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The Predictive Utility of Mindfulness, Experiential Avoidance, and Values-Based Action for Well-Being in College Students

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THE PREDICTIVE UTILITY OF MINDFULNESS, EXPERIENTIAL AVOIDANCE,

AND VALUES-BASED ACTION FOR WELL-BEING IN COLLEGE STUDENTS

by

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Abstract

Karakashian, Michael Antranig. Ph.D. The University of Memphis. August/2011. The predictive utility of mindfulness, experiential avoidance, and values-based action for well-being in college students. Major Professor: Sara K. Bridges

College can be a trying time and research suggests that college student positive and negative outcomes are broadly influenced by their well-being. Well-being is a broad construct that can be defined in terms of theoretically and subjectively derived components characterized by hedonic (i.e., happiness and affect) and eudaimonic (i.e., a sense of personal congruence in life) concepts. Research suggests that mindfulness, experiential avoidance, and values-based action, three theoretically important variables in Acceptance and Commitment Therapy (ACT), may be used as significant indicators of college student well-being. The purpose of this study was to examine the impact of college student mindfulness, experiential avoidance, and values-based action on hedonic and eudaimonic forms of well-being after accounting for a measure of social desirability and a strong predictor of well-being, namely the Big Five personality factors conscientiousness, neuroticism, extraversion, openness, and agreeableness. This study collected and analyzed responses from 174 college students using hierarchical regression procedures. Results indicated that students with higher hedonic well-being had lower experiential avoidance and neuroticism. Further, higher student eudaimonic well-being was predicted by lower experiential avoidance and neuroticism, as well as by higher mindfulness, conscientiousness, and extraversion. Additionally, post-hoc hierarchical regression analyses examining components of hedonic well-being revealed that students with high positive affect had high mindfulness, and that students with high life satisfaction had high values-based action. The implications for how these results may

impact and inform college students, researchers, mental health professionals, and counseling psychologists are provided.

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Chapter 1

Introduction

Higher levels of personal well-being have been positively associated with a number of life areas over the last 30 years including interpersonal relationships (Lyubomirsky, King, & Diener, 2005; Mastekassa, 1992), work (Burger & Caldwell, 2000; Staw, Sutton, & Pelled, 1994; Wright & Bonett, 2007), physical health (Howell, Kern, & Lyubomirsky, 2007; Spiegel, Kraemer, Bloom, & Gottheil, 1989) and psychological health (Howell et al., 2007; Lyubomirsky et al., 2005; Ryff & Singer, 1998; Steptoe, O'Donnell, Marmot, & Wardle, 2008). Well-being is particularly relevant to college students because research suggests that students with higher well-being have better outcomes in relationships (Berry & Hansen, 1996; Burger & Caldwell, 2000; Cunningham, 1988; Lyubomirsky et al., 2005), and perform better on variables associated with improved college performance, such as flexible thinking, originality (Lyubomirsky et al., 2005) and engagement in pursuits that give them a "boost" throughout the semester (Sheldon & Lyubomirsky, 2006, p. 66), likelihood of graduation (Frisch et al., 2005), and post-graduation employment (Burger & Caldwell, 2000). In addition, college students have been found to be at risk for having lower levels of well-being than those in the general population (e.g., Adlaf, Gliksman, Demers, & Newton-Taylor, 2001; Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Roberts, Golding, Towell, & Weinreb, 1999; Stewart-Brown, et al., 2000), and at higher risk for stress and other psychological problems, including smoking, unhealthy eating, and alcohol use (Adlaf et al., 2001; Gores, 2008; Ham & Hope, 2003; Magid et al., 2009; Nelson, Gortmaker, Subramanian, Cheung, & Wechsler, 2007; Pritchard, Wilson, & Yamnitz,

2007); problems that may be attenuated by increased well-being (Lyubomirsky et al., 2005) and through interventions designed to enhance well-being (Sin & Lyubomirsky, 2009). A large body of research exists on predictors of well-being in general, however research specifically focusing on college student well-being has examined a variety of areas including personality (e.g., Chen, Cheung, Bond, & Leung, 2006; Diener & Seligman 2002; Utsey, Hook, Fischer, & Belvet, 2008), depression and anxiety (e.g., Schmuck, Kasser, & Ryan, 2000), stress (Bopaiya & Prasad, 2004; Gavala & Flett, 2005) social support (Diener & Seligman, 2002; Quimby & O'Brien, 2006), goal-motive congruence (Brunstein, Schultheiss, & Grassman, 1998), and coping (Matheny, Roque-Tovar, & Curlette, 2008). In recent years, literature regarding Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) has burgeoned. ACT supports concepts and variables that appear to be relevant to well-being. However, little is known about how key variables of ACT relate to well-being in college students and thus, the following study will seek to shed light on this topic.

Recently, an expanding body of research has investigated well-being in relation to theoretically important variables associated with Acceptance and Commitment Therapy including mindfulness and experiential avoidance. A related ACT variable, values-based action has yet to be examined with mindfulness and experiential avoidance in relation to well-being, yet it appears to have a connection with depression (e.g., McCracken & Yang, 2006), a strong inverse correlate of well-being (e.g., Ryff, 1989). The theoretical rationale for conducting an investigation into the relationship between mindfulness, experiential avoidance, values-based action and well-being in college students can be found in the theory behind ACT. This theory argues that human suffering is an inherent

part of being human because it is directly tied to essential processes (e.g., language and relational learning; see Hayes et al., 1999 for discussion) and that experiential avoidance exacerbates this suffering. Hayes and colleagues (1999) suggest that human associative learning processes become problematic because we equate seemingly unrelated variables with painful situations. Mundane variables become reminders of old hurts, which themselves then become painful. Experiential avoidance occurs when an individual tries to diminish suffering through avoiding unpleasant internal or external stimuli. The process of relational learning paradoxically creates more painful experiences and more avoidance so that an individual can spend increasing amounts of time and energy avoiding suffering (Hayes et al., 1999). Experiential avoidance is observed to be present across multiple mental health diagnostic categories and considered to be a fundamental diathesis (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996), antithetical to well-being. Conversely, mindfulness is hypothesized to help facilitate acceptance of suffering, thereby diminishing experiential avoidance and promoting well-being. In addition to mindfulness, enhancement of well-being is hypothesized to occur through engaging in behaviors congruent with deeply held values. Furthermore, values-based action is possible when humans accept that suffering exists and attempt to live meaningful lives consistent with core values. Well-being is thought to be more likely when values-based action exists (Hayes et al., 1999).

In non-college samples, mindfulness and experiential avoidance have been shown to predict well-being (Jacob & Brinkerhoff, 1999; Kortte, Veiel, Batten, & Wegener, 2009), and while never investigated in relation to well-being, values-based action has been linked to conceptually similar variables such as health related-functioning

(McCracken & Yang, 2008) and inverse correlates of well-being, such as depression (McCracken & Vowles, 2008; McCracken & Yang, 2006), and anxiety (McCracken & Keogh, 2009; Vowles & McCracken, 2008). Further, ACT interventions have been shown to be effective for a variety of groups including inpatients with mental health difficulties (e.g., Bach & Hayes, 2002; Guadiano & Herbert, 2006), inpatients with physical difficulties (e.g., Lundgren, Dahl, & Hayes, 2008; Vowles & McCracken, 2008), community members (Hernandez-Lopez, Luciano, Bricker, Roales-Nieto, & Montesinos, 2009) and college students (Forman, Herbert, Moitra, Yeomans, & Gellar, 2007; Masuda et al., 2007; Zettle, 2003).

Moreover, student developmental theory suggests that processes similar to mindfulness, experiential avoidance, and values-based action have considerable implications for college student development and subsequent well-being. For example, Taylor's (2008) synthesis of a variety of student developmental theories notes that identity development and personal growth are important developmental tasks for college students and mindfulness, thought to promote self-understanding, self-awareness, and personal growth (Kabat-Zinn, 2003), may help to facilitate these tasks (Chickering & Reisser, 1993; Taylor, 2008). In contrast, experiential avoidance may serve to hinder experiencing elements thought to be growth producing in college students, such as a willingness to step outside one's comfort zone, persistence despite challenges, and self-confidence resulting from tolerating discomfort and meeting challenges (Taylor, 2008). In addition, values-based action might help to create personal growth, self-confidence, autonomy, and personal integrity, also thought to be important for college student development (Chickering & Reisser, 1993; Taylor, 2008), through pursuing activities that

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are congruent with newly discovered beliefs. As a student begins to discover the beliefs he or she holds most dear, a greater sense of personal identity and autonomy from others could take place, and as congruency between beliefs and action begins, self-confidence and development of personal integrity might become more possible.

