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CHAPTER 1

Stress, Resilience, and Coping

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ABSTRACT

Stress can have adverse effects on psychological functioning. This is evident by increases in symptoms of post-traumatic stress disorder, depression, and other psychiatric disorders in those who have experienced high levels of stress. However, there are several factors that make people more at risk or more resilient to developing psychological problems in the aftermath of experiencing high levels of stress. Similarly, there are several methods of coping that are more or less effective in the aftermath of stressful experiences. In this chapter, we will review the nature and impact of stress, risk and resilience factors, and different methods of coping with stress.

1.1 INTRODUCTION

Psychological stress is the physical and/or psychological outcome of a perceived environmental demand on an individual (Cohen et al., 2007). The environmental demands that promote psychological stress (stressors) can come in a number of forms, ranging from chronic stressors such as chronic illness and community violence to time-limited high-severity stressors, such as natural disasters and terrorist attacks. An individual's response to stressors can be mental and/or physical, depending on the individual's psychological makeup, social and cultural resources, and the needs of the situation. In this chapter, we will discuss the nature of psychological stress, the types of factors that make an individual more or less resilient to psychological stress, and methods of coping that may be useful in dealing with psychological stress.

1.2 THE NATURE AND EFFECTS OF STRESSORS

1.2.1 THE NATURE OF STRESSORS

One factor that influences an individual's response to stress is the nature of the stressor(s). Greater perceived severity of the stressor and longer duration of the stressor are associated with more problematic stress responses (Dyb et al., 2014; Gil, 2015; Sayed et al., 2015; Xue et al., 2015). Perceptions of stressor severity are subjective and can be quantified in a number of different ways. For example, research suggests that greater perceived stressfulness and greater interpersonal impact of stressors are associated with a worse stress response (Martin et al., 2013;

Martinez-Torteya et al., 2009). Closer proximity to the stressor is also associated with worse responses (Gil, 2015; Silwal et al., 2018). This is especially evident in the case of vicarious traumas. For example, research suggests that witnessing injury or death first-hand is especially predictive of outcomes such as post-traumatic stress disorder (PTSD; Cheng et al., 2014; Xue et al., 2015). Proximity can also be relational in nature. This is evident in studies suggesting that events such as the death of a family member or colleague as well as exposure to human remains has been found to increase the risk of PTSD in 9/11 first responders (Pietrzak et al., 2014).

Along these lines, stressors can be categorized into three general groups: negative events, chronic strains, and traumatic stressors (Thoits, 2010). Negative events are single aversive demands on a person's life. Meanwhile, chronic strains are characterized by demands that are persistent or repeated. Traumatic stressors occur in situations in which the individual believes that there is a threat to their life, bodily integrity, or sanity (Thoits, 2010). All three types of stressors prompt physiological and psychological responses that impact physical and psychological health.

1.2.2 PHYSIOLOGICAL EFFECTS OF STRESS

Psychological stress cues activation of the fight-or-flight system of the body. This involves the body's production of adrenaline and subsequent release of glucocorticoid hormones such as cortisol, which in turn initiates more overt signals of physiological arousal such as the increased heart rate (McEwen, 1998). Not all stressors result in full activation of the fight-or-flight response (Taylor, 2010). However, an overload of numerous stressors of varied severity may lead to allostasis, the breakdown of physiological processes from the overproduction of cortisol, creating negative effects for brain, immune system, and cardiovascular functioning (McEwen, 1998).

There is a broad literature suggesting an association between psychological stress and physical health problems (for a theoretical review, see van der Kolk, 2014). The increased levels of stress are associated with higher blood pressure (Taylor, 2010), increased likelihood of chronic medical conditions such as cardiovascular, pulmonary, and metabolic diseases (Agorastos et al., 2014; Finch et al., 2001), decreased immune system (Segerstrom & Miller, 2004) and neurological functioning (Qin et al., 2009), and poorer perceived health more generally (Agorastos et al., 2014; Finch et al., 2001). Risks of these adverse health outcomes become more likely as the probability of allostasis increases (Ehlert, 2013). Research further suggests that the pernicious effects of stress may affect health more adversely than tobacco use and excessive drinking (Toussaint et al., 2016).

