Chapter Title: Psychological Fitness Constructs and Measures

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3. Psychological Fitness Constructs and Measures

This chapter reviews prominent constructs within the psychological domain that have been linked to health, well-being, and resilience. They include self-regulation, positive and negative affect, perceived control, self-efficacy, self-esteem, and optimism. Multidimensional constructs relevant to psychological fitness were also included in the course of this review. However, these multidimensional constructs often contain dimensions that are more directly relevant to other TFF domains. For example, Ryff's (1989) structure of well-being includes *positive relations with others* as one of six core dimensions of well-being. Although relevant to psychological fitness, personal relationships are covered in detail in the companion report on social fitness (McGene, 2013). Other examples of multidimensional constructs that contain dimensions relevant to multiple TFF domains include hardiness (Bartone et al., 2008; Eschleman, Bowling, and Alarcon, 2010; Maddi, 2002, 2005, 2007; Skomorovsky and Sudom, 2011; Vogt et al., 2008) and sense of coherence (SOC) Antonovsky, 1984, 1993; Antonovsky and Sagy, 1986). Although these multidimensional constructs are not fully evaluated in this report, their relevant dimensions to psychological fitness are discussed within the context of the framework presented below. For example, hardiness is generally thought of as a composite of three factors: commitment, control, and challenge. Control and challenge are related to constructs discussed in this report (e.g., perceived control, coping). The first factor, commitment, is related to a sense of purpose, which is discussed in the companion report on spiritual fitness (Yeung and Martin, 2013).

Also included is a set of additional psychological resources that have seen less attention in the literature but have recently emerged as important for stress-buffering and overall psychological health. These include adaptability, self-awareness, and emotional intelligence. Where possible the chapter also notes how each construct has been measured.

For each construct, a definition is provided followed by an overview of research and common approaches for measuring each construct. To date, most measurement approaches have used self-reports to assess psychological constructs. More recent attempts to measure stress responses and psychological states have used physiological measures such as electroencephalogram, event related potentials, and heart rate variability. Although physiological measures may overcome some of the known limitations of self-report measures (e.g., self-enhancement bias), they are generally used in clinical applications, can be expensive, and are less practical for large populations. For these reasons, such physiological measures are not considered as part of this review.

Self-Regulation

Definition

An important building block for the development of many psychological resources, "[s]elf-regulation refers to those processes internal and/or transactional, that enable an individual to guide his/her goal-directed activities over time and across circumstances" (Karoly, 1993, p. 25). This ability affects the regulation of emotions, thought-processes, behaviors, and performance (Baumeister, Heatherton, and Tice, 1994).

Supporting Research

Early research suggested that three main components provide the foundation for self-regulation (Carver and Scheier, 1982): (a) having a clear set of standards, (b) monitoring one's current state to determine any deviation from set standards, and (c) an operate phase in which one attempts to modify the current state when a deviation from the set standard is identified (Baumeister and Heatherton, 1996). Using weight control as an illustrative example, one may determine that 175 lb is his standard for a healthy weight. After weighing himself, he recognizes that he is 10 lb heavier than his preferred weight. Finally, he changes his behavior, perhaps by modifying his diet or exercising more regularly, to bring his weight back to 175 lb.

More recent research has begun to uncover the neural basis for many important self-regulatory functions. For example, different areas of the prefrontal cortex in the brain appear to be particularly important to self-regulation (Heatherton, 2011). When these regions of the brain are damaged, individuals have been found to have difficulty in controlling their behavior, planning actions, and regulating goals, as well as to suffer from decreased motivation. These findings highlight the importance of both conscious and unconscious (i.e., neurological) processes in the regulation of emotions, thoughts, and behaviors. Indeed, it is now recognized that both types of processes work to control behavior (Posner and Rothbart, 2000).

Self-regulatory failure has been implicated in many societal problems where individuals fail to set standards, monitor their behavior, or change their behavior. For example, inability to delay gratification, procrastination, consumption of alcohol and tobacco, and other health-related behaviors have all been subject to analysis of failed self-regulation (Baumeister and Heatherton, 1996). Not only does self-regulation facilitate the ability to exercise restraint, direct choices, and persist in the face of adversity, but it is also important in helping individuals to "bounce back" after experiencing stress. For example, Aspinwall and Taylor (1997) argue that self-regulation can help individuals avoid or minimize stress through anticipation and proactive coping. Furthermore, recent theoretical advances in developmental epidemiology directly implicate poor self-regulation as a critical risk factor for the development of PTSD (Koenen, 2006). This theoretical framework suggests that self-regulation not only directly affects how individuals respond following a traumatic event but may also indirectly increase the risk of exposure to

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trauma. For example, those with poor self-regulation may be more likely to abuse drugs and alcohol, which heightens their risk of exposure to a serious car accident.