Finally, a number of studies have shown that college student well-being is predicted by mindfulness (e.g., Baer et al., 2008; Brown & Ryan, 2003) and experiential avoidance (Kashdan, Barrios, Forsyth, & Steger, 2006; Kashdan & Breen, 2007) across several studies. More specifically, multiple studies of mindfulness and well-being exist and most show a positive relationship between mindfulness and well-being in college students, yet some studies show that certain components of well-being (e.g., affect; Brown & Ryan, 2003) are not predicted by mindfulness, and more research is needed to help clarify these results. With regard to experiential avoidance, although only a few studies have examined the relationship with well-being in college students, all results have shown the expected negative predictive relationship. In addition, the majority of the studies on well-being and the aforementioned variables use measures with some variation of either the hedonic (i.e., life satisfaction and affect) or eudaimonic (e.g., self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth) conceptions of well-being, but rarely incorporate both hedonic and eudaimonic measures, making generalization of these findings to more comprehensive conceptualizations of well-being somewhat limited. Lastly, no research to date has examined values-based action in relation to college students or their well-being. Only correlates of well-being, such as depression (e.g., Vowles & McCracken, 2008), have been examined and results of these studies have shown, as expected, a

negative predictive relationship between values-based action and depression, suggesting a positive relationship with well-being may exist.

Despite the relevance of mindfulness, experiential avoidance, values-based action and well-being for college students, these processes have never been examined together in this population. Further, it is not known whether mindfulness, experiential avoidance, and values-based action are predictive of college student well-being over and above the effects of personality. Therefore, the current research will seek to determine the predictive utility of mindfulness, experiential avoidance and values-based action for college student well-being over and above the effects of personality. It is believed that this research will prove useful for understanding college student well-being and inform the development of interventions that may work to enhance well-being in college students through ACT or its individual components.

Well-Being

Well-being is a widely used outcome measure best represented as a multidimensional construct incorporating the two major theoretical and empirical conceptions described in the literature, namely, hedonic well-being and eudaimonic well-being (Keyes, 2005; Ryan & Deci, 2001; Waterman, 2007; see also Diener, 1984 and Ryff, 1989). Hedonic well-being is defined as the presence of pleasure and the absence of pain (Ryan & Deci, 2001) and is most accurately assessed by measuring a person's ratings of life satisfaction as well as positive affect (PA) and negative affect (NA) (Diener, Suh, Lucas, & Smith, 1999). Eudaimonic well-being is defined most succinctly by Waterman (2007) as the positive psychological outcome of living in accordance with one's true self (e.g., one's virtue, or excellence). The most widely used and accepted

assessment of eudaimonic well-being was developed by Ryff (1989) and measures six theoretically-based facets; self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Most research examining well-being as an outcome variable have measured it from either the hedonic or eudaimonic perspectives (see Diener, 1984; Ryan & Deci, 2001; Ryff, 1989). However, researchers are increasingly recognizing the necessity of incorporating both hedonic (e.g., PA, NA, and life satisfaction) and eudaimonic (e.g., Ryff's scales of well-being) measures to adequately capture the construct of well-being (see Keyes, 2005; Keyes, Shmotkin, & Ryff, 2002; Ryan & Deci, 2001; Waterman, 2007). Following the model used by Keyes et al. (2002) and in accordance with the literature, the current study will incorporate both the hedonic and eudaimonic perspectives into the measurement of well-being in order to gain a comprehensive picture of college student well-being. The following paragraphs often describe studies examining hedonic, and eudaimonic perspectives, as well as those examining both using the generic term, *well-being*. Mirroring the extant literature, as a general rule, studies investigating hedonic well-being are more heavily represented than those researching eudaimonic well-being. Further, studies using both hedonic and eudaimonic well-being are least common and therefore, least represented.

Vastly different variables have been reported as correlates or predictors of well-being ranging from personality traits such as emotional intelligence (Diener et al., 1999; Gannon & Ranzijn, 2005), to situational influences such as cultural family environment (Bopaiya & Prasad, 2004), and biological factors such as genetics (Lykken & Tellegen, 1996). Meta-analytic studies reveal that personality factors rather than situational

variables account for the largest amount of variance in well-being (Diener et al., 1999).

The Big Five personality traits extraversion, neuroticism, conscientiousness, agreeableness, and openness have been found to be predictors of well-being across a number of populations (Diener et al., 1999; Ryan & Deci, 2001). Extraversion and neuroticism have been cited among the strongest predictors of well-being; while conscientiousness and agreeableness have, to a lesser extent, also proved prominent predictors of well-being (Ryan & Deci, 2001). Finally, openness appears to be the least predictive of well-being out of the five factors, yet studies still show its significant relationship with well-being (e.g., Schmutte & Ryff, 1997).

For example, DeNeve and Cooper (1998) reported that extraversion, and agreeableness have consistently positively predicted hedonic well-being, while neuroticism has been a consistent inverse correlate. Further, Keyes et al (2002) found that well-being (both hedonic and eudaimonic) was highest when individuals had higher extraversion, and conscientiousness, as well as lower neuroticism in a non-college sample. Diener and Seligman (2002) found that college students with the highest hedonic well-being had low neuroticism and higher extraversion and agreeableness. Students with the lowest well-being had the lowest levels of conscientiousness in addition to high neuroticism and lower extraversion and agreeableness. Diener and Lucas (1999) also found that extraversion (positive) and neuroticism (negative) were strongly correlated with aspects of college student well-being (i.e., PA and NA). In Chinese college students variables similar to conscientiousness, and agreeableness positively predicted well-being (i.e., hedonic), while neuroticism was negatively predictive (Chen et al., 2006). Though

results are at times different among the individual factors, Big Five personality inventories are generally consistent and strong predictors of well-being.

In addition to personality factors, research has also demonstrated the relationship between the ACT components of mindfulness and experiential avoidance in college student well-being. For example, Brown, Kasser, Ryan, Linley, and Orzech (2009) used mindfulness to positively predict the well-being of British college students. Weinstein, Brown, and Ryan (2009) replicated and extended this finding, showing that mindfulness predicted college student well-being after controlling for the personality variables of optimism and neuroticism. The above studies examined hedonic well-being, but mindfulness has also shown predictive utility for eudaimonic well-being as well (Baer et al., 2008; Brown & Ryan, 2003; Howell et al., 2008; Weinstein, Brown, & Ryan, 2009).

Though limited research examining college student well-being and experiential avoidance exists, the evidence is promising. For example, Kashdan and colleagues (2006) found that the negative relationship between well-being and psychological distress was significantly mediated by experiential avoidance. In a second mediation study, the authors again found that experiential avoidance significantly accounted for the inverse relationship between well-being (i.e., both hedonic and eudaimonic) and another indicator of poor psychological outcome, namely materialism (Kashdan & Breen, 2007).

While these studies have produced significant findings pertaining to well-being in college students a third theoretically relevant variable has yet to be integrated into the literature. The existing research does not account for the ACT component values-based action. As such, additional research is needed to evaluate well-being in a college population using these three theoretical ACT components.

Mindfulness

Mindfulness is thought to be a complex multidimensional construct (Baer, Smith, Hopkins, Krietmeyer, & Toney, 2006) that is generally defined as the present-moment awareness of one's experience marked by attention that is curious, accepting, and non-judging (Leary & Tate, 2007). Though mindfulness is often associated with Buddhist meditation practice (Bishop et al., 2004), researchers argue that mindfulness is a naturally occurring trait as well as a state (Brown & Ryan, 2003), "an inherent human capacity," and that "we are all mindful to one degree or another, moment by moment" (Kabat-Zinn, 2003, pp. 145-146).

Though at times mixed results have been found in relation to well-being components such as positive affect (PA) and negative affect (NA), the existing research on dispositional mindfulness has commonly found it to be predictive of general college student well-being. Mixed findings include Brown and Ryan (2003), who reported that mindfulness negatively predicted NA, but did not predict PA, suggesting that mindfulness may promote calmness and adaptive functioning but doesn't necessarily lead to happier mood (Brown & Ryan, 2003). This finding was replicated with British students when mindfulness training was given to increase trait mindfulness and to determine predictive utility for well-being (Collard, Avny, & Boniwell, 2008). Though mindfulness training decreased NA and produced a significant trend in life satisfaction increase, PA was not increased. Conversely, there have been studies showing dispositional mindfulness to be predictive of well-being (Brown et al., 2009; Weinstein et al., 2009) even beyond the effects of personality traits associated with well-being (Weinstein et al., 2009). The mixed results between mindfulness and PA were clarified in

a meta-analysis examining the PA, NA, mindfulness relationship in 15 studies and found that NA (negatively) and PA (positively) were both significantly related to mindfulness (Giluk, 2009). Finally, Baer and colleagues (2008) used mindfulness to predict college student eudaimonic well-being using Ryff's (1989) scales and mindfulness accounted for significant variance in all subscales of the well-being measure relationship.

Beyond empirical research findings it conceptually makes sense that mindfulness would be related to college student well-being. Mindfulness has been described as a treatment for the fundamental "dis-ease" of human beings, with the potential for leading to happiness and the alleviation of suffering (Kabatt-Zinn, 2003, p. 145), self-acceptance, environmental mastery, purpose in life, and personal growth, all essential components of Ryff's (1989) conception of eudaimonic well-being (Baer et al., 2008; Brown & Ryan, 2003; Kabat-Zinn, 2003).