1.2.3 PSYCHOLOGICAL EFFECTS OF STRESS

Stress also has an impact on psychological health. Higher levels of stress are associated with poorer perceived mental health, as well as increased likelihood of a number of psychiatric disorders (Folkman et al., 1986; Langner & Michael, 1963). With respect to these disorders, the two syndromes most closely associated with stress are PTSD and depression (Campbell et al., 2008; Colodro-Conde et al., 2017).

The PTSD is by definition a disorder that develops following exposure to a severe

(traumatic) stressor (American Psychiatric Association, 2013). Research suggests that greater duration and chronicity of exposure to the stressor(s), as well as whether the stressor is man-made (e.g., a trauma perpetrated by a person vs. a natural disaster), are associated with more severe and complex PTSD symptoms (e.g., Kira et al., 2008; for theoretical review, see Herman, 1992). Greater severity of PTSD symptoms is also associated with increases in somatic (e.g., chronic pain), externalizing (e.g., substance use), and internalizing (e.g., anxious, depressive) symptoms (Campbell et al., 2008; Miller et al., 2008).

For its part, depression is a syndrome with a high genetic component (Kendler et al., 2010). However, research suggests that stressful events interact with the genetic vulnerability for depression to produce an increased likelihood of developing depressive symptoms (Colodro-Conde et al., 2017; Kendler et al., 2010). As with PTSD, certain kinds of stressors are particularly associated with depression. Research suggests that single high-intensity stressors, interpersonal stressors, and stressors that have the potential to alter a person's identity, such as a loss of a job or a loved one, are especially likely to lead to depressive symptoms (Brown & Harris, 1986; Soria-Saucedo et al., 2018). Other research suggests that lifetime exposure to stress in general and exposure to childhood trauma in particular are associated with depression (Hammen, 2005).

1.3 RESILIENCE TO STRESS

Not everyone develops physical or psychological problems in the aftermath of stressful experiences, even when the stressors are severe. The degree to which a person can respond adaptively to stressful experiences is referred to as resilience (Southwick et al., 2014). Resilience is an umbrella term encompassing a number of overlapping facets, including social, psychological, and cultural factors (Hobfoll, 1989; Southwick et al., 2014).

1.3.1 SOCIAL ASPECTS OF RESILIENCE

The support a person receives from his or her social network has a strong influence on that person's ability to respond adaptively to stress, with higher levels of social support leading to reduced psychological problems in the aftermath of stressors. A number of studies suggest that social support is negatively associated with symptoms of PTSD in veterans, first responders to the 9/11 terrorist attacks, and survivors of natural and man-made disasters (e.g., Cheng et al., 2014; Dyb et al., 2014; Galea et al., 2008; Pietrzak et al., 2014; Sayed et al., 2015). This may be particularly the case for financial support. Research suggests that a lack of financial support is associated with greater severity of PTSD symptoms following natural disasters (Cheng et al., 2014; Galea et al., 2008).

Findings appear to be similar with respect to the association between social support and depression. Several studies of parenting-related stress reported by mothers indicate that social support is negatively associated with depressive symptoms (Aneshensel & Frerichs, 1982; Cairney et al., 2003). Research further suggests that emotional support is particularly linked to lower levels of depression in expecting mothers (Jones et al., 2005). Thus, the role of social support appears to be beneficial regardless of the stressor, although the specific type of support that is most effective may vary depending on the situation.

