participation was offered to participants online via the University of Akron's Qualtrics web- based survey service. Additionally, as an incentive for participation, participants were offered the opportunity to be entered into a raffle for one of four $50 gift cards. In order to maintain confidentiality, contact information collected for the purpose of this raffle was not linked to participants' responses. Following completion of the consent forms, participants were asked to

complete a demographic questionnaire and a series of measures related to their knowledge, attitudes, and beliefs regarding the use of exercise as a mental health intervention and finally information assessing their personal physical activity behaviors. All measures were completed online and anonymously via Qualtrics and personally identifying information was not collected.

Instruments

Demographic Questionnaire. Participants were asked to provide demographic information. The demographics questionnaire (see Appendix C) was developed from a combination of the demographic sections of surveys utilized by Olofsgard (2009), Hays (2010), and Pasquariello (2011). Included in the demographics questionnaire were questions regarding age, gender, ethnicity/race, and state of residence. Also included in the questionnaire was information related to current direct client contact, profession, number of years doing clinical work, theoretical orientation, and current setting of clinical work.

Exercise in Mental Illness Questionnaire-Health Professionals (EMIQ-HP). The Exercise in Mental Illness Questionnaire-Health Professional Version (EMIQ-HP), developed by Stanton, Happell, and Reaburn (2014), was used to investigate the knowledge, attitudes, beliefs and exercise behaviors of health professionals regarding the prescription of exercise for people with mental illness. This 68-item instrument is divided into six domains: exercise knowledge, exercise beliefs, exercise prescription behaviors, barriers to exercise, personal exercise habits and demographics. For the current study, the demographics section was not utilized as this study used a project specific demographic questionnaire. The EMIQ-HP draws items from previously validated questionnaires,

along with items specifically developed for this instrument. For the purpose of this questionnaire, the term ‘mental illness’ was replaced with the term ‘mental health condition” and is meant to mean any mental health condition including but not limited to depression, schizophrenia, bipolar disorders I and II, post-traumatic stress disorder, and anxiety disorders.

Content validation of the EMIQ-HP survey was achieved by expert consensus (Stanton, Happell, & Reaburn, 2014). The instrument was reviewed by a panel of five experts including clinicians and academics with significant experience in the development and delivery of exercise programs for people with mental illness, survey design and analysis, research methods and ethics. This approach enables incorporation of the views of both clinicians and researchers working in the field of mental illness in an effort to develop an instrument which captures all the relevant data and facilitates in-depth analysis using current knowledge regarding exercise and mental illness.

Test–retest reliability analysis of this survey resulted in internal consistency coefficient (ICC) values for all relevant items with Cronbach’s alpha ranging from 0.61 to 0.93. Based on classifications proposed by Landis and Koch (1977), the EMIQ-HP survey has Cronbach’s alpha ICC values which may interpreted as ‘moderate’ to ‘very good’ (0.61–0.93). Overall, the ICCs observed demonstrate good test–retest reliability for the EMIQ-HP.

Part 1. Exercise knowledge. This section contained 10 items. The authors adapted the exercise knowledge section specifically to address the knowledge of health practitioners regarding the benefits of exercise from the Australian Health Behavior Knowledge and Attitudes Questionnaire (AHKAQ) (Happell, Scott, et al., 2013). The

measure also included questions asking if the health professionals have had formal training in exercise prescription, where that training was undertaken, and their self-reported level of knowledge and confidence in prescribing exercise. Sample items include "How would you rate your knowledge of exercise prescription for people with a mental health condition?" and "People who undertake regular physical activity are less likely to develop depression than those who do not." Health professionals were then asked for responses to a series of level of agreement statements regarding the general health benefits of physical activity using a five-point Likert scale with anchors at 1 = 'Strongly disagree' to 5 = 'Strongly agree'. Scores range from 6 to 30, with higher scores indicate a higher level of agreement with statements about the beliefs of exercise being beneficial for mental health and overall wellbeing. Instrument reliability was determined using ICC values. For Part 1 (Exercise knowledge) of the EMIQ-HP, ICCs ranged from 0.95 to 1.00 with a sample of 126 participants (Stanton, Happell, & Reaburn, 2014).

Part 2. Exercise beliefs. Part 2 contained eight items. This section was developed specifically for this instrument through scanning the literature for strategies with demonstrated efficacy for the treatment of mental illness. This section was further developed with expert feedback. Question 11 asks health professionals to rank the value of these treatments (e.g. Medication, social skills training) compared to exercise using a five-point Likert scale with anchors at 1 = 'Significantly less than exercise' to 5 = 'Significantly better than exercise'. Questions 12–17 sought responses to level of agreement statements regarding their beliefs about exercise specifically for people with a mental illness using a five-point Likert scale with anchors at 1 = 'Strongly disagree' to 5 = 'Strongly agree'. An example of an item in this measure is "Exercise is valuable for

patients hospitalized with a mental health condition in the same manner as outpatients." These statements were based on reviews of the literature pertaining to exercise and mental illness. Scores range from 6 to 30, with higher scores indicating a higher level of agreement with belief in the utility of exercise as an intervention for mental health concerns. Finally, the last question of this part asked respondents to rank the importance of a range of treatments including exercise, for people with mental illness using numbered responses from 1 to 10. For level of agreement items on 12–17, the ICC for the mean item response was 0.70 (95% CI: 0.47–0.85). The final question in Part 2 was analyzed at item level with the ICC for each item showing strong test–retest reliability (ICC = 1.00) with a sample of thirty health practitioners in the United Kingdom from a variety of disciplines (Stanton, Happell, & Reaburn, 2014).

Part 3. Exercise prescription behaviors. This seven-item section used questions adapted from the Promotion of Physical Activity by Health Practitioners Survey (Grimstvedt et al., 2012). A number of versions of this survey have been used previously, however, no single version is specific to people with mental illness. For the purposes of this study, the Health Provider version was used, as this version is most specific to the target population of the current study. Question 19 screens for those who do not prescribe exercise for people with mental illness and as such, the response 'Other' has been added as an option for questions 21–25. A sample item in this section is "When you prescribe exercise to people with a mental health condition, how often do you recommend they exercise?". Scores range from 5 to 24, with higher scores indicating more consistent use of exercise as an intervention for mental health concerns. Reliability for items in Part 3 was analyzed at the item level. Results for frequency of exercise prescription, use of a

formal assessment and exercise program variables of frequency, intensity and duration of recommended were presented independently. Reliability of the item pertaining to the type of exercise recommended ranged between 0.61 (95% CI: 0.34–0.80) (team sports) and 1.00 (aerobic exercise). Reliability of the item pertaining to the methods used to prescribe exercise to people with mental illness ranged from 0.69 (95% CI: 0.45–0.84) (Referral to an exercise professional) to 1.00 (Personal discussion).

Part 4. Barriers to exercise. This section was specifically developed for the EMIQ-HP (Stanton, Happell, & Reaburn, 2014) and comprises 23 items divided into two subsections. Part 4, Section A asks respondents to rate their level of agreement with a series of statements regarding barriers to prescribing exercise to people with mental illness. Items for this section of the measure were developed by reviewing recent literature to identify barriers to prescribing exercise to people with mental illness (Happell, Platania-Phung, Scott, and Nankivell, 2013). The first subsection contains 11 items where participants are asked to respond on a five-point Likert scale with anchors at 1 = 'Strongly disagree' to 5 = 'Strongly agree', to statements regarding their perceptions about barriers to exercise prescription for people with a mental illness. Items within this subsection include those such as "Their mental health makes it impossible for them to participate in exercise." The second subsection contains 12 items regarding the barriers to exercise participation experienced by people with a mental illness which were identified from previous literature (Glover et al., 2013, Usher et al., 2007, Vancampfort et al., 2012). An example of an item in this subsection is "I lack the confidence to do any exercise." Participants are asked to respond on a five-point Likert scale with anchors at 1 = 'Strongly disagree' to 5 = 'Strongly agree', regarding their level of agreement with

statements about barriers to exercise previously identified by people with a mental illness. Section A responses were used for analyses in this study as they most directly relate to clinician behavior. Scores range from 11 to 55, with higher scores indicating more perceived barriers to exercise behavior and using exercise as an intervention.

It was analyzed using the mean response to the Likert scale response. The ICC for this section was 0.88 (95% CI: 0.76–0.94). Part 4, Section B, which asks respondents to rate their level of agreement with a series of statements regarding barriers to exercise participation reported by people with mental illness, was also analyzed using the mean response to the Likert scale response. The ICC for this section was 0.87 (95% CI: 0.74–0.93).

Part 5. Personal physical activity habits. This seven-item section comprises the self-administered version of the International Physical Activity Questionnaire – Short Form (IPAQ-SF)(Brown et al., 2004, Craig et al., 2003). This is a self-administered seven-day physical activity recall questionnaire. The International Physical Activity Questionnaire-Short Form (IPAQ-SF)(see Appendix C), developed by the IPAQ Research Committee (2005), was used to assess personal physical activity levels of each participant. The IPAQ was developed with the aim of determining self-reported levels of physical activity with populations' aged 18-69, which is consistent with the age range of participants in this study. Specifically, the short form of the IPAQ determines scale scores on walking, moderate-intensity, and vigorous-intensity activity, in addition to a total score for all physical activity.

The short form of the IPAQ has been used extensively in the literature and has established reliability and validity with acceptable levels of criterion-related validity (rho

= 0.3), test-retest reliability (intra-scale correlations range from 0.7-0.8) and moderate reliability for assessing total minutes of physical activity (intra-scale correlations 0.68) (Bauman et al., 2009). Prior to analyzing the data, the published IPAQ data cleaning steps were followed. Cases were removed from analysis where data are missing for time or days. For each participant, the number of days of exercise were multiplied by the reported duration (minutes per day) for each level of physical activity (walking, moderate, vigorous) and then converted to minutes by week (MET) by multiplying the total number of minutes by 3.3 (walking), 4.0 (moderate), and 8.0 (vigorous). The mental health practitioner's overall level of physical activity was obtained by summing the MET and resulting in a continuous variable of personal level of physical activity. The resulting scores ranged from 0 to 8000, with higher scores representing greater level of personal physical activity. While scores on the upper end are hypothetically infinite, scores above the chosen cutoff of 8000 did not seem to be feasible from established estimates.

Open-ended question. Regarding the open-ended question asked of participants, an optional prompt asked respondents if they had any additional comments they would like to share about the topic of exercise and mental health. This was presented as the final question of the survey and provided a free-response platform to express general thoughts on the topic being studied. With the sample in this study being varied and diverse, as well as the topic having many facets, this allowed participants to provide a more qualitative response that addressed exercise as an intervention that added depth to the topic being studied and potentially providing information about useful areas for future research.

Analytic Plan

In order to determine the minimum sample size needed for adequate power, the A Priori Sample Size Calculator from G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) was employed, using power = .80, alpha = .05, and anticipated effect size = 0.3 (using the convention for a medium effect size identified by Cohen, 1992; see MacCallum, Browne, & Sugawara, 1996). The minimum sample size needed for the regression analysis model (containing five variables comprised of 55 items) was 85 participants [see Figure 3]. Given that the multiple regression analysis required participants who report using exercise as a mental health intervention, as well as accounting for missing data, the total number of participants exceeded this estimate. The goal of recruiting 200 or more participants to ensure quality data analysis current research project was met.

Following completion of data collection, data cleaning was conducted and determination of eligibility was made based on participants' consent to participate and acknowledgement that they are currently licensed mental health practitioner in the US and have current direct client contact. Participation in this study was limited to individuals who meet the aforementioned criteria; Therefore, participants who do not meet these criteria were excluded from data analyses. Seventy-seven respondents were removed from the survey at this stage due to either not being a licensed mental health provider or not currently having direct client contact.

Participants who did not complete a minimum of 80% of one or more surveys were also removed from the data. Missing data were handled by examining the dataset in order to determine whether there are patterns among missing data, and Parent's (2013) recommendation was used for decisions about data imputation and analysis. Seventy-seven respondents were screened out of the survey because they did not identify

themselves as being a licensed mental health provider and having direct client contact (54 answered "no," 23 did not respond to this item) and two respondents were also screened out of the survey due to not identifying themselves as 18 years of age or older. In addition, recommendations from Tabachnick and Fidell (2007) were followed for conducting data screening for normality, univariate outliers, multivariate outliers, and multicollinearity. Calculation of z-score values was used to determine univariate outliers, and multivariate outliers were determined using Mahalanobis distance and chi-square analysis. Four remaining responses were removed from analysis due to exceeding acceptable levels for outlying data. Finally, tolerance and collinearity diagnostics were used to examine multicollinearity.

Prior to further analyses, categorical items from the demographic questionnaire including age, gender, race/ethnicity, current degree, and clinical setting were dummy coded in order to calculate bivariate correlations between exercise prescription behavior scores and the demographic variables. Demographic variables for which significant correlations are observed were controlled for in subsequent main analyses. All bivariate correlation analyses were completed using the SPSS statistical software package.

Question 1: To what extent do clinicians utilize exercise as an intervention with clients and how do personal physical activity habits impact use of exercise as an intervention?