Mindfulness can be more specifically related to college students when examining Taylor's (2008) synthesis of a variety of developmental theories and models for young adults. She notes that it is necessary for college students to develop a strong internal sense of self so that they can become "authors" of their own lives and critically evaluate important life decisions (p. 225). An individual with a mindful disposition turns his or her attention inward in an attempt to observe their processes and patterns without evaluations or judgments (Brown & Ryan, 2003). This process may help college students develop a stronger self-identity by increasing self-awareness in the here-and-now. Critical evaluation skills, suggestive of college student development (Taylor, 2008), could also be cultivated through the non-judgmental self-observation inherent in mindfulness. Thus mindfulness is potentially relevant for the developmental realities and challenges of

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college students. Thus, a multidimensional conception of dispositional mindfulness is of interest to the current study of college student well-being.

Additional mindfulness research contributes to the understanding of this relatively unknown variable and though the relationship between mindfulness and college student well-being appears promising, additional research is needed to clarify its potential utility for this population. Further, mindfulness has never been combined with other ACT variables, such as experiential avoidance and values-based action in a college population, and more research is needed to determine its importance for college student well-being in relation to these theoretically related constructs.

Experiential Avoidance

Experiential Avoidance, a relatively new construct, is a process that occurs when a person is unable or unwilling to stay in contact with private events (i.e. thoughts, emotions, bodily sensations, memories, images and behavioral dispositions) and takes steps to alter the form, frequency or situations that elicit these experiences even when this struggle causes harm (Hayes et al., 1996, p. 1154). Simply put, experiential avoidance is a process used by human beings in an attempt to escape from the experience of the self (Kashdan & Breen, 2007). It is hypothesized that experiential avoidance is a key toxic process that converts normal intrapsychic phenomenon into disorder (Hayes, 2004; Hayes et al., 1996; Hayes, Follette, & Linehan, 2004). Given the potential to lead to psychological disorder, it is reasonable to postulate that experiential avoidance is also related to and detrimental for positive psychological variables such as well-being and indeed research supports this position. Kortte et al. (2009) found that well-being (i.e. hedonic well-being) was significantly negatively predicted by experiential avoidance in

medical rehabilitation patients in an initial assessment and a three-month follow-up. Further, experiential avoidance may be particularly significant for college student well-being. Taylor (2008) notes that college students are in a crucial period of development for defining themselves and differentiating from others and the world in general. Engaging in avoidance is thought to inhibit positive development and personal growth (Taylor, 2008), components of Ryff's (1989) conception of well-being. In support of this position, Kashdan et al. (2006) found that numerous indicators of well-being in college students were negatively related to experiential avoidance over a 21-day monitoring period. Kashdan and Breen (2007) also found that experiential avoidance was predictive of college student well-being (both hedonic and eudaimonic). Both of these studies used experiential avoidance as a mediator between indicators of psychological distress and well-being, further supporting the hypothesis that experiential avoidance is directly related to diminished well-being in college students (Kashdan et al., 2006; Kashdan & Breen, 2007). Despite these two studies, the research on experiential avoidance as it relates to college students is limited and further research is indicated. Further, examining experiential avoidance with other theoretically related variables (i.e., mindfulness and values-based action) will help to specify its relationship with college student well-being.

Values-Based Action

Hayes, Luoma, Bond, Masuda, and Lillis (2006) define values-based action as "chosen qualities of purposive action that can never be obtained as an object but can be instantiated moment by moment" (p. 9). That is, values-based actions are behaviors that are congruent with deeply held personal values and can be lived throughout one's life. Values-based actions have been described as "guides for action" that "help the individual

to live their life according to what they care about most deeply" (Hayes et al., 1999; McCracken & Yang, 2006, p. 138; Wilson & Murrell, 2004). Several authors suggest that values-based action is beneficial for well-being. For example, Rogers (1964) hypothesizes that values congruent living is an indicator of positive psychological functioning across the lifespan. Ryff (1989) and Ryan and Deci (2001) also suggest that living one's life in congruence with deeply held values is indicative of well-being. In college students specifically, Taylor (2008) notes that developing values and being true to them promotes personal growth and autonomy, both indicators of Ryff's (1989) conception of well-being. In addition, Chickering and Reisser (1993) suggest that value-behavior congruency is a key developmental task for promoting personal growth and autonomy for college students.

Despite the conceptual links between values-based action and college student well-being, no quantitative research exists on college student values-based action or values-based action and well-being. The most relevant values-based action research has only been conducted using non-college student samples, with outcome variables indicative of psychological distress (i.e., depression). Yet, distress indicators such as depression while of great consequence are not representative of well-being. However, depression is highly correlated with component aspects of well-being (Kashdan & Breen, 2007; Ryff, 1989; Ryff & Keyes, 1995) and can shed light on the possible relationship between values-based action and well-being. McCracken and Vowles (2008) found that values-based action negatively predicted 36% of the variance in depression scores. McCracken and Yang (2006) also reported similar findings with values-based action negatively predicting 33% of the variance in depression. A third study showed that

values-based action negatively predicted 21% of the variance of depression when trait

mindfulness and experiential avoidance were included as predictors in the model

(McCracken & Keogh, 2009). Though no empirical research exists on the relationship

between values-based action and college student well-being, related studies and theory

suggest a positive relationship. Thus, research is needed to clarify the relationship

between values-based action and college student well-being.

Purpose of the Study

The current literature suggests that college students are at higher risk for increased

distress and decreased hedonic and eudaimonic well-being than non-college students

(e.g., Adlaf et al., 2001; Cooke et al., 2006; Pritchard et al., 2007) and that improvements

in well-being are beneficial for college students across a variety of outcome variables

(e.g., Burger & Caldwell, 2000; Lyubomirsky et al., 2005; Sheldon & Lyobomirsky,

2006; Stevic & Ward, 2008). Further, with the utility of positive psychological

interventions aimed at increasing well-being established (i.e., Seligman, 2008; Sin &

Lyubomirsky, 2009) it becomes useful to research constructs that may serve to inform

interventions to increase well-being in college students from a hedonic and eudaimonic

perspective. Research suggests that mindfulness, experiential avoidance, and values-

based action, theoretically important variables in ACT, represent three promising

constructs for influencing college student well-being. However, more research is needed

to clarify the relationship between these three variables and college student well-being.

Further, because the Big Five personality factors have been found to be consistently

predictive variables of well-being across different groups (e.g., DeNeve & Cooper, 1998;

Diener et al., 1999) the Big Five factors conscientiousness, agreeableness, extraversion, neuroticism and openness are used as a control variable in the present study.

Thus, the present study examined the utility of the aforementioned variables, mindfulness, experiential avoidance, and values-based action for predicting college student hedonic and eudaimonic well-being after controlling for the effects of Big Five personality variables. The goal of this study was to further understand how these variables interact with each other in relation to student well-being beyond the effects of Big Five personality variables and how they may help college students improve their well-being through intervention. This study also built on previous research by providing empirical data on the relationship between values-based action and college student well-being as well as by assessing a holistic conception of well-being. Based on the rationale provided above, the following research questions and hypotheses were generated:

1. After controlling for the Big Five personality variables conscientiousness, extraversion, agreeableness, openness, and neuroticism how much variance in hedonic well-being (represented by a composite score of life satisfaction, negative affect, and positive affect; Diener et al., 1999; Sheldon & Elliot, 1999) is explained by the combination of mindfulness, experiential avoidance, and values-based action among college students? Hypothesis 1: Higher degrees of mindfulness, experiential avoidance and values-based action will account for a significant amount of variance ($p < .05$) in hedonic well-being over and above personality variables in college students.

2. After controlling for personality variables how much variance in eudaimonic well-being is explained by the combination of mindfulness, experiential avoidance, and values-based action among college students? Hypothesis 2: Higher degrees of

mindfulness, experiential avoidance and values-based action will account for a significant

amount of variance ($p < .05$) in eudaimonic well-being over and above the Big Five

personality variables in college students.

Chapter 2

Literature Review

Overview

In this chapter the literature on well-being and the core variables of ACT will be reviewed. Well-being is particularly relevant to a college population because higher levels of well-being have been shown to produce positive outcomes in a variety of areas (Diener & Seligman, 2002; Howell, 2009; Lyubomirsky et al., 2005; Lyubomirsky & Tucker, 1998; Nave, Sherman, & Funder, 2008) and may contribute to the optimal functioning of college students (Stevic & Ward, 2008), while research has also found that college students are at risk for decreased well-being and increased psychological distress (Adlaf et al., 2001; Cooke, et al., 2006; Pritchard et al., 2007). For example, Pritchard and colleagues (2007) found that physical ailments, negative drinking behaviors, and negative mood were more prevalent at the end of the first year of college when compared to prior matriculation in a sample of 525 U.S. students, while Kadison and DiGeronimo (2004) argue that U.S. college students are overwhelmed and at increased risk for mental health difficulties. With regard to the benefits of well-being, Nave and colleagues (2008) found that college students who reported an overall sense of positive well-being were more psychologically well-adjusted, had better social reputations, and tended to demonstrate more socially adaptive behaviors across self, observer, and clinician ratings in 100 males and 96 females (Nave et al., 2008). Howell (2009) found that students high in ratings of hedonic, and eudaimonic, well-being attained the highest levels of "adaptive academic functioning" (p. 8) when compared to those considered moderately mentally healthy. Moderately mentally healthy students, in turn, had higher levels of adaptive

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academic functioning than students with the lowest levels of well-being (classified as languishing). More specifically, students with high adaptive academic functioning were defined by low levels of procrastination, high self-control, and high self-reported grades (Howell, 2009).