1.3.2 PSYCHOLOGICAL ASPECTS OF RESILIENCE

There are a number of psychological factors that also convey resilience to stress. Much of this research has focused on personality traits, defined as stable individual differences between people that influence their responses to the environment (McCrae & Costa, 2008; Widiger & Smith, 2008). One trait of particular relevance with resilience is neuroticism, the general predisposition to experience negative affect, especially in response to stress (Widiger, 2009). Research suggests that not only is neuroticism positively associated with a broad swath of mental and physical health problems (including but not limited to PTSD and depression; see Jakšić al., 2012; Kotov et al., 2010; Lahey, 2009), but at high levels also exacerbates (i.e., reduces resilience to) the effects of stress, resulting in higher levels of PTSD, depression, and related symptoms (Kendler et al., 2004; Lawrence & Fauerbach, 2003; Yalch et al., 2017; Yalch & Levendosky, 2017). Another important trait is dominance, which at high levels buffers the effect of stress on symptoms of PTSD, depression, anxiety, and other psychological problems (Bernard et al., 2019; Yalch et al., 2013; Yalch et al., 2015). High dominance as well as high warmth are also associated with less self-critical appraisals of stress (Yalch & Levendosky, 2016), which may indicate a potential pathway through which the effects of these traits might occur.

These and other personality traits do not act in isolation, but rather interact with each other to provide resilience to stressors (for theoretical review, see Miller, 2003). Specifically, research suggests that low levels of neuroticism combined with high levels of more adaptive traits, such as agreeableness, conscientiousness, and extraversion, is associated with moderate levels of PTSD and other symptoms in individuals exposed to traumatic stressors. In contrast, high neuroticism combined with low extraversion leads to comparatively higher PTSD and comorbid internalizing symptoms, and high neuroticism combined with low agreeableness and conscientiousness leads to higher PTSD and comorbid externalizing symptoms (e.g., Forbes et al., 2010; Miller et al., 2003, 2004; Miller & Resick, 2007). With respect to dominance, results of one study incorporating a clinical sample with a high rate of exposure to traumatic stressors indicated that individuals who were high in dominance had a shorter duration of PTSD symptoms compared to those who were low in both dominance and warmth (Thomas et al., 2014).

Another relevant psychological factor that influences resilience to stress is self-efficacy, which can be defined as an individual's capacity to believe in his or her ability to succeed in specific situations and achieve specific goals (Benight & Bandura, 2004). Social cognitive theorists hypothesize that high self-efficacy increases human agency, thereby improving individuals' ability to respond effectively to traumatic and otherwise stressful experiences (e.g., Benight & Bandura, 2004). Research suggests that high self-efficacy in the face of stress is associated with lower symptoms of PTSD (Ikizer et al., 2015) and depression (Sawatzky et al., 2012; Tsay & Chao, 2002). Similarly, research suggests that an individual's belief in their ability to manage their anxiety also buffers the effects of stress on symptoms of PTSD and depression as well as on the use of drugs (Schroder et al., 2017). There is also a reason to believe that unlike personality traits, which are viewed as largely stable, self-efficacy is more fluid and can be modified to increase resilience to stress. One study found

that an intervention to increase self-efficacy in nurses not only increased levels of self-efficacy, but also decreased levels of secondary traumatization (Berger & Gelkopf, 2011).

1.3.3 CULTURAL ASPECTS OF RESILIENCE

In addition to social and psychological influences on resilience, there are also aspects of culture that affect resilience. Boardman (2004) found that the stability of the neighborhood in which an individual lives can mitigate the negative effects of stress on physical health. Living in a stable neighborhood increases social capital, the social resources that can be drawn upon when in need, thus increasing emotional and material resources and creating a sense of meaning through community (Marmot, 2005). Neighborhoods tend to differ in terms demographic factors that affect individuals' responses to stress, including race, immigrant status, and identification as a marginalized sexual minority.