Measurement

Self-regulation has most frequently been measured in laboratory settings under carefully controlled conditions. Many of these measures objectively assess self-regulation by assessing the ability to delay gratification, persist on difficult or impossible tasks, or control attention processes. For example, the Stroop task[1] has been used to measure self-regulatory depletion under varying conditions (e.g., Richeson and Shelton, 2003). Other researchers have developed self-report measures of self-regulation (e.g., Brandon, Oescher, and Loftin, 1990; Rosenbaum, 1980). These measures can detect broad differences in self-regulation; however, considerable intra-individual changes in self-regulation occur over time. Consistent with neuroimaging studies showing decreased activity in certain regions of the brain (Heatherton, 2011), self-regulation can be viewed as a limited resource, which must be replenished following the exertion of self-control (Muraven and Baumeister, 2000). Consequently, self-report measures may be insensitive to measuring one's current capacity for self-regulation. Nonetheless, self-report measures have been used to predict academic grades, adjustment, alcohol abuse, and quality of relationships (Tangney, Baumeister, and Boone, 2004). A third method of measuring self-regulation involves observational ratings of behavior (Dembinski, 1979). Observational ratings provide several advantages over self-report measures including the elimination of self-report bias; however, they are more time-consuming to administer and require trained raters and a sampling design that captures representative behaviors.

Coping Strategies

Definition

Coping involves "the ways people actually respond to stress, such as through seeking help, rumination, problem solving, denial, or cognitive restructuring" (Skinner et al. , 2003, p. 216). A vast literature has been developed to identify the full range of coping strategies and to determine their effectiveness in handling stress. Much of this literature is based on the cognitive theories of stress and coping such as the Transactional Theory of Stress and Coping (Lazarus and Folkman, 1984). A major feature of this theory is that individuals make two types of decisions; first, they evaluate the relevance of the stressors to their lives (i.e., primary appraisal) and, second, they determine what can be done (i.e., secondary appraisal). This secondary appraisal occurs when a choice to use a particular coping strategy is made to deal with the stressor. For example, an

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[1] The Stroop task provides a list of color words to participants and requires that they to name the ink color of the word. This is a challenging task because the color words (e.g., red) can be different from the ink color (e.g., blue).

individual who receives constant criticism from a supervisor may attempt to decrease this perceived stress by working harder or longer hours to please the supervisor.

The specific coping strategy selected by individuals is influenced by many factors, including their environmental factors as well as their predisposition to use a specific strategy. For example, research has shown that individuals who are extroverted and conscientious are more likely to use problem-solving and cognitive restructuring coping strategies. In contrast, individuals high in neuroticism are more likely to use wishful thinking and withdrawal strategies (Connor-Smith and Flachsbart, 2007). These predispositions or tendencies to use a specific type of coping strategy are often referred to as coping styles or dispositional coping. Since coping styles tend to be more stable and relate to the use of specific strategies, they may not result in effective coping in all situations. Research, discussed below, highlights the potential value in remaining flexible when selecting a particular coping strategy.

Efforts over the past few decades have yielded the development of at least 100 assessments of coping styles and over 400 labels, prompting some confusion about the major categories of coping (Skinner et al., 2003). Although research has begun to clarify the structure of these coping strategies (Skinner et al., 2003), the broad distinctions used by others (e.g., Compas et al., 2001) that differentiate between problem-focused and emotion-focused coping and between approach/engagement and avoidance/disengagement strategies[2] provide the foundation for the following overview of research on coping. These forms of coping reflect individual differences in anticipation and reaction to stress (Roth and Cohen, 1986). More specifically, high levels of attention to the stressor and the use of such strategies as gathering information, planning, and active problem-solving characterize approach/engagement strategies. In contrast, avoidance/disengagement reflect such strategies as inattention, withdrawal, and distraction.

Supporting Research

In general, research indicates that problem-focused coping is adaptive whereas emotion-focused coping is largely ineffective and even maladaptive in responding to stress demands (cf., Gilbar, Ben-Zur, and Lubin, 2010). Although meta-analyses, and a few select studies described below, highlight and provide some support for this finding, the current consensus is that no single coping strategy is effective or ineffective in all situations. Nonetheless, efforts continue to identify the boundary conditions and contexts in which different coping strategies are effective.