Attending to ways of increasing well-being in college students may be useful for clinical researchers in need of target variables with the potential to increase well-being in this population. As such, it is necessary to explore variables that predict college student well-being beyond the impact of Big Five personality (i.e., conscientiousness, extraversion, agreeableness, neuroticism, openness to experience) (Diener et al., 1999) and the Acceptance and Commitment Therapy (ACT) variables, mindfulness, experiential avoidance, and values-based action represent three constructs that show promise in this area, yet little is known about how they interact with one another to influence well-being. Should mindfulness, experiential avoidance and values-based action yield predictive utility for well-being, ACT intervention may be a useful tool for enhancing well-being in college students.

Indeed, ACT interventions have been shown to improve psychological functioning in college students (Forman et al., 2007; Lillis & Hayes, 2007; Masuda et al., 2007; Zettle, 2003). For example, Forman et al. (2007) found that an ACT intervention improved depression, anxiety, and indicators of well-being, such as quality of life, and life satisfaction in a college sample. Further, mindfulness, experiential avoidance, and values-based action are thought to relate to well-being (Hayes et al., 1999; Hayes et al., 2004) and mindfulness and experiential avoidance have been shown to predict college student well-being (Baer et al., 2008; Brown & Ryan, 2003; Kashdan et al., 2006;

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Kashdan & Breen, 2007). Yet it is unknown if values-based action predicts well-being in a college sample or how important mindfulness, experiential avoidance, and values-based action are in individual relation to college student well-being over and above the effects of Big Five personality. Based on these considerations, this chapter will review the extant literature on well-being, mindfulness, experiential avoidance and values-based action as it relates to college students.

Well-Being

Well-being is most accurately measured by incorporating both hedonic (i.e., life satisfaction, and positive and negative affect) and eudaimonic (i.e., Ryff's scales measuring autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance) conceptions (Ryan & Deci, 2001). The literature on hedonic well-being developed partly out of reaction to the overwhelming focus of psychological research on negative outcomes (e.g., depression, anxiety, social dysfunction etc.) (Diener et al., 1999). Hedonic well-being can be attained through any means relevant to the individual, be it physical hedonism, joy from being with family and friends, or the intrinsic pleasure received through living by strongly held values (Diener, Sapyta, & Suh, 1998). Because the assessment of hedonic well-being allows wholly for the subjective experience of the individual, the construct has been aptly called subjective well-being (used interchangeably with happiness) and it is most often measured through ratings of life satisfaction, positive affect, and negative affect (Diener et al., 1999; Ryan & Deci, 2001).

The eudaimonic conception of well-being evolved from countless philosophers, religious teachers and others who maintained that there was much more to well-being

than just happiness (Ryff, 1989; Ryff & Keyes, 1995). Theories of eudaimonia contend that not all desires and valued outcomes produce hedonic pleasure or satisfaction. Likewise, sometimes outcomes producing hedonic properties are not good for people (Ryan & Deci, 2001). For example, a person who is coping with extreme personal hardship such as the death of a loved one might be considered to have high levels of well-being, despite endorsing negative affect, if they allowed themselves to experience feelings of sadness fully, rather than avoiding them (p. 151). In addition, eudaimonic well-being might be occurring during this type of hardship if an individual reassesses their life priorities in favor of deeply held values. Thus, eudaimonic well-being is characterized by such concepts as the realizing of human potential, and living authentically, or by virtue, and being true to oneself (Ryan & Deci, 2001). Positive and negative affect and cognitive evaluations are not inherent components of eudaimonic well-being but may instead be by-products of living the "good life" (e.g., a good car, a good television, or a good weekend—at its best an extended period of happiness) (Ryff & Singer, 1998, p. 3). As such, the current study of well-being will follow the model used by Keyes et al, (2002) in measuring a more holistic conception of well-being by incorporating both of the above conceptualizations of well-being as outcome measures.

College Students and Well-being

As previously discussed research suggests that college students are at increased risk of deficits in well-being and show a number of benefits from having higher levels of well-being. With regard to deficits in well-being for example, Cooke et al.'s (2006) longitudinal study collected data on four separate occasions from first year U.K. college students. A total of 4,699 students completed measures of well-being and mental health

symptoms (i.e., anxiety and depression) on at least one occasion. Based on data collected at time one (prior to college); the authors separated the students by highest and lowest levels of psychological vulnerability (i.e., at risk for decreased well-being) prior to beginning college. Results showed that irrespective of psychological vulnerability, attending college put strain on their well-being, so that participants had lower well-being scores throughout the academic year than before entering college, suggesting that individuals who attend college are at greater risk for diminished well-being and psychological problems such as depression (Cooke et al, 2006). Another study by Adlaf et al. (2001) used stratified cluster sampling to collect data from 7,800 Canadian undergraduates concerning distress (i.e., difficulties with depression, anxiety, and social functioning). Results indicated that among college students, women had higher psychological distress than men and student distress decreased as they progressed in school. These data were then compared to previously collected data from the general population and results showed that regardless of within-group differences, college students had significantly more distress than young adults not in college and the general population.

Despite the potential for decreased well-being in college students, studies suggest that college students with higher levels of well-being may enjoy a number of benefits as a result. For example, Diener and Seligman (2002), in a sample of 222 U.S. undergraduates, found that students with higher levels of well-being had almost never in their lives thought about suicide, could recall more positive events than negative ones, reported more daily positive emotions, and had virtually no difficulties with psychopathology when compared to those with lower levels of well-being regardless of

the amount of money they had, the number of objective positive and negative events they had experienced, their grade point average, objective physical attractiveness, social support, tobacco and alcohol use, and time spent sleeping, watching television, exercising, and participating in religious activities. These data suggest that well-being may lead to a number of positive outcomes irrespective of a variety of potential influences. Another study by Frisch et al. (2005) is suggestive of the positive implications of high well-being for graduation from college as well. In a sample of 2,179 U.S. college students, Frisch and colleagues (2005) found that well-being scores positively predicted academic retention one to three years in advance.

In addition, these benefits appear to stretch beyond graduation. For example, Burger and Caldwell (2000) conducted a study on job search and interview success of 99 college seniors. The authors collected personality, and indicators of well-being (i.e. affect) data four months prior to graduation in addition to 3-month follow-up data on personality, indicators of well-being, job search behavior, and success of acquiring follow-up interviews and job offers. Higher well-being predicted the graduates' involvement in job search strategies (i.e., talking to faculty and friends about jobs, searching newspaper ads, etc.) and success at acquiring a second interview or job offer even after controlling for extraversion. Overall, these data suggest that college students are a group that could benefit from further well-being research because they appear to enjoy a number of positive outcomes when their well-being is high and are at elevated risk for decreased well-being when compared to non-college students. The current research hopes to yield insights that may assist in the development of positive psychology interventions to increase college student well-being.

In studying the vast literature on well-being, a variety of research modalities have been used to yield a number of findings pertinent to college students. Though meta-analyses concerning predictors of well-being and surveys of well-being literature incorporate studies with a variety of groups, college student samples are well represented in the studies reviewed, therefore a broad review of the major findings of these meta-analyses, and the cited studies therein, is warranted.

Predictors of Well-being

As mentioned, Diener et al. (1999) and Ryan and Deci (2001) both report that personality is among the strongest predictors of well-being and Diener and colleagues suggest that genetic heritability may play a large role in the correlation. Of the Big Five personality traits, extraversion, and neuroticism have been found to most strongly predict well-being, followed by conscientiousness, agreeableness, and openness to a lesser degree (Diener et al., 1999; Ryan & Deci, 2001). Further, Keyes et al. (2002) found that an individual's chance of well-being increased as extraversion increased and neuroticism decreased. In a meta-analytic review of personality and hedonic well-being, DeNeve and Cooper (1998) found that private collective self-esteem, positive affect, trust, emotional stability, desire for control, and hardiness (coping positively with stressful events) were shown to be the top five positive correlates of well-being, while locus of control-chance (thinking that events happen based only on chance) and tension (experiencing of negative emotions) were found to be negative correlates (DeNeve, 1999, p. 143). In addition, Luszczynska, Gutierrez-Dona, and Schwarzer (2005) found that self-efficacy (i.e., the belief in one's ability to cope with life challenges) was related to hedonic well-being in five nations. Steel, Schmidt, and Shultz (2008) argue that meta-analytic reviews of the

relationship between personality and well-being have not taken into account the variety of personality measures used suggesting that the relationship has actually been understated in the literature.