- Hypothesis 1: Clinicians who themselves engage in regular physical activity will be more likely to discuss physical activity with their patients than those clinicians who exercise less frequently.
- Data Analysis Plan: To measure the hypothesis that clinicians who themselves engage in regular physical activity will be more likely to discuss physical activity

with their patients than those who clinicians who exercise less frequently, a Pearson-product correlation was obtained using scores on the Behaviors section of the EMIQ-HP and International Physical Activity Questionnaire-Short Form. The Behaviors section of the EMIQ-HP results in a continuous variable representing the frequency of exercise being used as an intervention by clinicians and the IPAQ yields a continuous score representing the amount of physical activity undertaken by a participant. A significant positive correlation was expected between the two variables.

Question 2: Are clinicians who ascribe to a cognitive-behavioral orientation more likely than those who are aligned with other theoretical orientations to discuss physical activity with their patients?

- Hypothesis 2: Clinicians scoring higher on the cognitive-behavioral orientation will be more likely to address exercise with their patients than those from other orientations.
- Data Analysis Plan: To measure the hypothesis that clinicians scoring higher on the cognitive/behavioral orientation will be more likely to address exercise with their patients than those from other orientations, Pearson-product correlations were obtained using scores on the Behaviors section of the EMIQ-HP and participants' scores on each of the theoretical orientations. The Behaviors section of the EMIQ-HP results in a continuous variable representing the frequency of exercise being used as an intervention by clinicians' and participants scores on the theoretical orientation measure will provide a Likert type score ranging from 1 to 5 for each of the theoretical orientations listed. A significant positive correlation

was expected for scores on the cognitive-behavioral and eclectic orientations as they relate to frequency in the use of exercise as an intervention.

Question 3: Is the relationship between clinician factors and clinicians' utilization of exercise with their clients explained primarily by clinicians personal physical activity?

- Hypothesis 3: Clinicians personal physical activity will explain the majority of variance in use of physical activity as an intervention above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention.
- Data Analysis Plan: To measure the hypothesis that clinicians' personal exercise will predict use of exercise as an intervention above and beyond what can be added by other variables in the study, a hierarchal regression was conducted to assess the total and unique variance of the relevant variables shown to relate to the use of physical activity as an intervention. Variables were input using the "Enter" method with personal physical activity loaded into block 1 and the remainder of the relevant variables in the study loaded into block two. The regression examined the amount of variance predicted by each of the criterion variables on use of exercise as an intervention. It was predicted that personal physical activity would predict the greatest amount of the variance in the use of physical activity as an intervention, above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention.

Question 4: Do factors related to clinician considerations predict use of physical activity as an intervention to a greater degree than client or setting variables?

- Hypothesis 4: Factors related to clinician considerations (demographics, attitudes, theoretical orientation) will predict use of physical activity as an intervention above and beyond that of client or setting variables.
- Data Analysis Plan: To measure the hypothesis that clinician considerations (demographics, attitudes, theoretical orientation) will predict use of physical activity as an intervention above and beyond that of client or setting variables, a hierarchal regression was conducted to assess the total and unique variance of the relevant clinician variables shown to relate to the use of physical activity as an intervention. Variables were input using the "Enter" method with clinician considerations loaded into block 1 and the remainder of client and setting variables in the study loaded into block two. The regression examined the amount of variance predicted by each of the criterion variables on use of exercise as an intervention. It was predicted that clinician related variables would predict exercise prescription above and beyond client and setting variables.
- **Open-ended question:** The final question of the survey asked respondents "Do you have any additional comments that you would like to share about the topic exercise and mental health?" The responses to this open-ended question were measured using a content analysis of responses. Based on a protocol identifying answers within a categorical framework, participant responses were divided into primarily positive, negative, and neutral or mixed feedback using a simple categorization by the primary researcher. The number of total respondents who added additional comments about further thoughts on this topic (N=47) represented 20.1% of the overall sample.

CHAPTER IV

RESULTS

Data Screening and Missing Data Procedures

Data cleaning was conducted for the dataset prior to analyses. Three hundred forty- nine respondents consented to participate in the survey; however, of these respondents, a number of individuals were screened out from the survey or from analyses due to not meeting inclusion criteria for the study. Seventy-seven respondents were screened out of the survey because they did not identify themselves as being a licensed mental health provider and having direct client contact (54 answered "no," 23 did not respond to this item) and two respondents were also screened out of the survey due to not identifying themselves as 18 years of age or older. After cleaning of the data, 270 respondents were left for data analysis.

Of the initial dataset of 270 eligible participants, 46 further participants were removed because they stopped the survey prematurely or did not complete at least two-thirds of one or more of the primary measures required for the hierarchical regression in hypotheses 3 and 4. A majority of these individuals discontinued the survey prior to questions regarding the use of exercise within clinical work or personal exercise experience, and so were not exposed to any of the scales. Lastly, one participants' response was considered to reflect compromised data because the respondent wrote a comment which was not related to any topic that was part of the current research and provided responses that appeared to be invalid (e.g. identified their age as "247"). A final

sample size of 223 participants remained. Means, minimums, and maximums for the primary measures were calculated, and the scores were found to fall within the expected range for each such measure.

The primary measure (Exercise in Mental Illness Questionnaire-Health Professional; EMIQ-HP) evidenced one or more univariate outliers (i.e. z = scores > 3.29), ranging from .45–.89% of responses on each item. One multivariate outlier (.45% of respondents) was observed in the dataset, as evidenced by Mahalanobis procedures. Following with Myers et al. (2013), outlier cases were not deleted or modified given the small percentage of univariate outliers and that no outliers were extreme in magnitude. Histograms were used to examine the shape of the distributions for major variables to assess for normality (Tabachnick & Fidell, 2007). The data appeared normal for all variables. In addition, statistics for skewness (-1.17 to .839) and kurtosis (-.852 to 1.327) for all variables were observed to fall within the range of -2 to +2 identified as acceptable by George & Mallery (2019).

A small number of participants also missed one or more items within measures in this study. On the Exercise in Mental Illness Questionnaire (EMIQ)—Beliefs subscale, twenty-nine out of 3,345 items (.87%) were not completed, while seventeen out of 1,463 items (1.16%) were missing for the Knowledge subscale of the EMIQ, thirty-four out of 2,508 items (1.36%) were missing for the EMIQ—Barriers subscale, and twenty-six out of 2,453 items (1.06%) were missing for the EMIQ—Exercise Participation subscale. Among participants included in analyses for Hypothesis 1 through 4, none were missing items on the EMIQ Behaviors subscale. Completion of Little's MCAR test using the remaining variables yielded a nonsignificant coefficient ($\chi 2 = 164.280$, $p = .731$),

consistent with the hypothesis that data were missing completely at random. The average percentage of missing responses per participant over all items in the primary measures was well below Parent's (2013) cutoff of 10% for using available item analyses. Given that no major complicating concerns (e.g. low sample size, poor reliability of scales) were present, data were analyzed following the simplest path as recommended by Parent, with all available responses for each item being used in analyses, and no missing values being imputed or other significant modifications being made to the dataset prior to further analyses.

Descriptive Statistics

Statistical information is provided for gender, age, Race/Ethnicity, amount of time working with clients, current practice setting, degree, profession, and current location. This information can be found in Table 1. Means of subscales, standard deviations, Cronbach's alpha scores for each primary measure, and proportion of responses are listed in Table 4 and provide information on the various demographic qualities of the current sample. Coefficient alpha scores for the measures ranged from .85 to .93 for the overall sample.

Looking at clinician knowledge using the EMIQ-Knowledge scale, potential scores on this measure range from 6 to 30, with higher scores indicating a higher level of agreement with statements about the beliefs of exercise being beneficial for mental health and overall wellbeing. Instrument reliability was determined using ICC values, with Part 1 (Exercise knowledge) of the EMIQ-HP calculated at 0.91. Observed scores on the EMIQ-Knowledge scale with the sample in this study ranged from 9 to 30 (M = 19.92, SD = 3.93).

Regarding beliefs about exercise using the EMIQ-Beliefs scale, potential scores on this measure range from 6 to 30, with higher scores indicating a higher level of agreement with belief in the utility of exercise as an intervention for mental health concerns. For level of agreement items on 12–17, the ICC for the mean item response was 0.86. Observed scores on the EMIQ- Beliefs scale with the sample in this study ranged from 11 to 29 (M = 19.09, SD = 3.17).

Assessing for how many clinicians use exercise as an intervention using the EMIQ-Behaviors scale, potential scores on this measure range from 5 to 24, with higher scores indicating more frequent use of exercise as an intervention for mental health concerns. For level of agreement items in Part 3 (Behaviors), the ICC for the mean item response was 0.87. Observed scores on the EMIQ-Behaviors scale with the sample in this study ranged from 5 to 22 (M = 11.92, SD = 3.01).

Looking at perceived barriers to using exercise as an intervention using the EMIQ-Barriers scale, potential scores on this measure range from 11 to 55, with higher scores indicating more perceived barriers to the use of exercise as an intervention for mental health concerns. For level of agreement items in Part 4 (Barriers), the ICC for the mean item response was 0.85. Observed scores on the EMIQ-Barriers scale with the sample in this study ranged from 15 to 54 (M = 32.33, SD = 7.59).

Assessing for how frequently clinicians exercise themselves using the short form of the IPAQ, for each participant, the number of days of exercise was multiplied by the reported duration (minutes per day) for each level of physical activity (walking, moderate, vigorous) and then converted to minutes by week (MET) by multiplying the total number of minutes by 3.3 (walking), 4.0 (moderate), and 8.0 (vigorous). The mental

health practitioner's overall level of physical activity was obtained by summing the MET and resulting in a continuous variable of personal level of physical activity. Potential scores on this measure range from 0 to 8000, with higher scores representing greater level of personal physical activity. For level of agreement items on this measure, the ICC for the mean item response was 0.93. Observed scores on the IPAQ-SF scale with the sample in this study ranged from 0 to 6194 (M = 1539.05, SD = 966.71).

Additionally, Table 3 presents Pearson correlations between the primary measures in the overall sample. In the overall sample, use of exercise as a mental health intervention was significantly positively correlated with both participants who indicated that they were in a hospital setting $r(223) = .18$, $p < .05$, and those who were seeing more patients or clients on average $r(223) = .27$, $p < .05$. Additionally, personal physical activity and likelihood to prescribe exercise were significantly positively correlated with one another $r(223) = .54$, $p < .01$.

The sample ranged from 23 to 72 years of age (M = 39.95, SD = 8.72). The sample was fairly evenly distributed between genders, with the women in the sample slightly outnumbering the men. One hundred and eleven (49.8%) participants identified as female/women. One hundred and six (47.1%) participants identified as male/men. A total of one (0.5%) participant identified as nonbinary / third gender. Finally, five participants (2.2%) chose not identify their gender.

Participants were predominantly Caucasian/White (n = 123; 55.2%), with 46 (20.6%) participants identifying as Black/African American, 18 (8.1%) as Asian/Asian American, 16 (7.2%) as Latino/Hispanic, 4 (1.8%) as AMENA, 3 (1.3%) as Indigenous/Aboriginal, and 9 (4.0%) as Multiracial. Four participants (1.8%) did not

select any of the above categories for racial identity and selected the option "rather not say."

Participants also provided demographic information regarding their highest degree obtained. Participants reported having a Ph.D (*n* = 58; 26.0%), Psy.D (*n* = 42; 18.8%), M.S.W. (*n* = 34; 15.2%), M.A. (*n* = 27; 12.1%), M.S. (*n* = 30; 13.5%), MFT (*n* = 15; 6.7%), Ed.D (*n* = 10; 4.5%), DSW (*n* = 2; 0.9%), M.Ed. (*n* = 5; 2.2%) degree. All participants affirmed that they were currently licensed as a mental health provider at the time of their participation in this study.

In response to current profession, respondents indicated Psychologist (*n* = 106; 47.5%), Licensed Professional Counselor (*n* = 59; 26.5%), Licensed Clinical Social Worker (*n* = 39; 17.5%), Licensed Marriage and Family Therapist (*n* = 7; 3.1%), Other (*n* = 12; 5.4%), with School Counselor (*n* = 4, 1.8%), Neuropsychologist, (*n* = 3, 1.3%), Art Therapist (*n* = 1, 0.4%), and Director of Behavioral Science in Family Medicine Residency program (*n* = 1, 0.4%) as listed under "Other".

When asked about their current setting of clinical practice, those surveyed reported Private Practice (*n* = 49; 22.0%), University Counseling Center (*n* = 55; 24.7%), Private Hospital (*n* = 32; 14.3%), VA Hospital (*n* = 38; 17.0%), Community Mental Health (*n* = 33; 14.8%), Other (*n* = 16, 7.2%), with "Other settings not being specified" within the demographics due to the uploaded study design not allowing the option to further identify a setting. This limitation is addressed in Chapter 5.

Participants stated that they saw between 2 and 45 clients or patients per week, with the average being 16.53 and the standard deviation being 10.51. In terms of how long they have been working with patients/clients, that is their number of years

practicing, respondents reported having between one and forty-three years of experience (M = 8.90; SD = 7.83). The majority (79%) of respondents fell between 3 and 25 years practicing.