In separate studies on stress in the military, emotion-focused coping was found to predict stress symptoms during survival training (Taylor et al., 2009) and distress and poor performance among soldiers performing an evacuation task (Gilbar, Ben-Zur, and Lubin, 2010). Similar results from a group of fire-service personnel show that avoidance coping was associated with

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[2] It should be noted that some researchers have argued that these broad categories oversimplify coping strategies (Carver, Scheier, and Weintraub, 1989), which may obscure important relationships between more specific coping strategies and mental health.

higher reports of PTSD symptoms (Beaton et al., 1999). Studies of Israeli soldiers reveal similar patterns, with fewer PTSD symptoms among those who used problem-focus coping strategies and more symptoms among those using emotion-focused coping (Solomon, Mikulincer, and Flum, 1988). Reviews of coping in children and adolescents have also concluded that problem-solving coping and engagement coping are generally associated with better psychological adjustment, whereas disengagement and emotion-focused strategies are mostly associated with poorer psychological adjustment (Compas et al., 2001). Avoidance coping was also found, in another meta-analysis, to relate to higher psychological distress, depression, and PTSD symptoms among individuals coping with traumatic events (Littleton et al., 2007).

However, not all studies have supported the detrimental effects of emotion-focused coping. For example, some research has found that the conceptualization and measurement of emotion-focused coping is often confounded and can lead to erroneous conclusions about any potential benefit of such coping strategies (Stanton et al., 1994). Furthermore, the type of stress (e.g., controllable versus uncontrollable) and the specific coping strategy used may be important factors affecting coping efficacy. In fact, the severity of combat exposure has been identified as a potentially important moderator of the relationship between emotion-focused coping and PTSD in national guard and reserve service members (Rodrigues and Renshaw, 2010). Specifically, emotion-focused coping was associated with higher levels of PTSD only when moderate levels of combat exposure were experienced. Furthermore, at very high levels of combat exposure, emotion-focused coping was associated with lower levels of PTSD. Other researchers criticizing the simple dichotomy between emotion and problem-focused coping have further discriminated among subtypes of emotion-focused coping. In one such study, Austenfeld and Stanton (2004) demonstrated that improved measures of emotion-focused coping, which capture acknowledging, understanding, and expressing emotion, are adaptive in certain contexts. Other distinctions among emotion-focused coping strategies have been made in an attempt to refine theoretical and empirical models specifying the coping-health relationship.

One particular type of emotion-regulation strategy—positive reappraisal—appears to be especially beneficial for dealing with stress. Cognitive reappraisal, more generally, involves changing the way that one views a situation to be more positive (John and Gross, 2004). More specifically, positive reappraisal is about looking on the bright side or finding the silver lining when in a stressful situation. In examining resilience to stress, research shows that positive reappraisal can be a useful strategy for coping with stress and has been associated with better psychological adjustment in children and adolescents (Compas et al., 2001). In reviewing a series of experimental and correlational studies, John and Gross (2004) provide support for positive reappraisal for both its short- and long-term benefits on emotion and psychological health. However, positive reappraisal may not be an important resource for all types of outcomes. In a meta-analysis on health outcomes, positive reappraisal was significantly related to psychological health but was not associated with physical health outcomes when coping with health-related stress (Penley, Tomaka, and Wiebe, 2002). Other coping strategies and the type of stress

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included in this study indicated that specific features related to the stressor and the type of health outcomes examined will affect the relative effectiveness of any particular coping strategy. This line of thinking is consistent with research encouraging the flexible application of coping (Cheng, 2001). That is, there are often multiple ways to cope effectively, and being flexible provides individuals with the resources necessary to adjust their strategy when responding to different stressors. In fact, recent research indicates that lower levels of coping flexibility are associated with greater levels of complicated grief for bereaved individuals (Burton et al., 2011).

It should be noted, however, that the relationship between coping and mental health is most likely bidirectional. That is, coping can directly affect mental health, but poor initial mental health contributes to the use of maladaptive coping strategies (Aldwin and Revenson, 1987).

Measurement

Coping strategies are generally assessed using self-report instruments. However, these assessments differ in their target population (e.g., children versus adults) and focus. For example, some scales attempt to measure coping for general stress and negative events, whereas others measure specific life domains (e.g., work) or such specific stressors as coping with cancer (Skinner et al., 2003). Although alternative options for assessing coping are available (e.g., interviews, observation), far fewer of these instruments have been developed and used.