Predictors of well-being have also been sought in other areas. Though demographic variables such as income, age, relationship status, gender and education were originally thought to be large predictors of well-being (see Diener, 1984 for review), these variables only account for between 8% and 20% of the well-being variance (Argyle, 2001; Diener et al., 1999), much less than personality factors. DeNeve (1999) notes that income is related to hedonic well-being but only to the extent that it meets survival needs. Religious affiliation also is related to higher hedonic well-being. However, DeNeve (1999) reports that no single demographic variable accounts for more than 3% of the variance in well-being. Although combining all demographics together has been found to predict 15% of hedonic well-being, DeNeve (1999) echoes Diener et al. (1999) who suggest that demographic variables are largely irrelevant in predicting well-being. Beyond personality and demographic variables, positive relations with others and social support are also highly predictive of hedonic well-being, and Diener and colleagues (1999) have suggested that social support has a causal relationship with well-being.

Predictors of College Student Well-being: Personality

In studying well-being in college students specifically, studies have yielded results in a variety of areas including, personality, demographic differences, culture, distress and coping, and social support. With regard to the relationship between personality and well-being, results are consistent with that of the general population.

Optimism and self-esteem have been noted in several studies to be strong predictors of well-being among college students (Burris, Brechting, Salsman, & Carlson, 2009; Diener et al., 1999; Ryan & Deci, 2001; Quimby & O'Brien, 2006). For example, in a longitudinal study, Lucas, Diener, and Suh (1996) found that hedonic well-being was strongly predicted by both optimism and self-esteem across three samples of college students using self- and observer-report. In a sample of African American students (83 male and 132 female) Utsey et al. (2008), found that optimism mediated the relationship between cultural orientation and life satisfaction.

In addition, Big Five personality factors have shown predictive utility for well-being. For example, Diener and Seligman (2002) measured hedonic well-being in a sample of 222 college students in an intensive semester long study. Daily and global measures of affect were administered and a life satisfaction scale was given three times to participants. Significant personality differences were observed and notable findings were that "very happy people" had lower neuroticism and higher extraversion and agreeableness than "middle happy," and "very unhappy" people had the lowest levels of extraversion and highest levels of neuroticism. "Very unhappy people" also had the lowest levels of conscientiousness. Another study by Chen and colleagues (2006) showed that personality qualities similar to conscientiousness, neuroticism, and agreeableness significantly predicted well-being over and above self-esteem in Chinese students as well, and Chan and Joseph (2000) reported that Big Five factors accounted for 30% of the variance in hedonic well-being in 107 U.K. college students. In addition, Keyes et al. (2002) conducted discriminant analysis with a sample of 3,032 Americans from the general population and found that openness to experience was indicative of well-being.

While the individual personality factors appear to have unique predictive utility for well-being, considering personality as a whole has also been shown to predict well-being. For example, Schmutte and Ryff (1997) argued that Big Five personality variables conscientiousness, extraversion, agreeableness, openness, and neuroticism had a consistently meaningful relationship with well-being. In two adult samples (N = 215 and N = 139), the authors found a significant relationship between Big Five personality and eudaimonic well-being even after accounting for source overlap and shared item content. Further, Weiss, Bates, and Luciano (2008) reported evidence to suggest that variation in hedonic well-being is accounted for by unique and common genetic influences from all Big Five personality domains following study of a representative sample of 973 twin pairs.

Diener and colleagues (1999) conclude that personality accounts for a much greater variance in well-being than do situational variables. Robinson's (2000) findings lend support to this position. After analyzing data from two cross-sectional and one longitudinal studies of college student well-being, life events were found to influence eudaimonic well-being through mood and that a loose association between life events and well-being exists that allows people to "update global beliefs about their lives when circumstances warrant it, but maintain a stable sense of self in the face of the ups and downs of daily life" (p.167). Robinson (2000) argues that mood is more influenced by personality and concludes that life events, though relevant, have a much more limited impact on global evaluations of eudaimonic well-being.

Other Predictors of College Student Well-being

With regard to demographic variables, Ryff (1989) found differences in facets of eudaimonic well-being in a sample of 133 college students. College students had significantly higher scores than older adults on personal growth, lower scores than both middle-aged and older adults on environmental mastery, and lower scores than middle-aged adults on autonomy. In addition, overall sex differences were found with women scoring significantly higher on positive relations with others when compared to men. Finally, regression analysis revealed that the demographic variables, finances, health, marital status, sex, age, and education were all significantly related to various facets of eudaimonic well-being and accounted for generally low levels of variance (ranging from 3% - 24%). The demographics accounting for the highest levels of variance in well-being were finances and health. Ryff and Keyes (1995) note that these differences have been replicated in numerous studies. Diener and Diener (1995) also found that finances were predictive of hedonic well-being in 31 nations and Fujita, Diener, and Sandvik (1991) found that though females endorsed higher rates of negative affect than men, they also endorsed higher positive affect which leads to gender equivalent ratings of hedonic well-being. In addition, Rodriguez, Mira, Myers, Morris, and Cardoza (2003) found that 8% of eudaimonic well-being variance was accounted for by gender (i.e., female = lower well-being) and socioeconomic status (i.e., higher SES = higher well-being) in 338 Latino-American college students.

Significant relations with college student well-being have also been found in the areas of distress and coping. Bopaiya and Prasad (2004) examined aspects of hedonic and eudaimonic well-being in 150 female Indian students in Bangalore and found that

symptom distress was negatively predictive of well-being, while coping was positively predictive. In a similar study, Matheny et al. (2008) conducted a cross-cultural examination of differences in the prediction of life satisfaction using 206 Mexican (165 female) and 241 U.S. (172 female) college students. The authors found that perceived stress and coping resources predicted life satisfaction in both samples. These variables accounted for a greater amount of variance in U.S. than in Mexican college student life satisfaction. Further, Chang (2006) found that perceived stress and socially prescribed perfectionism were significantly negatively associated with eudaimonic well-being in college students (92 men and 189 women). In addition, Neely and colleagues (2009) found that self-compassion, which is conceptually similar to mindfulness, accounted for the most variance in hedonic and eudaimonic well-being even after the effects of social support were considered.

Cultural-oriented coping and distress variables also appear to be predictive of well-being. For example, Gavala and Flett (2005) studied 122 Maori (a minority group of New Zealand) and reported that high stress, increased feelings of culturally-oriented discomfort at school, and a lower sense of academic control, were more likely to experience decreased hedonic well-being. In a similar study Rodriguez et al. (2003) found that 12% of the variance in the eudaimonic well-being of Latino college students in the U.S. was predicted by generic college stress and acculturative stress. In addition, Utsey et al (2008) found that cultural orientation, religiosity, and racial pride predicted hedonic well-being.

Variables related to social support have also been shown to be strong predictors of well-being. For example, Quimby and O'Brien (2006) found that secure attachment, and

social support significantly contributed to the prediction of life satisfaction in 209 nontraditional undergraduate female students (i.e., at least 25 years of age) with children. Another study by Neely and colleagues (2009) showed that perceived need for support, and perceived availability of support predicted hedonic and eudaimonic well-being in college students as well. In their study of what makes college students happy, Diener and Seligman (2002) concluded that "Compared with the less happy groups, the happiest respondents did not exercise significantly more, participate in religious activities significantly more, or experience more objectively defined good events. No variable was sufficient for happiness, but good social relations were necessary" (p. 81). Social support seems to be an important predictor of college well-being across cultures as well. For example, Bopaiya and Prasad (2004) showed that supportive family environment was predictive of hedonic well-being in Indian female students. A similar study showed that in Latino-American students, family and friend support accounted for 6% of the variance of eudaimonic well-being over and above the effects of gender, socioeconomic status, acculturation level, generic college stress, acculturative stress, and minority status (Rodriguez et al., 2003).

A final major category of college student well-being predictors is derived from literature on goals and values. Adams, Bezner, Drabbs, Zambarano, and Steinhardt (2000) reported that having purpose in life was related to aspects of hedonic and eudaimonic well-being only when an individual had an optimistic outlook and sense of coherence (i.e., confidence that they have enough resources to be able to predict and manage their environment) in their lives, suggesting that simply having direction is not enough for well-being, confidence in oneself is needed. Further, the ability to discern

realistic goals appears to be important for both hedonic and eudaimonic well-being as goal-regulation (i.e., the ability to disengage from unrealistic goals and refocus on pursuing goals that are more attainable) has been shown to be predictive of university student well-being (Neely et al., 2009). In addition to suggesting that realistic goals are related to well-being, Diener and Fujita's (1995) findings suggest that having resources for goal-attainment is also important. They collected data from 222 college students (110 men and 112 women) using self-reports, daily experience sampling, and informant reports, and found that observed resources (i.e., money, family support, social skills, and intelligence) were moderately strong predictors of hedonic well-being. The relationship was made stronger when the goals of an individual were congruent with their observed resources. Other studies show that the relevance of goals to college student well-being depends on the type of goals a person has. For example, Schmuck et al. (2000) found that the intrinsic goals of self-acceptance, affiliation and community feeling were more predictive of eudaimonic well-being than the extrinsic goal variables of financial success, appearance, and social recognition in college students from the U.S. and Germany. Similar findings have been reported with regard to values. For example, Sheldon (2005) found that the intrinsic-oriented values of community, intimacy and growth were more predictive of eudaimonic well-being than the extrinsic values of money, popularity and appearance in a longitudinal study of 18 male and 91 female students. Chan and Joseph (2000) also sought to determine the effects of intrinsic and extrinsic value aspirations. Regression analysis revealed that importance of financial success was related to three measures of well-being (i.e., self-esteem, self-actualization, and happiness), likelihood of financial success was related to self-esteem only (both extrinsic values), while likelihood

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of self-acceptance was related to self-actualization, and likelihood of community feeling was related to higher scores of happiness (both intrinsic values). Lu, Gilmour, and Kao (2001) sought to determine the relationship between values and college student well-being across cultures in 344 British and 439 Taiwanese students. They found that the Chinese values of social integration, and human heartedness predicted hedonic well-being in the Taiwanese sample but not in the British. Another Chinese value (i.e., Confucian work dynamism) was endorsed by both groups, suggesting that what causes well-being is both culture dependent and culture general.