In addition, participants provided information about the amount of their current patient population they saw via telehealth, which was significantly impacted by Covid. Regarding the amount of clientele that respondents reported seeing via telehealth, responses ranged anywhere from none (0%) to all (100%), with the average being right around one-quarter of patients being seen via telehealth (M = 24.89; SD = 24.01)

With regard to the location of the participants who completed the survey, all lived within the United States and District of Columbia (DC), with the highest percentage of participants hailing from Ohio (n = 63, 28.3%), Texas (n = 27, 12.1%), California (n = 17, 7.6%) and New York (n = 10, 4.5%). In total, 39 of the 50 states and District of Columbia were represented in the survey.

Finally, participants reported demographic details about their subscription to various theoretical orientations, which they were asked to consider and could respond to multiple orientations. Participants' responses to these items reflect the degree to which they feel as if they practice from a particular orientation. As such, these data do not necessarily reflect an absolute degree of theoretical orientation but rather a relative one. Most participants reported having a approach most consistent with cognitive behavioral (M = 3.68, SD = 1.06), with other respondents identifying as having an orientation consistent with constructivist or narrative/solution-focused (M = 3.42, SD = 1.08), family systems (M = 3.31, SD = 1.15), feminist (M = 2.75, SD = 1.19), humanistic/existential (M

= 3.24, *SD* = 1.09), multicultural (*M* = 3.30, *SD* = 1.01), psychoanalytic/psychodynamic (*M* = 2.90, *SD* = 1.20). All participants rated themselves on each of the scales listed here.

While use of exercise as a mental health intervention was observed to be significantly correlated with personal physical activity ($r = .19$, $p = .016$), consistent with expectations, a significant relationship was also observed between exercise as a mental health intervention and cognitive behavioral orientation ($r = .32$, $p = .014$) and hospital setting ($r = .26$, $p = .021$).

The final question of the survey asked for responses to an open-ended question about the topic being studied and was measured using a content analysis of responses. Based on a protocol identifying answers within a categorical framework, participant responses were divided into primarily positive, negative, and neutral or mixed feedback. The number of total respondents who added an additional comments about further thoughts on this topic ($n = 47$) represented 21.7% of the total sample. Of these 47 respondents, 20 (42.6%) mentioned the positive aspects of using exercise in therapy, 4 (8.5%) mentioned the negative aspects of using exercise in therapy, and 23 (48.9%) mentioned the neutral aspects of using exercise in therapy or those with other unsure feedback. These figures and a sample of responses can be found in Table 2.

Demographic Covariates

In addition to correlations among main variables, Pearson correlations for relationships between all demographic variables and the dependent variable (EMIQ-HP Behavior) were analyzed in order to identify potential covariates to be used in the main analyses for Hypotheses 1-4. Pearson correlation coefficients using the overall sample revealed three categorical demographic variables which were predictive of the scores for

exercise prescription behavior. Participants who indicated that they were in a hospital setting reported significantly higher exercise prescription behavior than participants in other settings (r = .24, p = .029), whereas participants who indicated that they were seeing more patients on average also reported slightly higher rates of exercise prescription behavior (r = .34, p = .011). In addition to these categorical variables, participants' age was also a significant predictor of the dependent variable. Higher age was associated with significantly lower prescription of exercise as a mental health intervention (r = -.19, p = .034). Associations between other demographic variables were not found to be statistically significant including gender (r = .12, p = .089), race (r = .10, p = .11), degree (r = .07, p = .21), type of mental health license (r = .06, p = .22). All demographic variables observed to associate significantly with the dependent variable were included as covariates in analyses using the corresponding sample or subsample.

Hypothesis Testing

A Pearson-product correlation was obtained using scores on the Behaviors section of the EMIQ-HP and International Physical Activity Questionnaire-Short Form to test Hypothesis 1, which postulated that clinicians who themselves engage in regular physical activity will be more likely to discuss physical activity with their patients than those who clinicians who exercise less frequently. The Behaviors section of the EMIQ-HP results in a continuous variable representing the frequency of exercise being used as an intervention by clinicians and the IPAQ yields a continuous score representing the amount of physical activity undertaken by a participant. A significant positive correlation is expected between the two variables.

To test Hypothesis 1, a Pearson product-moment correlation coefficient was computed to assess the relationship between EMIQ-HP and IPAQ among the 223 participants. The analysis revealed a positive correlation between exercise behaviors of clinicians and use of physical activity as an intervention, which was statistically significant $r(223) = .57$, $p < .05$, suggesting that those individuals who practiced physical activity more in their own personal lives were more likely to use exercise as an intervention in their clinical work. As predicted by Hypothesis 1, physical activity on the part of mental health clinicians was directly and positively associated with EMIQ-Behaviors.

Using Ferguson's (2009) criteria for small, moderate, and large effects, the observed association reflected a moderate effect size, consistent with Hypotheses 1 that those individuals who engaged in personal exercise were more likely to use exercise as an intervention with their clients. This moderate correlation indicates that further analysis is warranted looking at whether personal physical activity explains the variation in prescription of exercise above and beyond that of other relevant variables. Although this correlation narrowly meets the threshold for a moderate effect, the relationship demonstrated here indicates and confirms the approach of exploring the impact of this effect further.

A Pearson-product correlation was obtained using scores on the Behaviors section of the EMIQ-HP and participants' scores on each of the theoretical orientations to test Hypothesis 2, which postulated that clinicians scoring higher on the cognitive/behavioral orientation will be more likely to address exercise with their patients than those from other orientations. The Behaviors section of the EMIQ-HP results in a continuous

variable representing the frequency of exercise being used as an intervention by clinicians and participants scores on the theoretical orientation measure will provide a Likert type score ranging from 1 to 5 for each of the theoretical orientations listed. A significant positive correlation is expected for scores on the cognitive-behavioral and eclectic orientations as they relate to frequency in the use of exercise as an intervention. (cognitive behavioral, multicultural, one other significant)

The analysis revealed a positive correlation between the endorsement of a cognitive-behavioral orientation and use of physical activity as an intervention, which was statistically significant $r(223) = .32$, $p < .05$, suggesting that those individuals who subscribed to this orientation were more likely to use exercise as an intervention in their clinical work. Results indicated that identified theoretical orientation contributed significant variance to scores for EMIQ-Behaviors while controlling for demographic covariates (*Beta* = -.41, $p < .05$). As partially predicted by Hypothesis 2, identification with a cognitive-behavioral orientation by clinicians was directly associated with higher scores on the EMIQ-Behaviors scale. What was not anticipated, however, was that those clinicians who ascribed to a Solution-Focused orientation and Multicultural orientation also were positively correlated with higher scores on the EMIQ-Behaviors scale, and these were not significantly different than those ascribing to a cognitive-behavioral orientation. Although not anticipated based on literature reviewed for this study, Solution-Focused and Multicultural orientations seem to fit well theoretically with the use of exercise as an intervention. These approaches do differ in a significant way from other approaches listed in this study, and the potential reasons and implications for this are discussed further in the next chapter.

Again using Ferguson's (2009) criteria for small, moderate, and large effects, the observed association reflected a small effect size, mostly consistent with Hypotheses 2 that those individuals who practice from a cognitive-behavioral standpoint were more likely to use exercise as an intervention with their clients. This mild correlation, coupled with similar correlations from two other theoretical orientations, suggest that this is not the predictive factor we thought it may be and provide some information about exercise prescription behavior, but is by no means exhaustive.

Hypothesis 3 was analyzed with a hierarchical regression model to test if a clinician's personal physical activity would explain the majority of variance in use of physical activity as an intervention above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention. A hierarchal regression was conducted to assess the total and unique variance of the relevant variables shown to relate to the use of physical activity as an intervention. The assumptions of hierarchical regression, including linearity, normality, multicollinearity, and homoscedasticity, were tested and met. Variables were input using the "Enter" method with relevant demographic variables in the study loaded into Block 1 and personal physical activity loaded into Block two. The regression examined the amount of variance predicted by each of the criterion variables on use of exercise as an intervention. It was predicted that personal physical activity would predict the greatest amount of the variance, above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention.

Block 1 variables were practice setting, number of clients on a weekly basis, and how long the clinician had been working with clients. The analysis was performed in two

steps, with each step adding a different set of variables to investigate their incremental contribution to explaining the variance in the dependent variable.

The first step included entering practice setting, number of clients on a weekly basis, and how long the clinician had been working with clients. This model was statistically significant, $R^2 = .266$, $F(1, 223) = 6.71$, $p < .05$), explaining 26.6% of the variance in prescription of exercise behaviors. These variables were significantly associated with use of exercise as a mental health intervention (*Beta* = .36, $p < .01$)

In the second step, clinician exercise behavior, measured using the IPAQ, was entered. The addition of this variable significantly improved the model, $\Delta R^2 = .122$, $p < .05$, with an additional 12.2% of variance explained. Within this model, clinician exercise behavior, measured using the IPAQ showed a significant association with use of exercise as a mental health intervention (*Beta* = .45 $p < .01$), indicating personal physical activity of the clinician explains their use of exercise as an intervention above and beyond other significant variables in this study. The final model, including all predictors, was statistically significant, $\Delta R^2(1, 222)$, $p < .05$, accounting for 38.8% of the variance use of exercise as a mental health intervention. Although there were other significant variables that also correlated with use of exercise as an intervention, the personal physical activity of the clinician explained the variance of the behavior above and beyond that of those variables. This supports the hypothesis that physical activity would explain the majority of variance in use of physical activity as an intervention above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention.

Hypothesis 4 postulated a hierarchical regression model demonstrating that that clinician considerations (demographics, attitudes, theoretical orientation) will predict use

of physical activity as an intervention above and beyond that of client or setting variables. In order to test Hypothesis 4, a hierarchal regression was conducted to assess the total and unique variance of the relevant clinician variables shown to relate to the use of physical activity as an intervention. The assumptions of hierarchical regression, including linearity, normality, multicollinearity, and homoscedasticity, were tested and met. Variables were input using the "Enter" method with clinician considerations loaded into Block 1 and the remainder of client and setting variables in the study loaded into Block 2. The regression examined the amount of variance predicted by each of the criterion variables on use of exercise as an intervention. It is predicted that clinician related variables would explain exercise prescription above and beyond client and setting variables.

The hierarchical regression analysis was conducted to examine the effects of demographics, attitudes, and theoretical orientation on use of exercise as a mental health intervention, controlling for setting or client variables, measured using the EMIQ-HP Barriers subscale. The analysis was performed in two steps, with each step adding a different set of variables to investigate their incremental contribution to explaining the variance in the dependent variable.

The first step included entering the Block 1 variables of setting, client variables, measured using the EMIQ-HP Barriers subscale, and age. This model was statistically significant, $R^2 = .197$, $F(1, 223) = 10.48$, $p < .05$, explaining 19.7% of the variance in prescription of exercise behaviors. These variables were significantly associated with predicting the use of exercise as a mental health intervention ($Beta = .38$, $p < .05$).

In the second step, demographics, attitudes, and theoretical orientation were entered. The addition of these variables did not significantly improve the model, ΔR^2 (223) = .064, p = .13. Within this model, demographics, attitudes, and theoretical orientation did not show a more significant association with use of exercise as a mental health intervention (*Beta* = .18, p =.091), indicating demographics, attitudes, and theoretical orientation did not explain the use of exercise as an intervention above and beyond other significant variables in this study. The final model, including all predictors, was statistically significant, R^2 *(223)* = .261, $p < .05$, accounting for 26.1% of the variance use of exercise as a mental health intervention. Although several significant variables that contributed to the use of exercise as an intervention, demographics, attitudes, and theoretical orientation did not explain the use of exercise as an intervention above and beyond other significant variables in this study.

Open-ended responses

The amount of feedback (*n* = 47) gathered by participants about their overall views of exercise as a mental health intervention was an unexpected highlight of the current research study. The final question of the study asked for any additional thoughts or comments that people had about the use of physical activity as an intervention and the responses were detailed and educational. There were a multitude (*n* = 47) of interesting comments from the 223 respondents of the survey as they related to general thoughts on the use of exercise as a mental health intervention.

A sampling of responses demonstrated that clinicians use exercise as an intervention or an adjunct to another treatment in a variety of ways, some that are difficult to capture using a strictly quantitative approach. For instance, one mental health

clinician stated, “Small amount of clients in my side practice, but I am a big proponent of exercise and occasionally will go on a walk during session or encourage clients to enroll at a gym.” One setting-specific response reported by a respondent that reflected a positive view of exercise as an intervention reported that “ [they] love that the VA values exercise as another intervention we are able to use and incorporate with clients.” In one intriguing response which suggested a specific direction of support, one respondent noted, “I would like to see a lot of social support for exercise to improve mental health because the side effects of medication are terrible.”

On the other end of the spectrum, some individuals expressed concern and hesitancy when involving exercise as a part of therapy. One respondent, in registering their reluctance to use exercise as an intervention, reported that, “I think it's worth considering how rampant body dysmorphia and problematic eating is, and as such, how exercise interventions may be perceived.” Another participant expressed a concern along the same lines, indicating:

> I have some hesitation around the idea of prescribing exercise because of the ways that exercise has been fused with the idea of weight loss in people's minds. Considering the Health at Every Size movement, you can, of course, incorporate exercise at any time, and your weight does not determine your health. Although I want to be able to talk about physical activity with clients, I also want to be careful not to reinforce any toxic messages that they may have previously received about weight loss.