Positive and Negative Affect

Definition

Affect generally refers to an individual's "subjective sense of positivity or negativity arising from an event" (Carver and Harmon-Jones, 2009, p. 183). In other words, affect reflects the feelings and emotions a person experiences in different situations. Positive affect is the extent that an individual "feels enthusiastic, active, and alert," whereas "negative affect is a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness" (Watson, Clark, and Tellegen, 1988, p. 1063). Although other models have been developed to categorize the different emotions (cf., Carver and Harmon-Jones, 2009), recent evidence from neuroscience suggests that different prefrontal regions of the brain are activated in the experience of positive and negative emotions (Cacioppo et al., 2007). Furthermore, individuals differ in their baseline levels of activation in these regions, suggesting a predisposition to experiencing positive or negative emotions.

Supporting Research

Although a large body of research has consistently demonstrated the adverse relations between negative affect and well-being, more recent research examining positive affect suggests

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that positive emotions can spark the generation of additional positive states, which enhance well-being (Fredrickson and Joiner, 2002). This upward spiral involves broadening attention, cognition, and problem-solving, which facilitates the coping process in stressful situations. Evidence for the benefits of positive affect, summarized in a recent review, suggest that positive affect is related to "confidence, optimism, and self-efficacy; likeability and positive construal of others; sociability, activity, and energy; prosocial behavior; immunity and physical well-being; effective coping with challenge and stress; and originality and flexibility" (Lyubomirsky, King, and Diener, 2005, p. 804). Other evidence indicates that individuals who demonstrate positive psychological and social functioning, termed flourishing (Keyes, 2002), have a mean ratio of positive to negative affect of 2.9 and higher (Fredrickson and Losada, 2005). Furthermore, it is expected that individuals above this threshold will also be resilient in the face of adversity. In stressful situations, people can experience a range of negative emotions including fear, anger, sadness, or disgust (Bovin and Marx, 2011). However, resilient individuals also draw on positive emotions when stressed to regulate emotions[3] and to find positive meaning in their personal problems (Tugade and Fredrickson, 2004). Furthermore, the sustainment of positive affect during tough times can be adaptive, serving as a buffer against depression, distress, and the physiological consequences of stress (Folkman and Moskowitz, 2000; Fredrickson et al., 2003). The overall positive findings for building on positive emotions was acknowledged in a recent review of potential interventions for active duty military personnel (Morgan and Bibb, 2011).

Measurement

Positive and negative affects are measured using self-report instruments. The most widely used of these instruments is the Positive and Negative Affect Schedules, simply referred to as the PANAS (Watson, Clark, and Tellegen, 1988). The PANAS includes two 10-item scales comprising 20 mood-related adjectives.

Perceived Control

Definition

Perceived control can be defined by the extent to which people feel a sense of control over events (i.e., locus of control [LOC]) as well as being the initiator of their own behavior. Other terms used to reflect perceived control include autonomy and self-mastery (Pearlin and Schooler, 1978). Rotter (1966) distinguishes between an internal LOC and an external LOC. Those with an internal LOC believe that they have control over the events in their lives, whereas, those with an external attribution believe that events are caused by others, chance, or fate.

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[3] Emotional intelligence may be an important ability in regulating emotions when under stress. It is discussed more in a later section on emerging constructs.

Supporting Research

LOC has been linked to a wide range of outcomes, largely indicating that an internal LOC is associated with positive benefits. For example, those with an internal LOC might believe that their performance evaluation scores were due to their own efforts. In contrast, individuals with an external LOC might believe that their performance evaluation scores were due to luck or to their assignment to a particular unit or supervisor, resulting in low expectations that increased efforts will lead to higher performance evaluation scores.

In two separate meta-analyses, an internal LOC was associated with several positive work outcomes, including positive task and social experiences and higher levels of motivation, satisfaction, and performance (Judge and Bono, 2001; Ng, Sorensen, and Eby, 2006). Other studies point to the risks of an external LOC, which include higher risk for depression and anxiety (Benassi, Sweeney, and Dufour, 1988; Johnson and Sarason, 1978). Furthermore, those with an external LOC tend to respond poorly to stress (Krause and Stryker, 1984) and demonstrate less happiness (Larson, 1989). Loss of perceived control has been shown to mediate the relationship between uncontrollable stress and substance abuse in adolescents (Newcomb and Harlow, 1986). In other words, uncontrollable stress is associated with reduced perceived control, which is ultimately related to increases in the risk for substance use.