Acceptance and Commitment Therapy and College Student Well-Being

One of the potential implications of the current study of college student well-being is that Acceptance and Commitment Therapy (ACT), the therapeutic approach that targets, mindfulness, experiential avoidance and values-based action, may be useful as an intervention to increase college student well-being. Therefore, a brief overview of ACT and the literature on the use of ACT with college students is warranted. Acceptance and Commitment Therapy (ACT; Hayes et al., 1999), a relatively new form of psychotherapy, is part of the so-called third-wave of cognitive-behavioral therapies which utilize mindfulness, acceptance (i.e., the hypothesized opposite to experiential avoidance), and values principles to induce positive outcomes (Hayes et al., 2004; Hayes et al., 1999). ACT assumes that the internal content (i.e., thoughts, emotions, remembering, etc.) of an individual is rarely problematic; rather it is the context in which an unwanted experience occurs that is the problem (Hayes, 2004, Hayes et al., 2004). The theory behind ACT holds that human suffering is strongly influenced by the direct experience of events in combination with our cognitive/verbal interpretations of them in ways that limit the

influence of direct experience on behavior (Hayes et al., 2006; McCracken & Yang, 2008, p. 479). Put simply, human suffering occurs in large part because of how we relate to experiences.

Hayes and colleagues (1999) suggest that human suffering can be moderated by using interventions to increase mindfulness, and values-based action, as well as decrease experiential avoidance, and there are several studies that have used ACT with college students to achieve desired outcomes. For example, Forman et al. (2007) compared the effectiveness of cognitive therapy and ACT in 101 (80.2% female) students seeking treatment at a university counseling center. The authors used few exclusion criteria to maximize external validity of the study. Although the authors did not predict outcome differences between treatments, they did predict that both would be effective and that ACT would have different mechanisms of action than cognitive therapy. In line with predicted outcomes the ACT intervention improved depression, and anxiety. Those students receiving ACT also had improved scores on indicators of well-being, namely, quality of life and life satisfaction. Further, ACT improved outcomes by decreasing experiential avoidance and increasing "acting with awareness" and "acceptance" (i.e., mindfulness) (p. 772).

In a similar study Zettle (2003) examined 24 college students (20 female) with math anxiety that were treated with 6 sessions of ACT or systematic desensitization. Significant equivalent reductions in math and test anxiety were found through a 2-month follow-up. A significant decrease in trait anxiety was limited to participants of systematic desensitization. Pre-treatment levels of experiential avoidance were more closely related to change in ACT participants. These results suggest that ACT may induce change

through targeting variables such as mindfulness and experiential avoidance. In another study Lillis and Hayes (2007) taught a 75-minute undergraduate class to 32 students (19 females and 13 males) to reduce racial and ethnic prejudice based on ACT. A second non-ACT lecture with similar aims was employed as a comparison treatment. Results indicated that both interventions succeeded at reducing measures of prejudice but that only the ACT intervention increased positive behavioral intentions to expand their multicultural awareness through various activities (e.g., joining a campus organization that focuses on cultural diversity) following intervention and at follow-up. This result suggests that ACT increases values-congruent behavior (i.e., values-based action) in college students. Masuda et al. (2007) conducted a similar study with 95 college students (64 female, 2 unidentified) comparing a 2 ½ hour ACT and educational seminar to reduce stigma toward people with psychological disorders. Pre-, post-, and 1 month follow-up measures were taken. The ACT seminar reduced stigma in all participants, while the education seminar reduced stigma in participants who were relatively cognitively flexible and non-avoidant. Though few studies have used ACT with college students, results are promising and college samples appear to be receptive to the intervention.

Mindfulness

Mindfulness is generally defined as the present-moment awareness of one's experience of *being*. Such awareness is highlighted by attention that is curious, accepting, and non-judging (Leary & Tate, 2007). Mindfulness can be thought of as a particular behavior or state that can be taught and practiced. It is also believed to be an inherent human trait or disposition that can vary moment by moment but may be more stable over time within an individual (Kabat-Zinn, 2003). The current study is concerned with trait-

level mindfulness and although there is increasing evidence to suggest that disposional mindfulness exists and can accurately be measured (e.g., Brown & Ryan, 2003; Kabat-Zinn, 2003), mindfulness research is still in its infancy and a lack of consensus exists on what mindfulness is and how it is operationalized. However, current opinion recognizes mindfulness as a trait-like variable that can be effected by a behavioral practice (e.g. mindfulness meditation), with state-like implications (e.g., Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Kabat-Zinn, 2003). Further, several authors suggest that mindfulness not only has state-, trait-, and behavioral implications, but is a multidimensional concept with a variety of factors (Baer et al., 2006; Leary & Tate, 2007).

Limited research exists examining how mindfulness should be conceptualized and results are mixed. For example, Thompson and Waltz (2007) conducted research using a variety of mindfulness measures to determine whether dispositional (i.e., trait) mindfulness was related to mindfulness meditation and found that little to no relationship existed between the two. Conversely, Brown and Ryan (2003) found that state-level mindfulness was related to trait-level mindfulness and those who had higher dispositional mindfulness were more likely to be able to engage in a mindful state (i.e. behavioral practice). In addition, Shapiro, Brown and Biegel (2007) found that dispositional mindfulness scores increased after subsequent mindfulness training, suggesting that the two are indeed related. Despite the differences of opinion and empirical data, researchers do agree that mindfulness is composed of at least two parts: the present moment awareness of one's experience, and the managing of that attention in a particular way (Leary & Tate, 2007), usually with curiosity, acceptance, and lack of judgment. The lack

of operational consensus has given way to a number of mindfulness measures (e.g., Baer, Smith, & Allen, 2004; Brown & Ryan, 2003; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006) which led Baer and colleagues (2006) to create a multidimensional scale with five facets (i.e., observing, describing, acting with awareness, non-judging of inner experiences, and non-reactivity to inner experiences) by incorporating all other existing mindfulness measures. The resulting Five Factor Mindfulness Inventory is a multidimensional measure that incorporates the facets most representative of the existing research, theory, and expert opinion, and will therefore be used in the current study to measure dispositional mindfulness.

Though a relatively new construct in the psychological literature, studies on mindfulness have emerged rapidly over the past 10 years. As discussed earlier, mindfulness has been found to promote positive psychological outcomes in a number of populations, including college students. The literature on the relationship between mindfulness and well-being is somewhat mixed, as some studies show positive predictive relationships (e.g., Brown et al., 2009) with certain well-being components (e.g., mood) while others do not (e.g., Brown & Ryan, 2003; Collard et al., 2008). No studies of mindfulness incorporate ACT variables such as experiential avoidance, and values-based action in studying college student well-being. More research in these areas will be useful for informing future intervention efforts on ways of increasing well-being in college students. In addition, a better understanding of how mindfulness relates to experiential avoidance, values-based action and well-being will help researchers determine whether ACT might be a useful intervention to increase college student well-being. Further, this

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research will help determine which of the three independent variables might be the most important ACT predictor of student well-being.

Mindfulness and Hedonic Well-being

Weinstein et al. (2009) examined the effects of trait mindfulness on well-being. This study controlled for personality variables (i.e., optimism and neuroticism) in 92 college students, of whom 82% were female. Findings revealed that mindfulness predicted hedonic well-being 1 month later, above and beyond the effects of personality. A follow-up study using 70 college students (49 female) studied the effects of trait mindfulness on daily positive and negative affect and found that mindfulness positively predicted PA and negatively predicted NA. The positive relationship between mindfulness and hedonic well-being has been replicated in other studies as well. For example, Brown et al. (2009) conducted three studies that examined the relationship between mindfulness and hedonic well-being in different populations. The participants of the three studies respectively included 221 British undergraduates (172 females and 49 males), 74 U.S. community adults, 55% whom were female, and 200 adult respondents (131 females) to a national survey. The authors found that mindfulness significantly predicted well-being in all three samples (Brown et al., 2009). In a similar study Brown and Kasser (2005) found that measures of hedonic well-being were predicted by greater trait mindfulness in 400 U.S. adolescents. Similar findings were reported by Jacob and Brinkehoff (1999) when they hypothesized that mindfulness would be related to a measure of life satisfaction and overall happiness in samples of 177 and 192 rural "country" residents.