As can be ascertained from these and several additional comments left by participants, there is noticeable hesitation by at least some subset of clinicians to broach the idea of using physical activity within mental health care.

An additional perspective also emerged, from clinicians who expressed a desire to use exercise in some instances but feeling like they lacked the confidence or tools to do so. One clinician stated, "I think training in exercise for mental health is the largest hurdle in this being more formally implemented. I think if mental health professionals had a better understanding of how helpful it is and could confidently share it with our patients, we would use it more frequently." Similarly, another clinician posited that, "exercise needs to be included more frequently as part of training programs or in-services. There is certainly value to it, but I don't think enough professionals know how to use it effectively." One related response alluded to a view of exercise as an intervention, indicating "Exercise might be helpful, but I don't typically feel like it is a front-line intervention for me."

Regarding the open-ended question asked of participants, asking for additional thoughts on the topic of exercise and mental health, responses were categorized by the primary researcher based on the overall messaging of each of the responses. 20 of 47 responses were predominantly or solely positive. These seem to be primarily from people who are currently using exercise as an intervention on a regular basis. They discuss various ways that they have implemented exercise with their clients, including going on walks with clients during therapy sessions and also going to the shooting range.

23 of 47 responses fell in the neutral or mixed category. In the neutral category, the responses were primarily in two themes. One, people acknowledged that exercise

could be a beneficial treatment but did not feel as if they had sufficient training to use this with their clients. Secondly, a number of respondents indicated that they felt that exercise could have positive benefits for mental health and physical health, but either felt as if this was not in the purview of their role as a mental health professional, preferred to use other techniques, or did not see it as a front-line intervention.

4 of the 47 responses to the open-ended question fell into the negative category. The examples provided allude to the general feel of the respondents, primarily that they were concerned about the recommendation to exercise would be lumped in with negative or toxic messages clients had received about weight loss.

Summary of Results

In summary, after completion of data screening and missing data procedures, an overall sample of 223 participants were included in this study. Demographic covariates were identified and controlled for in subsequent analyses including setting, number of patients seen weekly, and age of the mental health professional.

Pearson-product correlations were used to test Hypotheses 1 and 2. Results indicated that physical activity on the part of the mental health clinician was significantly and positively correlated with scores for EMIQ-Behaviors. As predicted by Hypothesis 1, physical activity on the part of mental health clinicians was directly associated with EMIQ-Behaviors. For Hypothesis 2, a positive association between the endorsement of a cognitive-behavioral orientation and use of physical activity as an intervention was found, suggesting that those individuals who subscribed to this orientation were more likely to use exercise as an intervention in their clinical work.

For Hypothesis 3, a hierarchal regression was conducted to assess the total and unique variance of the relevant variables shown to relate to the use of physical activity as an intervention. Within this model, clinician exercise behavior, measured using the IPAQ significantly predicted use of exercise as a mental health intervention, indicating personal physical activity of the clinician explains their use of exercise as an intervention above and beyond other significant variables in this study. Although there were other significant variables that also predicted use of exercise as an intervention, the personal physical activity of the clinician explained the variance of the behavior above and beyond that of those variables.

In order to test Hypothesis 4, a hierarchal regression was conducted to assess the total and unique variance of the relevant clinician variables in the prediction of the use of physical activity as an intervention. Looking at the results of this model, demographics, attitudes, and theoretical orientation did not predict use of exercise as a mental health intervention more than client or setting variables, meaning the clinician variables studied did not explain the use of exercise as an intervention above and beyond other significant variables in this study.

CHAPTER V

DISCUSSION

The current study explored the use of exercise as an intervention with mental health clinicians to expand upon previous research by researchers including Pasquariello (2011) and Kleemann et al. (2020). Mental health practitioners have increasingly recognized the potential benefits of exercise for improving mental well-being, and the current study aimed to shed light on the various factors, challenges, and implications of incorporating exercise into mental health treatment strategies. This discussion section will synthesize these findings, address the implications of the research, and suggest future directions for this growing area of study and practice.

Consistent with previous research looking at the use of exercise prescription by mental health professionals, the mental health practitioners surveyed in this study demonstrated that personal use of physical activity was a leading predictor of whether professionals used exercise as an intervention in their clinical work with patients or clients. Among professionals who personally reported exercising at least three times a week, almost 3 out of 4 of these individuals (73.4%) also reported that they had used exercise as an intervention within their clinical work amongst patients.

Although there are unique results in the current research, there was significant overlap with the results found by Pasquariello (2013) asking health practitioners whether they exercise and use exercise as an intervention within their clinical work. Additionally, when looking at the frequency of exercise amongst the individuals who responded in this

survey and their use of physical activity as an intervention with patients, there is a strong correlation between how frequently clinicians exercise, how effective they view exercise for their own mental health, and their likelihood to use it with patients in a clinical context.

Consistent with the values of Counseling Psychology, investigating the use of physical activity as an intervention promotes an approach that sees clients as a 'whole person', furthering a holistic view of well-being and personal agency. Counseling Psychology is dedicated to facilitating personal and interpersonal functioning across the lifespan, which falls squarely in line with the current line of inquiry (Neville, 2023). This research is also in line with the values of promoting healthy psychological functioning and resilience beyond ameliorating pathology by using effective psychological interventions that attend to development, prevention, and health across the lifespan. In fact, Pasquariello (2013) discussed how psychologists are well positioned to provide physical activity counseling and may even have an ethical obligation to address physical activity with their clients.

The current study sought to extend findings that had been explored in various related fields and health professions, research conducted outside of the United States, and studies that peripherally discussed exercise in a different context than the current study. The aim of this research was to develop a more comprehensive understanding and begin to develop a model to help better understand the landscape of exercise prescription among mental health professionals and more thoroughly understand the various factors that lead to the use of exercise prescription within clinical work. This chapter explores these findings and their implications for the use of exercise as a mental health

intervention and how this may be used and talked about within clinical contexts. Finally, limitations of this research, implications, and future directions for research are discussed.

Descriptive Statistics

The sample for this study was more diverse and heterogeneous than previous studies, as variables such as race/ethnicity, geographic location, setting of clinical practice, and years practicing provided substantial diversity within the current sample. Additionally, mental health professionals from a variety of mental health professions were sampled as opposed to previous studies looking at a homogenous sample with regard to professional background. While previous research has looked at this area, the samples tend to be small, from clinical directors of training programs, limited samples of clinicians in Australia, and from professions best described as secondary mental health providers such as nursing (Germin, 2010; Olofsgard, 2009). The sample in the current study was also constituted of a higher percentage of male respondents than previous research and had significant variation and diversity in terms of age, setting of practice, race/ethnicity, and geographic location. Furthermore, the training of the individuals in this study demonstrated a significant amount of variation, as the participants represent those from a variety of fields such as psychology, counseling, and social work. The diversity of this sample along several dimensions is a strength of this study. As a whole, participants who completed the study represented a wide range of geographic, demographic, and clinical variability that allowed for a wide snapshot of exercise prescription across a range of different settings.

In the overall sample, significantly higher exercise prescription behavior was reported by those who were younger, those in a mental health setting at a hospital, and

those who were or higher on the cognitive behavioral orientation than those who were not. While interpreting these results, it is helpful to consider various factors that could contribute to these findings. For example, literature suggests there has been an increase in the promotion of multidisciplinary health behaviors over the course of the last decade that has filtered into a variety of different health professions and could help explain the correlation we see with those who have been practicing in the profession longer and those who are newer and thus were trained more recently (Ekkekais, 2013).

To what extent do clinicians utilize exercise as an intervention with clients and how do personal physical activity habits impact use of exercise as an intervention?

Hypothesis 1 predicted that clinicians who themselves engage in regular physical activity will be more likely to discuss physical activity with their patients than those clinicians who exercise less frequently, a finding which was supported in the current study. As suggested by previous research studies, whether an individual themselves engages in a behavior, in this case exercise, has a significant correlation as to whether or not they will advocate for that behavior in others, and in this particular context, whether they will use this as an intervention with their clinical work as well. Previous research (Gale, 2017) indicates that someone who engages in a behavior and finds utility in that behavior is more likely to encourage that behavior amongst others and potentially use it as an intervention to help others. In addition, a clinician who has engaged in a particular behavior themselves can speak to the pros and cons and nuances of a behavior to a much greater extent than someone who is advocating for a behavior they are unfamiliar with or one in which they have not practiced themselves. One more factor that could contribute to the use of exercise as an intervention is the idea that a

certain level of confidence seems to exist when one has found utility in a behavior and that could, therefore, contribute to that individual wanting to use that modality more in their practice with others.

Looking at the moderate correlation obtained in this study, exercise behavior on the part of the clinician has a significant impact on the use of exercise as an intervention within their clinical work. Despite clinicians having a fair understanding of the utility of exercise as an intervention in clinical work, there appears to be a gap with those who use it as an intervention and the personal practice of physical activity seems to explain some of this variance. While there are other contributing factors to the use of physical activity as an intervention, the "practice what you preach" mentality seems to be a strong factor relating to prescription of exercise behavior. In line with research done by Pasquariello (2013), these results indicate that individuals who participate in exercise in their own lives are more likely to use exercise as an intervention with their clients. Although previous data around this is sparse or done with non-clinician populations (Bhatia, 2011), the findings are consistent with research suggesting that exercise behavior corresponds with use of physical activity as an intervention.

Are clinicians who ascribe to a cognitive-behavioral orientation more likely than those who are aligned with other theoretical orientations to discuss physical activity with their patients?

Results for Hypothesis 2 were partially consistent with the prediction of a moderate positive relationship between clinicians scoring higher on the cognitive-behavioral orientation and the likelihood they would address exercise with their patients to a greater degree than those from other orientations. Numerous prior studies (e.g.,

Bernard et al., 2018; Gary et al., 2010) have reported that clinicians from a cognitive-behavioral therapy orientation are more accustomed to using homework and other directive interventions with their clients and would, therefore, naturally be more likely to use exercise with their clients as an extension of this approach.

While those practitioners who ascribe more strongly to a CBT orientation did demonstrate a positive correlation with the behavior of using exercise as an intervention, it appears that the orientation does not account for a majority of the variance of prescription of exercise behavior in practice. One thing that could be complicating this finding is the fact that clinicians were able to select multiple orientations as ones to which they adhere, allowing for there to be considerable overlap amongst what clinicians' report as their approach to work with clients. Due to the fact that respondents were asked to rate themselves on each of the orientations listed, there is a high likelihood that multiple approaches would be endorsed by a single respondent and therefore complicate the ability to isolate one particular approach. This confounding factor will be discussed further in the limitations section of this discussion.

While a cognitive-behavioral approach does seem to have some connection with those that use exercise as an intervention with their clients, it is not the only defining factor that is indicative of whether or not someone will necessarily subscribe to this intervention. The use of a holistic approach to treating a patient, which also shows up throughout the data in this study, is consistent with several other theoretical orientations. Additionally, the correlation with other theoretical orientations, while relative, alludes to the idea that various approaches to therapy can be consistent with the use of exercise as a

way to more firmly establish gains made throughout previous clinical work done with clients.

Gyani et al. (2014) discussed clinical orientation as it relates to the decision-making process in a clinical context and the impact on subsequent use of particular interventions. Consistent with the study reported by Germin (2010), these findings overlap with previous findings and suggestions as it relates to theoretical orientation and clinical approach to use of potential interventions. The consideration a clinician's theoretical orientation seems to have a relation to whether mental health professionals see exercise as something that falls within their purview, has utility, and should be used as a front-line intervention. The theoretical orientation of a clinician has an impact on the overall approach to interventions within clinical work, and as such it would make sense that it would have an impact on views of exercise as an intervention.

Is the relationship between clinician factors and clinicians' utilization of exercise with their clients explained primarily by clinicians' personal physical activity?

Hypothesis 3 yielded results that supported the assertion that clinician's personal physical activity will explain the majority of variance in use of physical activity as an intervention above and beyond that of other relevant variables shown to relate to the use of physical activity as an intervention. This further confirmed and extended the literature on exercise behaviors by replicating a mediation model first examined within the therapeutic relationship by McEntee and Halgin (1996). Based on this research, exercise behavior by an individual would be the most impactful aspect of their use of exercise as an intervention and would render the other variables of interest less relevant. While the impact here was not as great as anticipated, with just over 12% of explained variance, it

does seem to stand out amongst the variables mentioned as being the most important predictor of whether clinicians tend to use exercise with their clients. As mentioned in the background and literature review, there is reason to believe that behaviors one engages in become part of an identity and as such would be a strong predictive factor in behavior when there are multiple options, many of which could potentially be effective.

As it relates to exercise, although people who exercise find this helpful, they also ascribe to other approaches, which suggests they realize this is one tool in the arsenal when working in a clinical context. It seems plausible that other clinicians are also aware of this being a potentially effective tool, although they do not engage in the behavior themselves and, therefore, don't feel as confident in using it with clients and instead choose to use other interventions that fit with their approach more comfortably. While this hypothesis is supported, fully understanding the various underpinnings of this relationship will likely require additional investigation. Previous literature has indicated that personal behaviors are linked with preferences, and preferences are often linked with decision-making when multiple options are present (Gyani et al., 2014).