LOC has also been linked to important outcomes in military populations. In a cross-sectional study examining PTSD, soldiers from the Lebanon war (1982) with less intense PTSD symptoms reported a more internal LOC, in addition to more perceived social support (Solomon, Mikulincer, and Avitzur, 1988). Longitudinal studies have also supported the importance of perceived control. In a study of perceived stress following a natural disaster, those individuals with an internal LOC perceived less stress and engaged in more task-focused coping behaviors (Anderson, 1977).

In addition to feeling a sense of control over events that occur in life, individuals also benefit from feeling a sense of control over their own behavior as opposed to being controlled and directed by others. Autonomy is a central component of theories of emotional well-being, and differences in perceived autonomy have been linked to both daily fluctuations in emotional well-being and to stable individual differences in well-being across people (Deci and Ryan, 1987; Reis et al., 2000). Furthermore, research shows that specific events and contexts, which support autonomy, are associated with a range of positive psychological states, including "more intrinsic motivation, greater interest, less pressure and tension, more creativity, more cognitive flexibility, better conceptual learning, a more positive emotional tone, higher self-esteem, more trust, greater persistence of behavior change, and better physical and psychology health" (Deci and Ryan, 1987, p. 1024).

Although a large body of research suggests that an internal LOC results in positive outcomes, there are risks when an individual with an internal LOC experiences negative events that are perceived to be stable. These attributional styles are discussed in the section on "Optimism,"

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below. To briefly summarize, research generally shows that an internal LOC and greater autonomy are associated with positive benefits, whereas an external LOC is associated with risks for a variety of adverse outcomes.

Measurement

LOC is measured using self-report instruments, with the original Rotter I-E scale being the most popular. Other scales have been developed to focus on specific contexts, including dental, general health, mental health, and work (Beck, 1980; Spector, 1988; Winefield, 1982; Wood and Letak, 1982).

Self-Efficacy

Definition

Another construct related to self-regulation and control is perceived self-efficacy, which is "concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). In other words, self-efficacy is the belief an individual can do something. These judgments, which influence choices and determine effort, are critical factors in how one might respond to a stressful situation. Specifically, those individuals low in perceived self-efficacy focus on their own deficiencies rather than on ways to succeed, which detracts attention from how to effectively respond to a stressful situation.

Supporting Research

Meta-analyses have shown that self-efficacy is positively associated with job performance and satisfaction (Judge and Bono, 2001; Stajkovic and Luthans, 1998) and academic performance and persistence (Multon, Brown, and Lent, 1991). More directly related to stress, self-efficacy has been incorporated into models of resilience (Rutter, 1985), which has been supported by subsequent research showing that individuals higher in self-efficacy experience less stress and autonomic arousal when attempting to solve challenging problems (Bandura et al., 1988). There is also evidence that perceived inefficacy induces stress, which may result in a poorly functioning immune system, whereas, the process of building efficacy to cope with a stressor enhances the immune system (Wiedenfeld et al., 1990). Perceived self-efficacy may also be an important resource when adapting or adjusting to change (Callan, Terry, and Schweitzer, 1994; Jones, 1986).

Measurement

Measuring self-efficacy is accomplished using self-report measures. Although some researchers have advocated for a generalized self-efficacy measure, many other researchers argue that self-efficacy is domain-specific. One might have high self-efficacy for school yet have

relatively low efficacy for sports. Because of the domain-specificity of self-efficacy, many measures have been developed and validated. To encourage valid assessments of self-efficacy, Bandura (2006) outlined several important features of self-efficacy scales. For example, scale items should use "can do" versus "will do," should focus on behaviors or tasks that people can control, and should represent varying levels of difficulty for performing.

Self-Esteem

Definition

Self-esteem, concerned with the global evaluation of one's self-worth, is an important marker for overall well-being and represents one of Maslow's higher-order needs (Maslow, 1943).

Supporting Research

Research has repeatedly shown that overall life satisfaction and subjective well-being is strongly correlated with satisfaction with self or self-esteem (cf., Diener, 2009). Self-esteem is also an important predictor of burnout (Alarcon, Eschleman, and Bowling, 2009). The importance of self-esteem has been further developed in two prominent theories: terror management theory (Pyszczynski et al. , 2004) and sociometer theory (Leary et al., 1995).

Terror management theory suggests that people pursue positive self-evaluations to protect themselves from anxiety related to feelings of threat, vulnerability, and an awareness of one's mortality. Evidence supporting terror management theory is provided by studies showing that self-esteem buffers against this anxiety (Greenberg et al., 1992). Sociometer theory, on the other hand, emphasizes that self-esteem is an important indicator that an individual is accepted by other people. Thus, self-esteem may, in part, reflect the nature of one's social relationships. Indeed, people with low self-esteem tend to report more negative interactions with others (Lakey, Tardiff, and Drew, 1994).