Other mindfulness studies have not yielded a predictive relationship with positive affect. As Brown and Ryan (2003) developed a measure for trait mindfulness, namely the Mindfulness Attention Awareness Scale (MAAS), they tested the constructs ability to predict day-to-day PA, NA, and autonomy using a time-series design in a sample of 200 employed adults and a second sample of 92 college students. Though mindfulness significantly negatively predicted unpleasant affect, it did not significantly predict pleasant affect. The authors explained these results by suggesting that mindfulness is hypothesized to create an inner experience of calm, not necessarily positive mood.

Though positive predictive relationships have been found between the majority of well-being components, other studies have also shown non-predictive relationships between mindfulness and the affective components of well-being, particularly PA. Collard and colleagues (2008) tested whether a Mindfulness-Based Cognitive Therapy (MBCT; Teasdale et al., 2000) intervention would increase state mindfulness, life satisfaction, PA, while decreasing NA in 15 university students in the UK. The authors reported that mindfulness levels increased but found that PA did not increase. College student NA significantly decreased and demonstrated a large effect size (r = .54). Though life satisfaction showed only a trend toward statistically significant increases, the authors hypothesized that the significant increases might have been found with a greater number of participants (Collard et al., 2008).

Mindfulness and Mood

Though the relationship between mindfulness and life satisfaction has been consistently reported, mixed results have been found with regard to the relationship between mindfulness and PA. In addition, Brown and Ryan (2003) found that trait

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mindfulness negatively predicted NA in a sample of 74 community adults and a second sample of 92 college students, accounting for 31% and 10% of the respective between-subjects variation. However, mindfulness did not significantly predict PA in either sample (Brown & Ryan, 2003). Other studies have found a non-significant relationship between mindfulness and affect as well. For example, Kingston, Chadwick, Meron, and Skinner (2007) tested the effect of mindfulness training on mood in a pain tolerance trial of 45 university students in the UK. There were no baseline differences in mindfulness levels and, contrary to prediction, they found that mindfulness did not affect PA or NA.

To help resolve the somewhat mixed data on the relationship between affective well-being (i.e., PA, NA), and mindfulness Giluk (2009) conducted a meta-analysis of 15 studies with over 2,000 research participants. As in the current research endeavor Giluk was interested in trait mindfulness. Therefore, correlational studies were the focus of analysis. Intervention research was only included if measures of affect were taken prior to intervention. As might be expected, NA had a moderate negative correlation with mindfulness ($p = -.51$). Despite mixed data on the relationship between PA and mindfulness, analysis revealed a moderate positive overall correlation of .44 for the reviewed research (Giluk, 2009).

Mindfulness and Eudaimonic Well-being

Beyond PA and NA, other studies have found mindfulness to be predictive of indicators of well-being. Weinstein and colleagues (2009) also examined vitality, which is thought to be a component of eudaimonic well-being (Ryan & Deci, 2001). In line with prediction, the authors found that mindfulness positively predicted vitality (Weinstein et al., 2009). In contrast, Shahmohammadi, Bhorbani, and Mohammad (2007) found that

mindfulness did not predict vitality in a sample of 108 female and 69 male Iranian students during final exam week. However, Brown and Ryan, (2003) reported a predictive relationship between mindfulness and autonomy in two samples (community members and college samples), with mindfulness accounting for 10% and 7% of the respective variance in autonomy. Though the authors also reported significant correlations between mindfulness and well-being indicators such as vitality, self-actualization, autonomy, competence, and relatedness in a number of different samples, they did not examine the predictive utility of mindfulness and these well-being measures (Brown & Ryan, 2003). Mindfulness has also been researched in relation to general college student well-being. For example, Baer et al. (2008) researched the relationship between mindfulness, as measured by the Five Factor Mindfulness Questionnaire (FFMQ) and eudaimonic well-being in three different samples; 175 college students, 169 educated meditators, and 75 educated non-meditators. Significant positive correlations were found between all facets of mindfulness and eudaimonic well-being except for the *observe* facet, which was only significant in the meditating sample. The observe facet is characterized by the tendency to "notice internal and external stimuli" (p. 337) and Baer and colleagues (2008) suggest that this factor may only be developed through longer term meditation practice. The authors then tested the utility of the FFMQ for predicting eudaimonic well-being in the combined samples of educated meditators and non-meditators and found that four of the five facets were significant positive predictors. *Observe* was found to have a non-significant predictive relationship to well-being, which Baer and colleagues attribute to the inclusion of non-meditators in the sample (Baer et al., 2008). The authors did not report the predictive relationship of the FFMQ for well-being

in the college student sample. Finally, Howell, Digdon, Buro, and Sheptycki (2008)

examined the relationship between both hedonic and eudaimonic well-being, and

mindfulness in a population of 305 Canadian undergraduate students in an introductory

psychology course (74% female) and path analysis revealed that mindfulness was a direct

predictor of hedonic and eudaimonic well-being (Howell et al., 2008).

Experiential Avoidance

Experiential avoidance has been described as a process by which an individual

avoids the experience of unpleasant intrapersonal phenomenon, despite repeatedly

experiencing negative consequences for doing so. Further, experiential avoidance is

thought to transform normal internal events (i.e., thoughts, emotions, sensations) into

disorder (Hayes et al., 1996, p. 1154; Hayes, 2004; Hayes et al., 2004; Kashdan & Breen,

2007) through relational learning, a process by which multiple associations are derived

from only two or three stimuli to create a relational frame (see Hayes et al., 2004 for a

review). Relational frames (i.e. relational learning) are particularly useful for learning and

predicting the environment because multiple relations can be made based on exposure to

limited information. However, relational learning can also be problematic.

Because relational frames (represented by language and cognition) are used to

predict the environment, they are naturally utilized to attempt to produce positive

experiences and avoid negative ones. If a person evaluates a stimulus as "bad" he may try

to avoid the stimulus in the future. This, in and of itself is not necessarily unhelpful; on

the contrary, it could be absolutely vital to avoid a tiger if it escaped from the zoo and

was roaming around your neighborhood because it could literally kill you (Wilson &

Murrell, 2004). However, the relational learning process of human beings demonstrates

how things can get out of hand. The adaptive fear of the tiger is based on a fear of death. An individual then seeks to avoid things that can cause death. As language becomes enmeshed with constructs, the thought of death becomes an internal representation of the "tiger" (i.e., a genuine threat to life in the proper context) and is subsequently avoided. For example, few people would resist the urge to evade thoughts concerning the potential death of a loved one. Thus, the individual begins to avoid the thought of death (Wilson & Murrell, 2004). When literal and evaluative language dominates a person's repertoire, they are likely to engage in experiential avoidance. Because relational learning multiplies the number of new relations a person learns in response to a given stimuli, there are potentially many more stimuli that can be evaluated as "bad" and subsequently avoided, many of which will be internal manifestations. Thus, experiential avoidance becomes more harmful than helpful and subsequently leads to psychological distress and decreased levels of well-being (Hayes et al., 2004).

Avoidance itself has been linked to a variety of negative long-term outcomes (e.g., depression, poor coping, alcohol use, PTSD) and Hayes and colleagues (1996) contend that conceptualization of experiential avoidance as a generalized diathesis has been recognized by numerous traditions of psychotherapy for decades including, psychodynamic, humanistic, gestalt and existential. Either implicitly or explicitly, a key focus of these schools has been on the use of targeted intervention to resist or counteract avoidant processes so that greater self-awareness acceptance and understanding could take place. Despite the pervasiveness of experiential avoidance, ACT hypothesizes several other processes that people can engage in to diminish experiential avoidance.

Mindfulness and values-based action are among these processes and are thought to increase well-being (Hayes et al., 1996; Hayes et al., 1999).

Despite the theoretical rationale for why experiential avoidance leads to negative well-being, there is surprisingly little research that has been conducted on this relationship. A limitation to the research that exists pertains to the lack of inclusion of other relevant theoretical variables in ACT, namely, mindfulness and values-based action. Further, only two studies to date have examined experiential avoidance in relation to college student well-being. The first of these studies was conducted by Kashdan et al. (2006) who examined experiential avoidance as a general vulnerability for negative psychological outcomes by exploring the mediating impact of experiential avoidance on psychological distress and well-being over a 21-day monitoring period in 97 undergraduates. Results indicated that experiential avoidance was negatively associated with positive affective experiences, healthy life appraisals, life satisfaction, frequency of positive events, and meaning in life, all indicators of well-being. Conversely, increases in negative life events and greater negative affective experiences were positively associated with experiential avoidance. Kashdan and Breen (2007) followed this study by examining experiential avoidance in a mediating role in relation to numerous indicators of well-being. Self-determination, considered a measure of eudaimonic well-being (Ryan & Deci, 2001) consisting of three factors; Relatedness, Competence, and Autonomy was assessed along with PA and NA using a sample of 144 U.S. undergraduate students, 113 of whom were female. Experiential avoidance positively predicted NA and negatively predicted all the factors of self-determination, but did not predict PA (Kashdan & Breen, 2007). A third study on the relationship between experiential avoidance and well-being was

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undertaken by Kortte and colleagues (2009) who observed the relationship over a six-month period in 139 medical rehabilitation patients (60.4% male). Group differences were found based on race, with non-white participants scoring higher in experiential avoidance than whites. As expected, experiential avoidance negatively predicted well-being.