Additionally, training in a particular modality and self-selection of interventions amongst clinicians could also help explain some of this variation. By better understanding how these variables contribute to the use of exercise as an intervention, the current study helps provide a better understanding of what factors contribute to the decision to use exercise as a potential intervention with clients.

Do factors related to clinician considerations predict use of physical activity as an intervention to a greater degree than client and setting variables?

Hypothesis 4 predicted that factors related to clinician considerations (e.g., demographics, attitudes, theoretical orientation) would predict use of physical activity as an intervention above and beyond that of client or setting variables. While this surprisingly did not result in a finding that was predictive above and beyond other factors, valuable information was gleaned from the results obtained. For one, the way that the variables were measured could have contributed to this result and is discussed further in the limitations section. One possible explanation is that the cumulative effects of various client variables have an impact on whether clinicians use exercise that is not significantly greater than the clinician variables. In the current study, these variables contributed to a limited amount of explained variance (9.7%), which did not reach a level of statistical significance. The significant relationship between practicing in a hospital setting and use of exercise as an intervention seems to have explained enough of the variance in this behavior to keep clinician variables from explaining the use of exercise to a significantly greater degree. Perhaps clinicians working in a hospital setting have significant overlap with some of the clinician variables measured in this study, such as theoretical orientation and access to an exercise referral program, and as such these additional factors did not add significantly to our understanding of their exercise prescription behavior.

There is plenty of information in the data to warrant further exploration about what clinician variables might be the most powerful in helping to explain whether they use exercise in their practice with clients. Although the hypothesis tested here did not yield significant results, previous research has suggested that variables such as the gender of the clinician (Biddle, 2019) and attitudes about behavioral interventions within therapy

(Bernard et al., 2018) could impact clinical decision-making. There are a litany of other variables, such as the therapeutic alliance, the condition being treated, anticipated barriers that would be encountered by clients, and financial remuneration which were not measured here that could also feasibly have an impact on one's decision to use exercise as an intervention.

Taken together, these findings are consistent with the clinical decision-making model (Jacobs et al., 2012) highlighting the complexity of the decision-making process on when to use exercise as an intervention. Although finding accurate measures for each of the various parts of the decision-making model in this study was challenging, the results represent a complex decision-making process that sheds light on the intricacies of the many decisions clinicians make in their work with clients. Not using exercise as an intervention is not a repudiation of the effectiveness or utility in a clinical setting, but rather demonstrates that the ultimate decision of how to approach clinical work with clients remains a complex and personal decision. Various segments of this research study reveal helpful information about each of the components of clinical decision-making, including the environmental or organizational context, best available research evidence, resources present, and population characteristics. While not a definitive model regarding exercise prescription, this research moves us toward a further understanding of the various factors that may enter into the decision-making process and provides helpful information for further inquiry.

Open-ended responses

As discussed previously, the amount of feedback (n=47) and quality of information gathered by participants about their overall views of exercise as a mental

health intervention was an unexpected highlight of the current research study. The responses provided a qualitative aspect to the data that was collected and allowed respondents to provide more depth to their use of exercise as a mental health intervention. A sampling of responses demonstrated that clinicians use exercise as an intervention or an adjunct to another treatment in a variety of ways, some that are difficult to capture using a strictly quantitative approach. Examples of relevant responses obtained from participants in each of the categorical areas are provided within the results of this study and can also be found in Table 2.

While not the primary aim of the current research, these optional responses provided a more nuanced understanding of the views and behaviors of mental health professionals surveyed in this study. In line with research highlighted previously (Ekkekakis, 2013), the responses from most clinicians who responded to this prompt were positive, but revealed many questions about the use of exercise as an intervention and further highlighted the complexity of this topic as it relates to use by mental health professionals.

Considering the spectrum of responses to the additional open-ended question, one plausible takeaway is that a variety of approaches is positive, and that although it may be helpful for some clinicians to know about use of exercise as an intervention, it may not be needed for all clinicians. For those interested in receiving more training in the use of exercise as an intervention, a better understanding of the goals of exercise for the patient, a procedure for assuring a baseline level of health prior to exercise initiation, and specifics related to type, frequency, and options for exercise modalities were identified as potential areas of interest.

Implications for Use of Exercise in Psychotherapy

One key finding of the current study was the positive view and current use of exercise as an intervention amongst a segment of clinicians within this sample. The data obtained suggest that a sizable portion (73.4%) of this sample make use of exercise in their clinical work and report having positive interpretations of this work with clients, highlighting a higher frequency than in prior research. This number (73.4 %) exceeds the numbers reported in previous studies, including by McEntee and Halgin (1996) and Faulkner & Taylor (2009), which could be due in part to the way this behavior was assessed in the current study and is discussed in further detail later in this chapter.

The positive effects of exercise on mood regulation, stress reduction, and the reduction of symptoms associated with various mental health conditions have been well-documented in previous studies (e.g., Craft & Perna, 2004; Stubbs et al., 2017) and to varying degrees respondents in this study indicated being aware of this literature. As documented by Meltzer, Phillips, and Mitchell (2009), exercise has also consistently been shown to be a positive intervention for mental health concerns while concurrently having side effects that are almost entirely positive (e.g., better heart health, increased quality of sleep, more energy, and lower levels of overall stress). Although future research will continue to inform mental health practitioners moving forward, results from this study and other similar inquiries lay the foundation for an increased understanding of the factors surrounding the prescription of exercise by mental health practitioners and how this intervention is currently being used within clinical practice.

As evidenced by both the quantitative and open-ended responses, those in a hospital setting and those with a built-in referral program seem well situated to use

exercise as an intervention in their clinical work and have multiple avenues and support to do so. Mental health practitioners seem to benefit from coordination with fitness professionals, nutritionists, and other healthcare providers to develop holistic treatment plans that consider both physical and mental well-being. Consistent with previous research (Stonerock & Blumenthal, 2017), effective communication and collaboration are essential for achieving the best outcomes and exercise for mental health concerns appears to be an area where this holds true.

Reflecting the potential role of exercise as an adjunctive therapy, mental health clinicians may consider integrating exercise programs into their treatment plans to complement traditional therapies. This approach may prove particularly beneficial for individuals with mild to moderate mental health concerns or those looking to enhance the efficacy of existing treatments. When considering the potential reciprocal effects of talk therapy paired with a physical activity intervention, several studies have laid out the benefits of this approach (Stonerock & Blumenthal, 2017).

Many clinicians seem interested in using exercise as an intervention as highlighted by the responses of those who indicated having a desire for more training and information on the use of exercise in a clinical context. Additionally, several clinicians in the current study indicated that taking part in this research raised their level of interest in learning more about the use of exercise in clinical work and increased their desire to explore ways to potentially incorporate this as part of their treatment with clients.

Training

One of the primary takeaways from the mean scores on the beliefs and knowledge subscales and the expanded free responses collected at the end of the survey was the

desire or need for more training in the area of exercise as an intervention for mental health. Although not all respondents indicated a desire to use exercise in their work with clients, many clinicians expressed an interest in having the ability to discuss the benefits of exercise and to learn more about the pros and cons of this approach.

Training mental health professionals is imperative for effective use of exercise as an intervention and several clinicians qualitatively indicated that the lack of training was the biggest barrier preventing them from using exercise as an intervention. Numerous respondents also qualitatively reported in the study that they did not feel comfortable describing the benefits of exercise to clients even though they fully believed in them. The mean score on the Knowledge subscale, at 19.92, indicates a fairly low level of confidence in prescribing exercise as an intervention. Additionally, previous studies have indicated that clinicians will use interventions that they feel most comfortable with and which allow them to have the most success with their work (Gyani et al., 2014). With these factors in mind, making additional training opportunities available that allow mental health clinicians to gain more confidence in their use of exercise as an intervention seems warranted.

In looking at the open-ended responses provided by those in this study, a clear message emerges indicating that a lack of formal training within the education experience and a lack of opportunity for training post-graduation contribute significantly to the decision of whether clinicians use exercise with clients. Digging deeper into how training could impact the use of exercise amongst mental health professionals, it is informative to look at responses that allude to not having confidence in how to talk about exercises with clients, how to describe the benefits of exercise, and being unsure what kind of "dosage"

would be most beneficial for particular individuals. These responses highlight the complexity surrounding the use of exercise as an intervention and corresponds to the point made by several individuals in the study that they don't see exercise as being a front-line intervention for mental health providers.

Additionally, as there are a plethora of other mental health interventions that clinicians also feel like they could use additional training on and may fit more closely with their view of clinical work with clients, using resources on obtaining additional training on the use of this modality may seem cumbersome and not worthwhile. The time, energy, and other resources necessary to provide a solid base from which to use this intervention with a clinical population may be better used elsewhere for some clinicians. Opportunities for training in the use of exercise as an intervention may be tailored to those with the most expressed interest in order to increase the efficiency of this approach.

For the mental health clinicians interested in using exercise as an intervention with their clients, Counseling Psychologists with experience in using this modality seem to be a logical fit for providing training to mental health professionals. Otto and Smits (2009) provide one template for what this might look like in their manual *Exercise for Mood and Anxiety Disorders*, which provides guidance for integrating exercise-based interventions within mental health care. These authors suggest that mental health professionals with a strong clinical background and demonstrated competence in the use of exercise as an intervention would be ideally suited for providing training on various ways to incorporate exercise into their current treatment. Their manual uses a cognitive-behavioral model that provides options for activities and interventions that could be incorporated into an established therapy approach.

While few respondents in the survey reported seeing exercise in a negative light, the message from many respondents was that this did not rise to the level of being something they wanted or intended to use in their clinical work with patients. At the same time, while not part of their current treatment approach, several clinicians expressed a desire to have more training related to exercise as an intervention and indicated that they would use this more frequently if they possessed more knowledge and confidence on the use of this as an intervention. In discussing the safety and potential liability of recommending exercise, provision of training in regard to referrals and a better understanding of measures like the Physical Activity Readiness Questionnaire (PAR-Q) could be beneficial.

One alternative that seems to be mentioned on many occasions was the use of exercise as a preventative and adjunct treatment by other health professionals, as opposed to something that necessarily would be recommended, prescribed, or overseen by mental health clinicians. Taken together, these responses appear to point to the provision of additional training as a continuing education opportunity or employment-related training as potentially the most beneficial venue for this additional learning to occur.

Exercise Prescription as a Preventative Measure

Although not necessarily falling squarely into the category of exercise as a mental health intervention in a clinical context, an additional potential benefit of including physical exercise as part of mental health care lies in the area of cost containment (Ekkekakis, 2013). Mental health care costs have grown by 30% over the last 10 years, almost solely based on the costs of pharmaceutical prescriptions (Daley, 2008). Many of these costs have also been hypothesized to relate with the growing number of individuals

who lack physical activity and an increase in the treatment of mental health concerns (Faulkner & Taylor, 2009). Much of the discussion around the overhaul of healthcare revolves around finding ways to reduce overall healthcare costs and to find interventions that maximize the efficiency and effectiveness of treatment. In short, increased focus is being placed on finding cost-effective interventions that work. Using physical activity within the framework of a treatment plan could prove to be a cost-effective treatment or complement to treatment for a variety of concerns often presented to psychologists and other healthcare professionals (Otto & Smits, 2011).

From a public policy perspective, the American Psychological Association has stated that "regular physical activity is good for your body, reducing the risk that you'll develop high blood pressure, heart disease, colon cancer, or diabetes." Their statement continued noting that "exercise is also good for your mind. Regular activity can reduce stress, anxiety, and depression. Plus, staying active helps people maintain their strength, flexibility, and endurance as they age." Focusing on these areas with policy makers, through programs such as *Silver Sneakers,* could prove beneficial in helping promote reimbursement for exercise as an intervention.

Particularly in the context of the current opioid crisis present in the United States, which is in part attributable to prescription medication, perhaps another area highlighted is the need for advocacy of exercise as a first-line intervention prior to resorting to prescription psychotropic medication for the treatment of certain mental health conditions. While not a traditional mental health intervention as typically categorized, there seems to be more potential positive effects of exercise with relatively few negative side effects. There are also a lot of potential associations between the general health

benefits of exercise (gut health, blood flow to the brain, etc.) that could accrue to positively to impact overall health outcomes in addition to improved mental health outcomes.

Additionally, implementation of exercise as a measure for mental health prevention is an area that overlaps considerably with the mission and values of Counseling Psychology, including furthering a holistic view of well-being and a mission to create a more just and equitable world by promoting healing and thriving across all communities. As discussed by Fassinger (2018), finding interventions which help aid in prevention of mental health concerns and positively impact disadvantaged groups should be a focus, something exercise prescription has the potential to do. As discussed by the Office of Minority Health (Alviderez, 2019), reducing health disparities and increasing access to exercise for minoritized groups is an area where focus should be placed when considering public health (e.g. walking is free if you live in a safe area). In fact, it has been suggested that exercise could be viewed as a justice issue (Casey et al., 2020) and an issue that has the potential to provide positive benefit with little additional financial cost and potentially provide a preventative measure that also helps to address health disparities while having positive side effects as an added benefit.

Limitations

Although the present study adds significant understanding to the literature and contributes to our understanding of exercise and its use as a mental health intervention, it also has several limitations which need to be considered when interpreting the findings presented above. While the benefits of exercise as an intervention are promising, several challenges and considerations should be discussed.