There are considerable individual differences in self-esteem, with males having slightly higher self-esteem than females (Kling et al., 1999). Although generally considered a stable trait, a person's evaluation of his or her overall worth or self-esteem may change in response to certain threats. Threats to self-image and self-adequacy occur regularly in everyday life. Such threats may involve receiving negative feedback about one's job, parenting style, body shape, or personal choices. However, most people demonstrate resilience by maintaining a positive self-image in the face of threats through a process of rationalization and self-justification (Steele, Spencer, and Lynch, 1993).

In a review of the benefits of self-esteem, Baumeister et al. (2003) conclude that self-esteem supports happiness and resilience but that the data are not sufficient to justify development of efforts simply to raise self-esteem. Not only is there a lack of evidence for developing such programs, but there may also be certain risks to such enhancements, as certain categories of high

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self-esteem (e.g., narcissism) can lead to a variety of such negative outcomes as increased bullying, aggressive retaliatory behavior, and prejudice. Despite these concerns, self-esteem is a strong indicator of well-being and may be used as one of several metrics in assessing psychological fitness.

Measurement

Self-esteem is assessed using self-report instruments. The most widely used instrument is the Rosenberg Self-Esteem Scale (Rosenberg, 1965), which consists of 10 items (e.g., On the whole, I am satisfied with myself) on a scale ranging from strongly disagree to strongly agree. The scale has been used in numerous studies and has received empirical support for both validity and reliability. Other versions assessing self-esteem, including a one-item scale (Robins, Hendin, and Trzesniewski, 2001), have been developed and validated.

Optimism

Definition

Dispositional optimism has been defined as the "generalized expectancy for positive outcomes" (Prati and Pietrantoni, 2009, p. 365). That is, optimists have a positive outlook on life and generally expect positive outcomes (Scheier and Carver, 1985). Because of the strong relationships with many health and psychology constructs, optimism has been strongly implicated in models of resilience (Connor and Davidson, 2003; Haglund et al., 2007; Johnson et al., 2011; Youssef and Luthans, 2007).

Supporting Research

In a recent meta-analysis, optimism was found to be significantly correlated with physical health outcomes (Rasmussen, Scheier, and Greenhouse, 2009). Furthermore, optimism significantly predicted both subjective and objective measures of physical health; however, it was more strongly correlated with subjective measures. Research also shows that these positive health benefits occur even when beliefs about the future are unrealistically optimistic (Taylor et al., 2000). In fact, such beliefs may be particularly important resources for protecting mental health during and following distressing events.

Research has shown very clear benefits of optimism on psychological health and well-being. In particular, research shows a very strong relationship to happiness (Baumeister et al., 2003). Additionally, in two separate meta-analyses, optimism was found to be a moderately important predictor of post-traumatic growth (Prati and Pietrantoni, 2009), increased use of approach coping strategies, and reduced use of avoidance coping strategies (Nes and Segerstrom, 2006). Coping strategies will be discussed in more detail in the next section.

Using a slightly different framework, Seligman (2002) incorporates optimism as part of an individual's explanatory style. A person's explanatory or attributional style describes how that person explains successes and failures in life. In addition to the internality/externality dimension discussed above with locus of control, explanatory styles also include the extent to which a person explains outcomes as caused by stable factors (e.g., low ability) or unstable factors (e.g., poor preparation) and whether the effects are specific to a situation (e.g., relationship with supervisor) or more global (e.g., relationship with authority). In general, the optimists are those who use internal, stable, and global causes to explain their successes. When optimists experience a failure or setback, they tend to believe that the events causing failure were specific to the situation and can change. Consequently, optimists still believe that success is possible.

At the other end of the continuum, pessimists are more likely to use internal, stable, and global causes to explain similar negative events. For example, a pessimist might think, "I'm just not smart enough" after failing a certification test. These internal, stable, and global explanations for bad events broadly affect an individual's feelings of helplessness (Peterson, 1991). Indeed, a meta-analysis has shown that this negative explanatory style is a very good predictor of depression (Sweeney, Anderson, and Bailey, 1986). Additional strong evidence has also been provided by a longitudinal study of men showing that internal, stable, and global explanations for bad events at age 25 were related to overall health in later life (Peterson, Seligman, and Vaillant, 1988). Furthermore, explanatory style predicted health from ages 45-60, even when controlling for initial physical and mental health. One possible explanation for the effects of explanatory style on health is provided by the diathesis-stress hypothesis. This model suggests that the risk of illness increases when people with a pessimistic explanatory style experience stress. Support for this model demonstrating an interaction between explanatory style and stress was provided in a longitudinal study showing that illness increased as stress increased for those with a pessimistic style but not for those with an optimistic explanatory style (Jackson, Sellers, and Peterson, 2002).