There are also resources related to race and ethnicity associated with increased resilience. Higher levels of socialization with and higher perceived social support from one's racial/ethnic group are related to increased resilience in the face of adversity in African American and Mexican American samples (Berkel et al., 2010; Brown, 2008). Socialization with people who are similar racially/ethnically is postulated to be a protective factor against the negative psychological effects of racial discrimination (Brown & Tylka, 2011; Neblett et al., 2006), which is itself a unique stressor for minority subscultures (Finch et al., 2001; Flores et al., 2008; Williams et al., 1997). Similarly, the research suggests that among immigrant populations, giving and receiving social support, as well as having access to social resources (childcare, language tutors, case managers, etc.), practicing culture consistent with their country of origin, and having a high degree of religiosity also increase resilience (Sajquim de Torres & Lusk, 2018; Goodman et al., 2017). For individuals identifying as sexual minorities, connection to a community with a similar sexual identity also promotes resilience (McConnell et al., 2018; Monin et al., 2017). In sum, this research suggests that although membership of a marginalized identity brings with it unique stressors, affiliation with those who share that marginalized identity can be a form of resilience.

Other factors that affect individuals' response to stress are age and sex. Older age is related to fewer symptoms of anxiety, depression, and general distress (Jorm, 2000). In contrast, younger age has been associated with decreased resilience when undergoing a stressor, which may be related to research suggesting that younger individuals have more pronounced negative affect in response to a stressor than older individuals (Diehl et al., 2012). Other research has supported this finding, suggesting that older adults react in more adaptive ways to stress than younger adults (Schilling & Diehl, 2015). With respect to sex, the research suggests that women are more likely to report exposure to stressful experiences that are interpersonal in nature, including traumatic stressors perpetrated by people close to them, and exhibit more psychological symptoms (e.g., of PTSD and depression) in response to these stressors than men (Goldberg & Freyd, 2006; Martin et al., 2013; Nolen-Hoeksema, 2001; Tang & Freyd, 2012; Tolin & Breslau, 2007). Women are also less resilient to stress compared to men following a loss of social support (Olff, 2017). In contrast, men have been found to be more vulnerable to the cardiovascular effects of stress than women and children (Allen et al., 1997).

1.4 STRESS, RESILIENCE, AND COPING

Coping refers to behaviors to manage stress that crosses a threshold of tolerability (Lazarus & Folkman, 1984). Coping comes in a number of different forms and can be categorized as task-focused versus emotion-focused coping and engaged versus disengaged coping (Booth & Neill, 2017; Feinstein et al., 2017; Chen et al., 2018; Delahaij & van Dam, 2017).

Task- versus emotion-focused coping refers to whether a given coping behavior is targeted toward the stressor itself (e.g., an upcoming exam) or the emotions stemming from recognizing the stressor (e.g., anxiety). To use an upcoming exam as an example of a stressor, task-focused coping might involve studying for the exam, whereas emotion-focused coping might involve taking deep breaths to manage anxiety about how well one might do in the exam. With respect to the efficacy of task- versus emotion-focused coping, research suggests that task-focused coping is more effective for stressors over which an individual might have some element of control, whereas emotion-focused coping is more appropriate in the context of uncontrollable stressors (Delahaij & van Dam, 2017; Lee et al., 2016). However, emotion-focused coping is most beneficial when coupled with task-focused coping (Lee et al., 2016). In the absence of task-focused coping, focusing on negative emotions is associated with symptoms of depression and anxiety, especially among women (Hundt et al., 2013; Kelly et al., 2008). There appears to be an association between age and the use of task- versus emotion-focused coping. Research suggests that as people age they become more likely to use task-focused coping (Chen et al., 2018), which may be related to research suggesting that as people age, they become more effective at coping with stress (Schilling & Diehl, 2015). The preference for task-focused coping in older adults appears to be mediated by a positive affect such that as people age they become more positive, and therefore more likely to focus directly on a stressful task.

Engaged (vs. disengaged) coping refers to how active a coping behavior is. Engaged coping involves actively approaching either the stressful task (e.g., studying for an upcoming exam) or the aversive emotion (actively managing anxiety about an upcoming exam). Disengaged coping involves avoiding the stressor and its sequelae (e.g., by avoiding thinking about an exam and how anxious one is about one's lack of preparation for it by playing video games). Research suggests that engaged coping is generally more adaptive than disengaged coping (Feinstein et al., 2017).