One of the limitations of the current study was the design of the survey itself. Finding a measure that was suitable to use with this project was challenging, with no rigorous or widely used measure that had been empirically validated and having good psychometric qualities. The instrumentation used wasn't derived specifically from a clinical decision-making model and, therefore, may not have measured the variables with as much specificity and accuracy as would have been ideal. For instance, a measure specifically assessing for specific use of exercise within psychotherapy may have provided more rich information about how exercise prescription looks in a clinical setting and perhaps would more accurately reflect attitudes and behaviors of clinicians than the best available measure used in this research.

Another limitation within the study came from the language and ordering of items within the measures. The translating of the measure from various languages and the use of terms that were not consistent with nomenclature in the United States likely contributed to the awkward phrasing of some items. Per one respondent report, some of the information was difficult to understand because of the nature of how questions were worded. For example, a question on one section inquired about domains that patients or clients had identified as barriers to exercising and asked participants to respond to how much they agreed with those statements. While this was not apparent in initial readings of the measure, feedback from clinicians who participated in this study suggested that this made the wording come across as confusing.

Considering the measurement of physical activity amongst respondents to this survey, another limitation was that the IPAQ emphasizes intensity of exercise to a greater degree than casual physical activity and therefore results in those individuals who

participate in vigorous exercise scoring significantly higher on this measure. Additionally, participants were not asked about the goals of their exercise behavior, which did not allow for analysis of health versus performance related motivation for physical activity.

Also, the ordering of questions raised some concern when analyzing the data. On the question asking about individuals having current client contact, the response "no" was listed prior to "yes", which was confusing. As a result, there were a surprising amount (*n* = 77) of surveys that ended at that point in the survey. Feedback from participants indicated that it was problematic and should have had "yes" as the first option as opposed to at the bottom as the second option, as it would be assumed that most individuals who read the introduction to the study and then proceeded had met inclusion criteria.

Additionally, the original primary instrument (EMIQ-HP) used in this study referenced the term "mental illness" frequently throughout the survey, which was modified prior to data collection to "mental health condition" to more accurately reflect the terminology and views of the population being studied. This likely had minimal impact on the responses for these measures, but is worth noting. Finally, the rank-order of different types of treatment for depression, hospitalization, and exercise were placed at the end of their respective lists and not randomized, which potentially caused them to be chosen less frequently than others.

Participants were asked to rate their subscription to multiple theoretical orientations, all of which could be selected, which made filling out the survey and the subsequent data analysis cumbersome as it gave a relative measurement as opposed to an absolute one. Also, within the current setting of practice, the questionnaire forced people

to select into categories that did not necessarily capture all the information related to their place of practice and the work they were doing in a variety of settings. Thus, these shortcomings introduced error to the measurement of the variables of interest.

Finally, the data collected in this study, the measures present in previous research, and the nature of the research questions within this study did not lend themselves to a more complex and rigorous data analysis, which provides less depth of information about the ways in which the multiple variables studied here potentially influence and relate with one another in a comprehensive model. Although the results obtained through this research provided useful insights, a better measurement of the totality of the variables of interest would provide a more thorough understanding of this wide-ranging topic.

Threats to External Validity

With regard to the methods used to collect data, using a purely online sample presents challenges to the generalizability of the findings, namely the possibility of self-selection of those with more technical savvy, interest in the topic, access to technology, or of a younger cohort. This data collection method also likely attracted more individuals who were part of academic listservs and those who were involved with solicited groups. While the surveys were distributed widely, the use of a VA listserv and Counseling Center listservs as part of the data collection likely made it more likely to obtain data from this group of clinicians.

Although the responses to this survey represent a geographically diverse sample, there is a potential that factors unique to geography could impact the overall use of exercise as an intervention. During the summer period when data was collected, most clinicians in the survey would have had access to multiple easily-accessible outdoor

avenues to exercise, which for some may not be present all year round. As such, there is a chance that a recency bias exists, with clinicians reporting use of exercise more frequently than they would at other points in time.

The collection of data from many specialties and backgrounds within mental health clinicians provided a wide scope of responses. Collecting data from a wide variety of different backgrounds, however, makes it difficult to make blanket suggestions in regard to training for instance. Multiple variables, including length of training, reimbursement, and clinical philosophy provide variation in the approach to work with clients and patients and, therefore, make recommendations difficult.

A final limitation of the current study was that no information was gathered about the age of clients that clinicians typically see or would be most likely to use exercise with as an intervention. The survey also didn't allow for practitioners to discuss other settings in depth, where exercise and mental health potentially may have been more readily paired together (e.g., gym, yoga studio). In general, there were not enough questions to describe the clinical setting of the mental health professional to gain a full understanding of the impact of the clinical setting on the use of this intervention and how it affects overall behavior. However, the diversity of the sample in terms of age, race, amount of clinical experience, current profession, and geographic location strengthens the finding of this study.

In conclusion, while the benefits of exercise as a mental health intervention seem to be promising, these limitations highlight the need for further research. Future studies should aim to address these challenges by addressing some of the gaps in the current research base as identified here.

Future Directions

The present study suggests several avenues by which future research may investigate the use of exercise as an intervention by clinicians and gain a more thorough understanding of the factors which impact the behaviors of clinicians in using exercise as an intervention within their mental health practice. The findings of the current study highlight the potential of exercise as an intervention in mental health care and provide insight into many of the variables surrounding this, but further research is needed to fully understand its mechanisms and nuances.

A number of methodological considerations related to the limitations discussed above provide opportunities for future research. Biddle (2016) suggests consideration of a control group study using various modalities and different methods to see how clinicians compare the work they are doing and the subsequent results. Also, looking at the intentional use of exercise and manipulating variables, such as the reimbursement of exercise, could be a fruitful area of study. Previous research (Pratt, 2016) has indicated reimbursement as a barrier to using exercise as an intervention, so exploring this aspect more thoroughly could help understand the landscape under which clinicians are currently operating.

Additionally, research should continue to focus on developing evidence-based guidelines and protocols for mental health practitioners. These guidelines can help practitioners tailor exercise interventions to individual needs while ensuring safety and maintaining ethical standards. Future studies could explore the optimal types (yoga, group, individual), duration, and intensity of exercise for various mental health conditions. Additionally, investigating the long-term effects of exercise on mental well-

being and the potential for relapse prevention is essential (Furzer et al., 2021). Along with this, future researchers should investigate the underlying mechanisms through which exercise influences mental health, including neurobiological, hormonal, and immunological pathways (Smith & Merwin, 2021). Identifying biomarkers associated with mental health improvements could contribute to a more precise understanding of the physiological effects of exercise. In line with this, studies could examine the potential synergies between exercise and other therapeutic modalities, such as psychotherapy, mindfulness-based interventions, or other Empirically Supported Treatments. Combining approaches may lead to enhanced mental health outcomes for certain populations. One example of this approach is the use of Trauma Sensitive Yoga (TSY) for treatment of PTSD in combination with cognitive-behavioral therapy (West, Liang, & Spinazzola, 2017).

Training mental health professionals is a significant area that needs to be addressed as a future direction of inquiry. In part, this will help determine whether increased facilitation of exercise prescription is a necessary and worthwhile goal. One area highlighted by individuals in this study was not feeling as if there was sufficient training to allow them to use exercise confidently within their clinical work. While decision-making is multifaceted, understanding how training can be implemented and the impact that this would have on the use of exercise as a mental health intervention amongst clinicians is warranted. Also, more collaboration with resources that have been developed for the use of exercise as an intervention should be incorporated into clinical practice. One way to potentially achieve this is to explore the effectiveness of technology-assisted exercise interventions, such as virtual reality, mobile apps, and

wearable devices. These technologies could enhance adherence, engagement, and monitoring of physical activity, providing new avenues for mental health support.

Another focus of future studies could be to expand research to include more diverse populations, such as older adults, individuals with chronic health conditions, and those with severe mental illnesses. Understanding the impact of exercise across various demographic groups would contribute to more inclusive mental health interventions. To further this line of inquiry, it would be helpful to further investigate the effectiveness of community-based exercise programs in promoting mental health and expand these opportunities. Examples of community-based exercise programs include GirlTrek (a Black women's walking group geared toward overall health and healing), Pink Gloves Boxing (a women's boxing group promoting friendship, teamwork, and positive attitude), and Healing through Hockey (an initiative for Veterans with PTSD to stay active and build community engagement) amongst others. Such interventions could provide social support, reduce isolation, and contribute to sustainable lifestyle changes. Encouraging individuals to adhere to prescribed exercise interventions can be challenging. Issues such as motivation, time constraints, and physical limitations may impact a person's ability to consistently engage in physical activity. Study populations are often limited to specific demographics, such as young, healthy adults. The generalizability of findings to diverse populations, including older adults, individuals with chronic illnesses, or those with severe mental health conditions, may be limited. This research could also involve examining how cultural factors influence the relationship between exercise and mental health. Culturally sensitive interventions may be more effective in promoting mental well-being in diverse populations.

Additionally, adherence to exercise routines can be difficult for some individuals, especially those struggling with severe mental health conditions. Factors such as motivation, access to facilities, and physical limitations can hinder participation in regular exercise. Barriers may prevent people from engaging in exercise even if they express a desire to do so. Mental health practitioners should be prepared to provide tailored support to address these barriers and ensure that exercise interventions are accessible and sustainable for their clients. It would be beneficial to gather information about the perception of clients about barriers to the use of exercise as an intervention and how this might relate with concerns about body image and eating disorders. Specifically, individuals from lower SES categories have been more likely to experience barriers to exercise and as such may be less likely to reap the benefits of this particular intervention.

When considering ways to implement exercise as a mental health intervention for the most benefit, it may make sense to further the implementation of psychological research foundations within technology applications (e. g. Apple Watch, Orange Theory Fitness, Noom, Peloton). Previous research (Stonerock & Blumenthal, 2017) has suggested that numerous opportunities exist to further buttress work done in therapy and use of exercise as an intervention falls squarely in line with this endeavor. Additionally, mastery of a goal has been shown to increase endorphins and overall self-efficacy, which could be accomplished through the pairing of clinical exercise intervention to further positive mental health outcomes.

One final future area of study is assessing the validity of exercise as a preventive mental health intervention. This could possibly provide an opportunity to expand potential career options for counselors or psychologists. Division 47 (Sport and Exercise

Psychology) of APA has an exercise section dedicated to this area of study but does not frequently collaborate with clinical psychology. Finally, researchers can investigate the impact of policies that promote physical activity at the community and societal levels. Advocacy for incorporating physical activity into public health initiatives can contribute to mental health promotion on a larger scale. Ensuring access to community-based interventions is critical for development safe exercise spaces and support for outdoor activities for all. In conjunction, conducting economic evaluations to assess the cost-effectiveness of exercise interventions for mental health and understanding the economic implications could inform healthcare resource allocation and policy decisions.

Continued research in these directions, along with addressing current limitations, will contribute to a more nuanced and evidence-based understanding of the role of exercise in mental health. This knowledge can inform the development of effective interventions and public health strategies to promote mental well-being across diverse populations (e.g. NFL Play60, Michelle Obama's Let's Move! initiative). Finally, efforts should be made to increase public awareness about the benefits of exercise for mental health. Promoting physical activity as a means of improving mental well-being could reduce stigma surrounding mental health and encourage more individuals to seek help and engage in healthier lifestyles (Malcolm et al., 2013).

Conclusion

Exercise as an intervention in mental health care holds great promise, with this research contributing to the growing body of evidence supporting its utility. Mental health practitioners can play a pivotal role in integrating exercise into treatment plans, provided they address challenges, uphold ethical standards, and engage in a collaborative,

multidisciplinary approach. As research continues to explore this area of study, there is substantial opportunity to uncover more effective ways to enhance mental well-being and improve the lives of individuals facing mental health challenges.

The current study contributes several findings which extend our understanding of the use of exercise as an intervention by mental health practitioners. In the current study, the majority of clinicians reported using exercise with clients, indicating that the use of exercise as an intervention is perhaps more frequently used than was originally thought. It is also possible that greater emphasis on collaborative care and an increased focus on the promotion of health strategies could be captured by the current findings.

Exercise can be used as a complementary treatment alongside traditional therapeutic interventions or medications. Incorporating exercise into mental health care can contribute to both preventing mental health issues and increasing overall well-being. Adopting exercise as an intervention aligns with a holistic approach to mental health care, considering the interconnectedness of physical and mental well-being. A holistic approach may address the root causes of mental health issues, rather than merely treating symptoms. Exercise interventions can be adapted to suit various individuals, considering factors such as age, fitness level, and personal preferences. Inclusive approaches, such as group activities or community-based programs, can provide additional social support. Encouraging exercise as part of mental health treatment may also promote long-term lifestyle changes that extend beyond the duration of therapy and contribute to sustained mental well-being. In this study, a diverse group of clinicians were influenced by their own exercise behaviors and theoretical orientation in deciding whether to use exercise as an intervention.