It should be noted that optimism may also present certain drawbacks and risks. For example, high levels of optimism may be maladaptive when facing persistent stressors. More specifically, optimism has been shown to negatively affect immune functioning when one is faced with persistent or uncontrollable stressors (Cohen et al., 1999; Sieber et al., 1992). One plausible explanation for these seemingly contradictory findings is that optimists continue to remain engaged and problem-solve even when the outcome cannot be controlled (Segerstrom, 2005). These results suggest that optimism may increase risks to health when certain types of stressors are faced. Nonetheless, the clear majority of research shows that optimism produce positive effects and pessimism yields negative outcomes.

Measurement

Optimism is measured using self-report instruments. The most widely used scale is the Life Orientation Test (LOT), which measures positive and negative life expectancies (Scheier and Carver, 1985). To further clarify the dimensionality of optimism and pessimism, Chang,

Maydeu-Olivares, and D'Zurilla (1997) integrated items from the LOT with the Optimism and Pessimism Scale (Dember and Brooks, 1989; Dember et al., 1989) to produce the Extended Life Orientation Test, which has also received empirical support. A person's explanatory style can also be measured using self-report instruments. The Attributional Style Questionnaire (Peterson et al., 1982), which presents a series of hypothetical events and asks participants to determine the cause, is perhaps the most widely used instrument.

Additional Psychological Resources—Emerging Constructs

Adaptability

Definition

Closely related to constructs of coping, adaptability involves how an individual or team adjusts in response to novel or changing environments. Adaptability is a broad resource, which can aid not only in responding to stress but also in adjusting to new life roles (e.g., parenting, marriage), work roles (e.g., promotion, deployment), and evolving job demands (e.g., technology, new supervisor). Because life in general can be unpredictable, adaptability is a particularly important skill to develop. Building adaptability may also function to support the development of other more specific resilience resources.

Supporting Research

Although few explicit links to resilience have been made, adaptability has been studied in a variety of related contexts, such as decisionmaking (LePine, Colquitt, and Erez, 2000), individual performance (Chen, Thomas, and Wallace, 2005), and team performance (Rosen et al., 2011).

Despite having intuitive importance, adaptability and related constructs have not yet been clearly defined and measured. Until such issues have been addressed, efforts to promote and teach these skills can be difficult (Pulakos et al., 2000).

Measurement

Some measures such as the EQ-I (Emotional Quotient Inventory) (Bar-On, 2004) contain specific subscales for adaptability in their self-report measures. In an attempt to directly measure adaptability as a broad psychological construct, Pulakos et al. (2000) identified eight adaptive performance dimensions: (1) handling emergencies, (2) handling work stress, (3) solving problems creatively, (4) dealing with uncertain situations, (5) learning, (6) interpersonal adaptability, (7) cultural adaptability, and (8) physically oriented adaptability. Using military

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populations in part, these efforts led to the development and validation of the Job Adaptability Inventory (JAI).[4]

Self-Awareness

Definition

Military personnel often refer to self-awareness, or the historical maxim, "Know Thyself" proffered by Plato and Socrates, simply as the "Gut Check." Several other constructs related to self-awareness include self-knowledge, self-monitoring, introspection, meta-cognition, and meta-perception. Self-awareness may be one of several characteristics of emotional intelligence. In fact, the EQ-I refers to self-awareness as one core component of important intrapersonal skills.

Supporting Research

Self-awareness is also an important element of negative feedback models (Scheier and Carver, 1985). At a basic level, these models suggest that individuals first recognize that a discrepancy exists between actual and desired states. Following awareness of this discrepancy, goal-directed activity is triggered to restore homeostasis. For example, a supervisor responding to a crisis may recognize increasing difficulty in concentrating on key tasks. This recognition may trigger a number of coping strategies such as taking a deep breath, prioritizing tasks, and delegating appropriate tasks to team members.

Hippe (2004) further argues that self-awareness of one's strengths and weaknesses is a precursor to building resilience. Taking a similar position, Locke (2005) asserts that self-monitoring through introspection is a process important to both self-esteem and mental health. These arguments have been supported empirically by showing that self-awareness is a critical protective factor for anxiety and depression (Morrison and Cosden, 1997).