The level of psychopathology may also influence how flexible an individual's use of coping is. The connection between coping styles and psychopathology can be dynamic and multidirectional such that not only can certain styles of coping lead to psychopathology, but psychopathology can predispose individuals to certain coping styles (Heffer & Willoughby, 2017). Research suggests people who are depressed are less likely to seek out and use a broader array of coping strategies (Heffer & Willoughby, 2017). This is problematic as people who are depressed and/or suicidal are more likely to rely on emotion-focused versus task-focused coping. In contrast, someone who is more flexible in their coping (perhaps because they are not overwhelmed by high levels of symptoms), upon realizing that emotion-focused coping (e.g., via using deep breathing) has not reduced their anxiety may change their coping strategy to something more task-focused (e.g., trying to solve the stress-inducing problem; Lee et al., 2016). This suggests that adaptive coping is

more related to using a flexible range of coping styles than it is the use of any one specific style (Booth & Neill, 2017; Lee et al., 2016).

1.4.1 COPING AND RESILIENCE

There is a close association between coping and resilience such that a person's resilience affects what coping strategies are used, and the ability to cope effectively with stress affects a person's resilience (Booth & Neill, 2017; Lee et al., 2016). For example, individuals' coping responses are often affected by their appraisals of stress, which as research suggests are influenced by individual differences such as personality traits (Lazarus & Folkman, 1984). There are two general types of stress-related appraisals: primary and secondary appraisals. Primary appraisals concern how severe (e.g., dangerous) the stressor is and secondary appraisals concern whether and how one can manage the stressor (Lazarus & Folkman, 1984). Both kinds of appraisals are influenced by psychological resilience factors, such as personality traits in the case of primary appraisals (e.g., see Yalch & Levendsky, 2016) and self-efficacy in the case of secondary appraisals (e.g., see Benight & Bandura, 2004; Delahaij & van Dam, 2017). Personality traits can also influence the selection of coping strategies directly (Parker & Wood, 2008). For example, high levels of traits such as extraversion may make an individual more likely to select engaged coping strategies, such as utilizing social support, whereas high levels of neuroticism may make an individual more likely to utilize disengaged emotion-focused coping (Pereira-Morales et al., 2018). With respect to the dynamic interaction between resilience and coping, individuals who experience more positive emotions (due in part to personality) utilize more adaptive coping strategies and therefore develop increased resilience (Gloria & Steinhardt, 2014). These individuals with increased resilience in turn tend to utilize multiple coping strategies at once, likely due to an ability to identify the most adequate strategy for each stressor and then employ it, instead of restricting themselves to using a single strategy (Lee et al., 2016).

Resilience and coping may also be influenced by the age at which a person is first called on to be resilient to and cope with stress. There is some research suggesting that some degree of early life stressors exerts a positive influence on resilience (Booth & Neill, 2017). One reason for this is that early life stressors change the perception of stress in later life and influence coping patterns (Turner & Lloyd, 1995). However, research suggests that children who experience highly stressful environments early in their development may be more likely to use avoidant or aggressive coping styles (Repetti et al., 2002), suggesting that in order to be helpful, early life stress should not be too severe.

1.5 CONCLUSION

Stress can have deleterious effects on individuals. This is evident in increases in physical health problems such as chronic medical conditions and psychological problems such as depression and PTSD. The nature and severity of the stressor both influence the degree of stress-related physical and psychological problems. However, individual differences in resilience also influence physical and psychological problems in the aftermath of stressful experiences. Resilience includes social, psychological, and cultural aspects as well as the methods individuals use to cope with stressful events. Resilient

individuals have robust social support and cultural networks, high levels of agreeableness, conscientiousness, dominance and extraversion, low levels of neuroticism, and a self-efficacious view of themselves. Resilient individuals use a range of coping methods with a preference for engaged, task-focused coping. Overall, individuals' resilience to stress is idiosyncratic, based upon the interaction of multiple factors and leading to a multidetermined physical and psychological response.

KEYWORDS

- **coping**
- **personality**
- **resilience**
- **self-efficacy**
- **stress**

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