In summary, the implications of mental health professionals using exercise as an intervention are vast and can contribute to a more comprehensive and effective approach to mental health care. As research in this area continues to grow, incorporating physical activity into treatment plans may become more commonplace and integral to promoting overall well-being. While the current study adds additional information to the landscape surrounding exercise and its use for mental health concerns, there is much yet to be uncovered. By studying exercise as an intervention and better understanding the complexities of this clinical decision-making process, research may further illuminate the factors involved and ultimately contribute to enhancing well-being.

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APPENDICES

APPENDIX A

DEMOGRAPHIC AND ANALYSIS TABLES

Table 1. *Demographics*

Variable	n=223	Mean/Std Dev	%
Gender	**223**		
Male	106		47.53%
Female	111		49.78%
Non binary / third gender	1		0.45%
Prefer Not to Say	5		2.24%
Age	**223**	**39.95 (9.03)**	**100.00%**
Race/Ethnicity	**223**		
AMENA	4		1.79%
Asian/Pacific Islander	18		8.07%
Black/African American	46		20.63%
Caucasian/White	123		55.16%
Hispanic	10		4.48%
Indigenous or Aboriginal	3		1.35%
Latino/Hispanic	6		2.69%
Multiracial	9		4.04%
Would Rather Not Say	4		1.79%
Clients/week	**223**	**16.48 (10.51)**	**100.00%**
How long practicing	**223**	**9.05 (8.14)**	**100.00%**
Prescribe exercise (any level)	**164**	**2.16 (0.93)**	**73.4%**
Highest Degree	**223**		
Master of Arts (MA)	27		12.11%
Master of Science (MS)	30		13.45%
Master of Family Therapy (MFT)	15		6.73%
Master of Social Work (MSW)	34		15.25%

Doctor of Philosophy (Ph.D.)	42		18.83%
Doctor of Psychology (Psy.D.)	58		26.01%
Doctor of Education (Ed.D.)	10		4.48%
Doctor of Social Work (DSW)	2		0.90%
Other/Not Listed	5		2.24%

Variable	**n=223**	**Mean/Std Dev**	**%**
Current Profession	**223**		**100.00%**
Licensed Psychologist	106		47.53%
Licensed Professional Counselor	59		26.46%
Licensed Clinical Social Worker	39		17.49%
Licensed Marriage/Family Therapist	7		3.14%
Other/Not Listed	12		5.38%
Practice Setting	**223**		
Private Practice	49		21.97%
University Counseling Center	55		24.66%
Private Hospital	32		14.35%
VA Hospital	38		17.04%
Community Mental Health	33		14.80%
Other	16		7.17%
Theoretical Orientation	**223**		**100.00%**
Cognitive/Behavioral	223	3.68 (1.06)	
Constructivist/Narrative/Solutions	223	3.42 (1.07)	
Family Systems	223	3.31 (1.15)	
Feminist	223	2.75 (1.19)	
Humanistic/Existential	223	3.24 (1.09)	
Multicultural	223	3.30 (1.01)	
Psychoanalytic/Psychodynamic	223	2.90 (1.19)	

Table 2. *Open Ended Responses*

	Frequency	% of total	Sample comments
Positive	20	42.6	Small amount of clients in my side practice, but I am a big proponent of exercise and occasionally will go on a walk during session or encourage client to enroll at gym I always encourage clients to stay active in some way, whether through an exercise routine, stretching, walking etc. whatever is comfortable and doable for them. As well as assisting them in connecting with the correct professionals for workout plans and etc.
Negative	4	8.5	I have some hesitation around the idea of prescribing exercise because of the ways that exercise has been fused with the idea of weight loss in people's minds I think it's worth considering how rampant body dysmorphia and problematic eating is, how exercise interventions may be perceived
Neutral/Unsure	23	48.9	There needs to be more conversation about the benefits of mental health. Perhaps, integration during sessions (e.g., walking and talking) Exercise might be helpful, but I don't typically feel like it is a front line intervention for me The reason I don't "prescribe" exercise with my patients is I don't feel confident explaining the scientific benefits. We desperately need more resources on this topic.

n = 47 respondents (of 223 total)

Table 3. *Descriptive Statistics and Correlations for Continuous Variables*

	n	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1	223	2.16	0.93											
2	223	39.95	9.03	−.16**										
3	223	1.57	0.27	.11	−.03									
4	223	16.48	10.5	−.07	−.07	.06								
5	223	9.05	8.14	.19**	.31**	.04	−.03							
6	223	3.68	1.06	-.08	.09	.07	.10	-.12						
7	223	3.42	1.07	.13	-.02	.14	.09	.01	.22*					
8	223	3.31	1.15	.12	-.01	.02	-.14	-.10	.16	.20*				
9	223	2.75	1.19	.08	-.18	-.05	-.12	-.16	.19*	.15	.21*			
10	223	3.24	1.09	.10	-.08	-.05	-.01	-.17	-.16*	.11	.17	.25*		
11	223	3.30	1.01	.07	-.07	.04	-.12	-.11	-.02	.09	.19*	.33**	.27*	
12	223	2.90	1.19	.12	-.21	-.03	-.11	.29	-.06	.08	.11	.05	.14	.12

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

1. Prescribe Exercise 2. Age (yrs) 3. Gender 4. Clients/wk 5. Years practicing 6. Cognitive-behavioral 7. Solution-Focused 8. Family Systems 9. Feminist 10. Humanistic 11. Multicultural 12. Psychoanalytic/dynamic

Table 4. *Bivariate Correlations for Primary Variables in the Overall Sample (N = 223)*

	M (*SD*)	α	Potential Range	Observed Range
1. EMIQ-KNOW	19.92 (3.93)	.88	6.00 – 30.00	9.00 – 30.00
2. EMIQ-BELF	19.09 (3.17)	.91	6.00 – 30.00	11.00 – 29.00
3. EMIQ-BEH	11.92 (3.01)	.87	5.00 – 24.00	5.00 – 22.00
4. EMIQ-BARR	32.33 (7.59)	.85	11.00 – 55.00	15.00 – 54.00
5. IPAQ-SF	1539.05 (966.71)	.93	0.00 – 8000.00	0.00 – 6194.00

Note. EMIQ-KNOW = Exercise in Mental Illness Questionnaire-Health Professional Version (EMIQ-HP)—Knowledge Scale; EMIQ-BELF = Exercise in Mental Illness Questionnaire-Health Professional Version (EMIQ-HP)—Beliefs Scale; EMIQ-BEH = Exercise in Mental Illness Questionnaire-Health Professional Version (EMIQ-HP)—Behavior Scale; EMIQ-BARR = Exercise in Mental Illness Questionnaire-Health Professional Version (EMIQ-HP)—Barrier Scale; IPAQ-SF = International Physical Activity Questionnaire – Short Form.

Table 5.

Multiple Regression Analyses Predicting Exercise Prescription from Personal Exercise Behavior (Hypothesis 3; N= 223)

	Exercise Prescription Behavior					
Variable	*B*	*SE (B)*	β	R^2	F	ΔR^2
Step 1				.266**	17.34*	
Practice Setting	.471	.175	.367*			
Weekly # of clients	.523	.203	.167			
Length of time seeing clients	.298	.128	.452**			
Step 2				.388*		
Personal Physical Activity	.472	.152	.361		23.42*	.122*

Note. N = 223. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 6.

Multiple Regression Analyses Predicting Exercise Prescription from Clinician and Setting Variables (Hypothesis 4; N= 223)

	Exercise Prescription Behavior					
Variable	*B*	*SE (B)*	β	R^2	F	ΔR^2
Step 1				.197**	14.77*	
Setting	.061	.035	.524**			
Barriers	.053	.029	.437*			
Age	-.026	.015	.239			
Step 2				.261	6.14	.064
Demographics	-.631	.294	.087			
Attitudes	.386	.219	.166			
Theoretical Orientation	.409	.194	.129			

Note. N = 223. * $p < .05$, ** $p < .01$, *** $p < .001$.

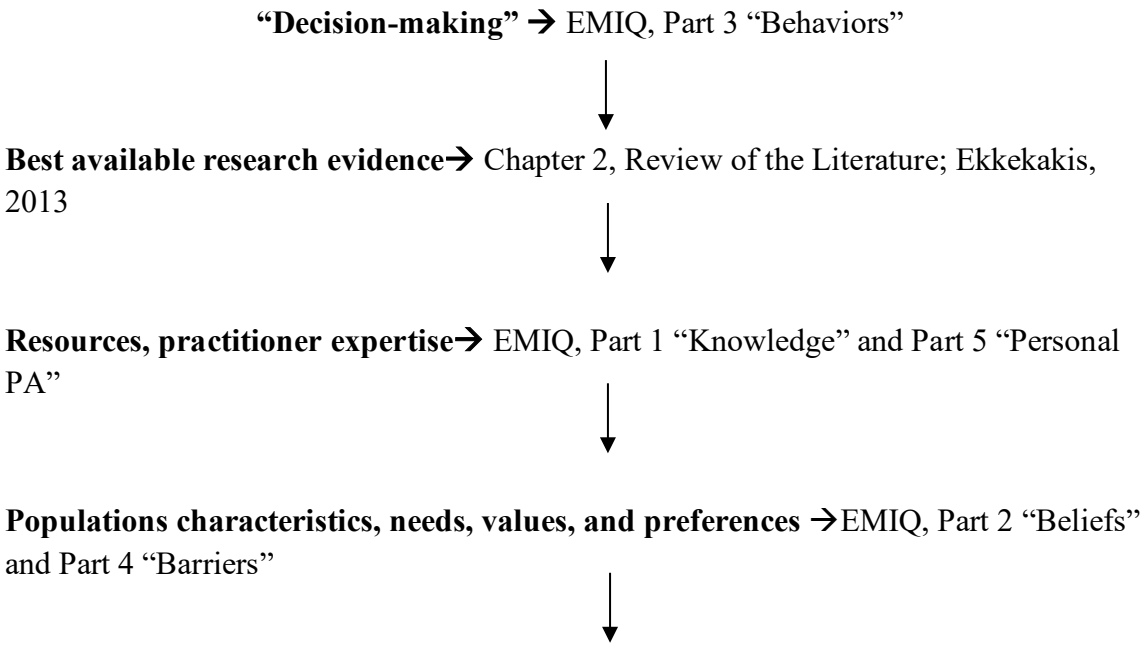
APPENDIX B

FIGURES AND MODELS

Figure 1. Jacobs Clinical Decision-Making Model

Domains that influence evidence-based decision making. This Venn diagram shows the relationships among 5 concepts. Three circles in the middle of the graphic overlap with each other: 1) "Best available research evidence," 2) "Resources, including practitioner expertise," and 3) "Populations characteristics, needs, values, and preferences." Overlapping these 3 circles and in the center is the circle "Decision-making." This group of 4 circles is surrounded by "Environment and organizational context." Source: Jacobs et al. (2012).

Figure 2. Clinical Decision-Making Model Layout



APPENDIX C

RECRUITMENT SCRIPT

Hello,

My name is Zachary Bruback and I am a doctoral student in the Collaborative Program in Counseling Psychology program at The University of Akron. I am currently collecting data for my doctoral dissertation. I am writing to request your participation in a study being conducted exploring possible factors that may influence the use of certain interventions by licensed mental health practitioners. Your participation is essential to achieving this goal, so we hope that you will take part in our study. The survey takes 15-20 minutes to complete and participants who complete this survey will have the opportunity, if they wish, to be entered into a raffle to win one of four $50.00 gift cards.

To be eligible to participate in this study:

- You must be a licensed mental health practitioner in the US.
- You must have current direct client contact.

If you wish to participate in this study, please click on the link below and you will be directed to the online survey.

Qualtrics Link

Thank you in advance for your time! Please feel free to pass on this link to other people who might be eligible. If you have any questions about this study, please feel free to contact me at ztb1@uakron.edu. This research has been approved by The University of Akron Institutional Review Board (IRB#).

Sincerely,

Zachary T. Bruback, M.A. | The University of Akron
(C) 330.703.7733 | ztb1@uakron.edu

APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

Please answer the following questions about yourself:

What is your age (in years)?	
Please indicate your gender:	A. Man B. Woman C. Nonbinary/genderqueer D. Transgender E. An identity not listed (please specify)
How would you classify yourself?	A. AMENA (Arab/Middle Eastern/North African) B. Asian/Pacific Islander C. Black/African American D. Caucasian/White E. Hispanic F. Indigenous or Aboriginal G. Latino/Hispanic H. Multiracial I. Would rather not say J. Other/Not Listed (please specify:____)
What is your highest degree obtained:	A. Master of Arts (MA) B. Master of Science (MS) C. Master of Family Therapy (MFT) D. Master of Social Work (MSW) E. Doctor of Philosophy (Ph.D.) F. Doctor of Psychology (Psy.D.) G. Doctor of Education (Ed.D.) H. Doctor of Social Work (DSW) I. Other/Not Listed (please specify:____)

What is your current profession?	A. Licensed Psychologist B. Licensed Professional Counselor C. Licensed Clinical Social Worker D. Licensed Marriage/Family Therapist E. Other/Not Listed (please specify:____)
Do you currently have direct client/patient contact?	YES NO
On average, how many clients/patients do you see in a typical week?	
How long have you been working directly with clients/patients (in years)?	
What is your primary current practice setting?	A. Private Practice B. University Counseling Center C. Private Hospital D. VA Hospital E. Community Mental Health F. Other:
% of clients/patients seen via telehealth (estimate)?	
In what state do you practice?	