Measurement

Self-awareness and related constructs are typically assessed using self-report methods. Some of these scales, such as the private self-consciousness scale (PSCS) (Fenigstein, Scheier, and Buss, 1975), have been validated and used extensively in a variety of contexts. However, as noted by Trapnell and Campbell (1999), the PSCS has received considerable criticism, often regarding its underlying factor structure. Additional concerns reflect the direction of relationships between the PSCS and psychological distress. Specifically, higher scores on PSCS, which indicate higher levels of self-awareness, have been related to more psychological distress, not better psychological well-being. This apparent paradox resulted in the distinction between two types of self-awareness: (1) reflection, which involves "self-attentiveness motivated by curiosity . . . in the self" and (2) rumination, which involves "self-attentiveness motivated by perceived threats, losses, or injustices to the self" (Trapnell and Campbell, 1999, p. 297). This

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[4] The JAI is a proprietary instrument of Personnel Decisions Research Institute.

distinction is an important one when encouraging self-awareness, as rumination may be more maladaptive, whereas reflection promotes psychological adjustment.

Mindfulness

Definition

A closely related concept to self-awareness, self-regulation, and emotional intelligence, mindfulness has gained considerable traction within the military. Mindfulness "is most commonly defined as the state of being attentive to and aware of what is taking place in the present" (Brown and Ryan, 2003, p. 822) and can be considered an important element of both psychological and spiritual fitness (Bates et al., 2010; Hufford, Fritts, and Rhodes, 2010). Mindfulness is derived from Buddhist meditation and aims to cultivate awareness and attention of the present moment (Kabat-Zinn, 2003). Additionally, it is believed the mindfulness can promote self-regulation and help individuals avoid engaging in automatic behaviors and thoughts, which may be maladaptive (Brown and Ryan, 2003).

Supporting Research

Although much of the research on mindfulness is focused on clinical applications, emerging research is identifying the potential role of mindfulness in aiding decisionmaking. For example, research has shown that mindfulness may have a significant role in adaptive decisionmaking for individuals who take risks (Lakey et al., 2007). Specifically, individuals with higher levels of mindfulness may be less overconfident when taking risks. Research has also shown that mindfulness is related to well-being, and interventions to increase mindfulness can reduce mood disturbance and stress in cancer patients (Brown and Ryan, 2003). One particular intervention— mindfulness-based stress reduction (MBSR)—includes teaching formal meditation techniques with an emphasis on daily practice. This intervention was originally designed to target individuals with physical and psychological problems but has more recently been expanded to healthy adults experiencing stress (Brown, Ryan, and Creswell, 2007). MBSR has received empirical support from a meta-analysis showing moderate improvement in both physical and mental health among a diverse group of participants (Grossman et al., 2004). Other studies on MBSR are presented in the next chapter.

Measurement

Mindfulness is measured using self-report scales, with the Mindful Attention Awareness Scale (Brown and Ryan, 2003) and the Freiburg Mindfulness Inventory (Walach et al., 2006) being two of the more common measures.

Emotional Intelligence

Despite the broad appeal of the term emotional intelligence, considerable controversy remains over the concept, definitions, and measurement (e.g., Locke, 2005). Two types of

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measurement approaches have been developed to assess emotional intelligence. The first approach adopts the perspective that emotional intelligence is an ability. That is, emotional intelligence is "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990, p. 189). The second perspective, termed the trait approach, argues that emotional intelligence is reflected in specific patterns of personality, such as adaptability, self-awareness, and stress management. Although the construct validity of the trait approach has been heavily criticized (Mayer, Salovey, and Caruso, 2008), two separate meta-analyses indicate that the trait approach yields stronger relationships with health criteria, including physical and mental health (Martins, Ramalho, and Morin, 2010; Schutte et al., 2007).

Summary

This chapter reviewed psychological constructs related to overall health, well-being, and resilience. These constructs constitute antecedents or factors that provide the foundation for psychological fitness. In general these factors cluster in three domains: cognitive, affective, and self-regulatory. Cognitive factors include self-efficacy self-esteem, which reflect an individual's thoughts about his or her abilities. Cognitive factors also include the ways in which people view or interpret the situations in their lives (e.g., optimism, perceived control). Such constructs as positive and negative affect measure an individual's experience of positive emotions. Self-regulation and control are often reflected in an individual's coping strategy. Measurement of all of these psychological constructs tends to occur via self-report survey or questionnaire. In the next chapter, specific interventions to promote psychological fitness through these constructs are discussed.