Please rate the degree to which you practice from each of the following orientations:

	Not at all Very much
1. Cognitive/Behavioral	1 2 3 4 5
2. Constructivist/Narrative/Solution-Focused	1 2 3 4 5
3. Family Systems	1 2 3 4 5
4. Feminist	1 2 3 4 5

5. Humanistic/Existential	1 2 3 4 5
6. Multicultural	1 2 3 4 5
7. Psychoanalytic/Psychodynamic	1 2 3 4 5
8. Other (specify: _____)	1 2 3 4 5

APPENDIX E

EXERCISE IN MENTAL ILLNESS QUESTIONNAIRE (EMIQ)

Knowledge, attitudes and behaviors regarding exercise for people with a mental illness (*language slightly modified from original version)

Health Practitioner Version

This questionnaire asks questions regarding your knowledge, your attitudes and your behaviors regarding exercise for people with a mental health condition. We ask you to complete all questions. There is no right or wrong answer and it is important that we obtain an answer that represents your view as a health professional. For the purpose of this questionnaire, the term 'mental health condition' means any mental health condition including but not limited to depression, schizophrenia, bipolar disorders I and II, post-traumatic stress disorder and other mental health conditions.

Part 1. Knowledge.
This sections asks about your formal training regarding exercise and your knowledge about the benefits of exercise

1. Have you had any formal training in exercise prescription (e.g. University degree in a related area, Vocational training, In-service)?

Yes / No (If no, skip to question 5)

2. If you answered yes, please provide details including course duration, on who provided this formal training (e.g. University degree, Vocational training, In-service)

_____

3. How would you rate your knowledge of exercise prescription for people with a mental health condition? (Please circle)

1	2	3	4	5
Very poor	Poor	Average	Good	Excellent

4. How would you rate your confidence to prescribe exercise for people with a mental health condition? (Please circle)

1	2	3	4	5
Very poor	Poor	Average	Good	Excellent

To what extent do you agree or disagree with the following statements (for the purpose of this section, 'Physical activity' refers to activity undertaken according to population health guidelines i.e. 30 minutes of moderate intensity activity performed on all or most days of the week)

5. Maintaining a healthy weight can prevent you from developing chronic diseases such as cardiovascular disease or type II diabetes.

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

6. Physical activity can lower your total blood cholesterol.

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

7. Physical activity can lower your blood pressure.

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

8. People who undertake regular physical activity are less likely to develop depression than those who do not

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

9. Physical activity can reduce the risk of some forms of cancer including colorectal cancer, breast cancer (women) and prostate cancer (men).

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

10. The benefits of exercise will still accrue if 30 minutes of exercise is undertaken in shorter blocks of time such as 10 minutes

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

Part 2. Beliefs.
The next few questions ask about your beliefs regarding exercise for people with a mental health condition

11. Listed below are some treatment strategies with demonstrated evidence for effectiveness. Rate how valuable you believe each treatment strategy is compared to exercise.

a) Medication

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

b) Social support

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

c) Electroconvulsive therapy

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

d) Bright light therapy

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

e) Family therapy

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

f) Social skills training

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

g) Cognitive behavioral therapy

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

h) Vocational rehabilitation

1	2	3	4	5
Significantly less than exercise	Somewhat less than exercise	Of equal value to exercise	Somewhat better than exercise	Significantly better than exercise

To what extent do you agree or disagree with the following statements

12. People with a mental health condition know that exercise is good for their **physical** health

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

13. People with a mental health condition know that exercise is good for their **mental** health

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

14. People with a mental health condition do not exercise because they don't think they can

1	2	3	4	5

Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

15. Exercise is valuable for patients ***hospitalized*** with a mental health condition in the same manner as outpatients

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

16. The physical and mental health benefits of exercise for people with a mental health condition are not long lasting

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

17. People with a mental health condition who are prescribed exercise will not adhere to it

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

18. Using numbers 1 – 10 with 1 as the most important, rank the importance of the following treatment strategies in the care of people with a mental health condition

------ Medication (e.g anti-depressants)
------ Social support
------ Electroconvulsive therapy
------ Bright light therapy
------ Family therapy
------ Social skills training
------ Cognitive behavioral therapy

------ Vocational rehabilitation
------ Exercise
------ Hospitalization

If there are other treatment strategies not listed above which you feel are important please list them here including why you believe they are important

_____
_____
_____
_____

Part 3. Behaviors.
The next few questions ask about your prescription of exercise
(describing what they should do and how they should do it) **for people with a mental health condition**

Please circle your response

19. Do you prescribe exercise to people with a mental health condition

1	2	3	4
Never	Occasionally	Most of the time	Always

If you answered 'Never' above, skip to Question 26

20. Do you undertake a formal assessment of the clients' suitability for exercise prior to prescribing a program?

Yes / No If you answered 'Yes, please describe what assessment tools or items you use. If you answered 'No', please provide a reason for not undertaking some form of assessment.

_____
_____
_____

21. When you prescribe exercise to people with a mental health condition, what methods do you use? (Please tick all that apply)

    1) Personal discussion
    2) Brochures or pamphlets
    3) Referral to community based programs

4) Referral to an exercise professional (Exercise Physiologist, Gymnasium, etc.)
5) Nothing specific
6) Other _____

22. When you prescribe exercise to people with a mental health condition, how often do you recommend they exercise? (Please select only one response)

1) Every day
2) Most days of the week
3) Once to twice a week
4) As often as they feel they can
5) Other _____

23. When you prescribe exercise to people with a mental health condition, how hard (what intensity) do you recommend they exercise? (Please select only one response)

1) Low intensity (a slight rise in heart rate and breathing, talking remains easy)
2) Moderate intensity (a noticeable rise in heart rate and breathing but talking is still possible)
3) Vigorous intensity (getting out of breath, talking is not possible)
4) At a level that makes them feel good
5) I do not suggest an intensity
6) Other _____

24. When you prescribe exercise to people with a mental health condition, how long do you suggest people try to exercise for at any one time? (Please select only one response)

1) 10 minutes per session
2) 20 minutes per session
3) 30 minutes per session
4) 60 minutes per session
5) As long as they can
6) Other _____

25. When you prescribe exercise to people with a mental health condition, what type of exercise do you suggest? (Please tick all that apply)

1) Aerobic exercise (e.g. Walking, cycling)
2) Weight training or resistance training
3) Swimming
4) Team sports (touch football, soccer, netball)

5) Combat sports (Boxing, Karate etc)
6) Relaxation activities (Tai Chi, Yoga)
7) Other _____

Part 4. Barriers to exercise participation for people with a mental health condition

To what extent do ***you*** agree with the following statements regarding the barriers to prescribing exercise to people with a mental health condition?

26. Their mental health makes it impossible for them to participate in exercise

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

27. I'm concerned exercise might make their condition worse

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

28. I am not interested in prescribing exercise for people with a mental health condition

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

29. I don't believe exercise will help people with a mental health condition

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

30. Their physical health makes it impossible for them to participate in exercise

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

31. I'm concerned they might get injured while exercising

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

32. People with a mental health condition won't adhere to an exercise program

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

33. My workload is already too excessive to include prescribing exercise to people with a mental health condition

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

34. Prescribing exercise to people with a mental health condition is not part of my job

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

35. I do not know how to prescribe exercise to people with a mental health condition

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

36. Prescription of exercise to people with mental health condition is best delivered by an exercise professional such as an exercise physiologist

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

People with a mental health condition report many barriers to exercise. These are some statements expressed by people with a mental health condition about barriers to exercise. To what extent do you agree with ***their*** statements below?

37. I am too unwell to exercise

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

38. It takes too much time

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

39. There is too much stigma attached to having a mental health condition

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

40. I don't know what I should do

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

41. My friends or family won't exercise with me

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

42. There are too many side effects from the medications

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

43. I lack the confidence to do any exercise

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

44. I'm too fat to exercise

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

45. I am afraid I will get hurt

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

46. I have too many physical health problems

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

47. There is no safe place for me to exercise

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

48. I don't have any equipment to do exercise with

1	2	3	4	5
Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree

Part 5. Exercise participation.
This section asks about your own personal physical activity participation

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time *you* spent being physically active in the **last 30 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work,

as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 30 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

49. During the **last 30 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

If you report no vigorous physical activities, skip to question 51

50. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 30 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

51. During the **last 30 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

If you report no moderate physical activities, skip to question 53

How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

Think about the time you spent **walking** in the **last 30 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

52. During the **last 30 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**

If you report no walking, skip to question 55

53. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 30 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

54. During the **last 30 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

APPENDIX F

IRB APPROVAL

Office of Research Administration
Akron, OH 44325-2102

NOTICE OF APPROVAL

Date: 2/28/2023

To: Zachary T. Bruback
Dr. Suzette Speight

From: Katie Watkins Office of Research Administration, Special Assistant and IRB Administrator

IRB Number: 20230203

Title: Use of Exercise as a Mental Health Intervention

Approval Date: 02/28/2023

Thank you for submitting your Request for Exemption to the IRB for review. Your protocol represents minimal risk to subjects and qualifies for exemption from the federal regulations under the category below:

- ☐ **Exemption 1** – Research conducted in established or commonly accepted educational settings, involving normal educational practices.
- ☑ **Exemption 2** – Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior.
- ☐ **Exemption 3** - Research involving the use of benign behavioral interventions in conjunction with the collection of information from adult subjects through verbal or written responses (including data entry) or audiovisual recordings, and subjects have prospectively agreed to the intervention.
- ☐ **Exemption 4** – Research involving the collection or study of existing data, documents, records, biospecimens specimens, pathological specimens, or diagnostic specimens.
- ☐ **Exemption 5** – Research and demonstration projects conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine public programs or benefits.
- ☐ **Exemption 6** – Taste and food quality evaluation and consumer acceptance studies.
- ☐ **Exemption 7** – Research involving the use of a broad consent for the storage or maintenance of identifiable information and/or biospecimens for future research.
- ☐ **Exemption 8** – Research involving the use of a broad consent for the use of identifiable information and/or biospecimens for future research.

Annual continuation applications are not required for exempt projects. **Any changes made to the study design or procedures require a change application be submitted to the IRB for acknowledgment and/or approval before the changes may be implemented.** If the IRB determines the change(s) pose an increased risk to subjects, and/or include activities that do not fall within the approved exemption category, a new application must be submitted.

Please retain this letter for your files. This office will hold your exemption application for a period of three years from the approval date. If you wish to continue this protocol beyond this period, you will need to submit another Exemption Request. If the research is being conducted for a master's thesis or doctoral dissertation, the student must file a copy of this letter with the thesis or dissertation.

☑ Approved consent form/s enclosed

APPENDIX G

INFORMED CONSENT

20230203

APPENDIX B. Informed Consent Document

Title of Study: Use of Exercise as a Mental Health Intervention

Introduction: You are invited to participate in a research study being conducted by Zachary Bruback at the University of Akron.

Purpose: The purpose of this research is to assess factors that influence mental health practitioners use of exercise as an intervention for mental health concerns

Procedures: You may participate in this study if you are a licensed mental health practitioner in the US and have current direct client contact. Participation in this study will occur online, beginning with this informed consent document. We are aiming to gather data from 200 participants through this project. Participants who agree to participate will complete four questionnaires and a demographic survey, for a total of 67 questions. We anticipate that the study should take about 15-20 minutes to complete.

Incentives: We offer participation in a raffle to win one of four $50 gift cards.

Risks and Discomforts: No significant risks or discomforts are anticipated. In the unlikely event that you become upset while responding to the surveys, please feel free to contact the investigator, Zachary Bruback (ztb1@uakron.edu; 216-200-7878).

Benefits: There will be no direct benefits to you for participating in this study. However, your participation in this study will help us to understand the experiences of mental health practitioners and the factors that influence their decision making.

Right to Refuse or Withdraw: Participation in this research study is entirely voluntary. You may refuse to participate or stop answering questions at any time during the study without being penalized.

Anonymous and Confidential Data Collection: Data collection will be completely anonymous. You will be directed to another website where you will enter identifying information in order to be entered into a raffle for participation. The researchers will not be able to link that information to any particular survey responses, maintaining your confidentiality.

Confidentiality of Records: Responses to all measures will be anonymous and will not be traceable back to the individual. Records of this study will be kept private. Any published results will not contain personally identifiable information and your name will not be associated to any of the data.

Who to Contact with Questions: If you have any questions about this study, you may contact the investigator, Zachary Bruback (ztb1@uakron.edu; 216-200-7878). This project has been reviewed and approved by The University of Akron Institutional Review Board. IRB can be reached at (330) 972-7666.

APPROVED
IRB
Date 2-28-2023
The University of Akron
EXEMPT 2

20230203

Acceptance: I have read the information provided above and all of my questions have been answered. I voluntarily agree to participate in this study. My completion and electronic submission of this questionnaire will serve as my consent. I may print a copy of this consent statement for future reference.

Those who consent by clicking the button will then be taken to the survey.

We recommend that you print this page for your records.

Thank you for participating!

(1.)I am a licensed mental health practitioner in the U.S., and I have current direct client contact.
(2.)I agree to participate

APPROVED
IRB
Date 2-28-2023
The University of Akron
EXEMPT 2