Though limited research exists on the relationship between experiential avoidance and well-being additional studies can be drawn from the broader but related area of avoidance. Weinstein et al. (2009) found that avoidant coping (a similar construct to experiential avoidance) predicted well-being at a 1 month follow-up of 92 college students. A follow-up study using 70 college students also found that avoidant coping also predicted daily well-being (Weinstein et al., 2009). Ben-Zur (2009) conducted a similar study and found that avoidant coping predicted PA and NA in a sample consisting of 480 residents of Israel (52.2% female and 47.6% male, .2% missing), including adolescents, university students and community members. Women scored higher on positive and negative affect than men, and gender also significantly predicted PA and NA in the regression equation (Ben-Zur, 2009). Two other studies using theoretically similar constructs to experiential avoidance found similar results. Elliot and Sheldon (1997) investigated the effect of avoidance-achievement goals (i.e., the propensity to avoid failure rather than approach pursuit) on well-being in a sample of 135 U.S. undergraduate psychology students over the course of a semester. Students with more avoidance goals led to decreased vitality and evidenced a decline in well-being from the beginning to the end of the semester (Elliot & Sheldon, 1997).

Another study by Stewart, Ebmeier, and Deary (2005) examined the relationship between Harm Avoidance and well-being, in a sample of 347 male and 550 female U.K. university students. Harm Avoidance, though hypothesized as a personality type, is conceptually similar to experiential avoidance. The personality variables extraversion and neuroticism were also included in a regression equation to examine happiness. The authors found that Harm Avoidance negatively predicted well-being and accounted for 47% of the variance in men and 45% of the variance in women, making it the largest predictor of well-being even after taking into account personality variables (Stewart et al., 2005). More studies are needed that examine college student well-being and incorporate other ACT variables, such as mindfulness and values-based action. Mitmansgruber, Beck, Hofer, and Schubler (2009) conducted one study that examined both experiential avoidance and trait mindfulness in relation to the well-being of 339 Austrian medical students. Experiential avoidance and mindfulness explained 30% and 7%, respectively, of the variance in well-being. Life satisfaction was another variable of interest and again, experiential avoidance explained 30% of the variance. Somewhat surprisingly however, mindfulness was not found to be significant (Mitmansgruber et al., 2009), thereby mirroring the results of Collard et al. (2008).

Values-Based Action

Values-based action is defined as behavior that is congruent with what an individual cares about most deeply (McCracken & Yang, 2006; Wilson & Murrell, 2004). The integration of values and values-congruent behavior into ACT treatment is a necessary adjunct to mindfulness in the decrease of experiential avoidance and the promotion of well-being (Wilson & Murrell, 2004). Mindfulness is used as a means to

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help individuals be present with themselves, through pleasant and unpleasant experiences. However, individuals are rarely willing to stay in contact with the internal phenomenon that bring suffering, presumably because these are the exact experiences the person has sought to avoid. Values become relevant because a person is much more likely to maintain contact with unpleasant internal manifestations if they believe doing so will help them to realize a deeply held value (Wilson & Murrell, 2004).

In discussing values, Rogers (1964) asserts that most people abandon their own innate locus of evaluation to determine personal values for the values placed upon them from society. This basic discrepancy between values and experience has negative implications for well-being:

By taking over the conceptions of others as our own, we lose contact with the potential wisdom of our own functioning, and lose confidence in ourselves. Since these value constructs are often sharply at variance with what is going on in our own experiencing, we have in a very basic way divorced ourselves from ourselves, and this accounts for much of modern strain and insecurity. This fundamental discrepancy between the individual's concept and what he is actually experiencing, between the intellectual structure of his values and the valuing process going on unrecognized within—this is a part of the fundamental estrangement of modern man. (p. 163)

ACT echoes this perspective and attempts to decrease this discrepancy between true personal values and those that are socially imposed. Individuals are helped to cultivate values that are devoid of avoidance, social compliance and fusion (e.g., "I shouldn't value Y, "moral people value X," "my father wants me to value Y") and are encouraged

to act in accordance with their values (Hayes et al., 2006). Discovering and acting by deeply held values is from a eudaimonic perspective, in and of itself, a positive outcome for individuals. From this perspective it is logical to assume this values-based action is predictive of greater well-being.

There is quite an extensive literature on values and numerous authors have attempted to define the form and structure of values. However, Rogers (1964) offers a particularly relevant discussion for the present topic. He discusses the distinction between "operant values" and "conceived values" (p. 161). Operant values are based on behavioral preferences of an organism (i.e., an infant's preference for a soft, plush toy rather than one that is coarse and hard); while conceived values are preferences for symbolic objects (e.g., "loyalty is the highest virtue"). The values-based action construct conceptualized in ACT is concerned with both types of values. Conceived values are important because it is necessary for an individual to have a verbal and conceptual appreciation for the idea that "loyalty is the highest virtue." However, this appreciation means little if the value is not an operant one because the individual must be willing to align his behavior behind the conceived value. This congruence between values and behavior is an important aspect of how values-based action is thought to relate to well-being (McCracken & Yang, 2008).

Although some have suggested that discrepancy between values and behavior is more common than not (see Wagner & Sanchez, 2002), Wagner and Sanchez's (2002) review suggests there are components that make value-behavior congruency more or less likely. When individuals judge a situation to be more salient for deeply held values, or past personal experience causes an individual to have more intense attitudes about a

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situation, they are more likely to behave in a values consistent manner (Schuman &

Johnson, 1976; Wagner & Sanchez, 2002). Additionally, values consistent behavior is the

product of challenging and comprehensively defined behavioral goals (Locke & Latham,

1990). On the contrary, when individuals don't recognize the relevance of particular

values for a given situation, values and behavior are inconsistent (Kristiansen, 1985).

This also occurs when there is no recognition that one's behavior can or will cause harm

to oneself or others (Schwartz, 1974). In addition, incongruence between values and

actions are also the result when a person denies responsibility for acting in values-

congruent ways and attributes control externally (Schwartz & Howard, 1980). Schwartz

and Ames (1977) found that positive and negative role models also influence the

congruency of values and action. If a positive role model disavows a shared value,

values-congruency decreases. Likewise, if a negative role model endorses a personally

held belief, values-congruency also decreases (Wagner & Sanchez, 2002, p. 287).

The research reviewed in this section incorporates mindfulness, experiential

avoidance, and values-based action in much of the research. The results, though

promising, have limited generalizability to college students however, as all the studies

examined patients seeking treatment for chronic pain in the U.K. Further, none of the

studies incorporate true well-being outcome variables. Nevertheless, this line of research

offers insight into the predictive utility of mindfulness, experiential avoidance, and

values-based action for well-being. For example, McCracken and Vowles (2008)

examined values-based action and acceptance (i.e., the hypothesized bipolar opposite of

experiential avoidance; Hayes et al., 2006) over an average of 18.5 weeks in 115 patients

seeking treatment for pain in the U.K., 56.5% of whom were female. Though well-being

was not measured as a dependent variable, an acceptable proxy was used, namely depression. Before well-being was defined in positive health terms, research into "psychological well-being" used variables that represented the absence of illness. Depression can be thought of as a key variable in this conceptualization (Ryff, 1989). Further, depression has been found to have a significant negative correlation with well-being (Ryff & Keyes, 1995). McCracken and Vowles (2008) found that values-based action was a significant predictor of depression and depression-related interference with functioning, accounting for 36% and 28% of the variance, respectively. Acceptance with functioning was significantly predictive of depression (accounting for 25% of the variance) but not depression-related interference from time 1 to time 2. McCracken and Yang (2006) conducted a similar investigation when constructing The Chronic Pain Values Inventory (CPVI). Participants included 140 patients (69.9% female) seeking treatment for chronic pain in the U.K. Values-based action was significantly negatively predictive of depression and depression-related interference with functioning, accounting for approximately 33% and 32% of the respective variance. Acceptance was also measured and significantly predicted 18% of the variance in depression but did not significantly account for depression-related interference with functioning (McCracken & Yang, 2006). This research line produced intervention studies as well. Vowles and McCracken (2008) conducted one such study to examine the processes and outcomes of an ACT intervention with a sample of 171 U.K. pain patients (64.2% female). Values-based action and acceptance were of particular interest as independent variables to the authors. This study, again, did not use measures of well-being, instead opting for other outcome measures, one of which was depression. Data were collected at three points;

prior to treatment, immediately after completion of treatment, and 3-months following

treatment completion. Though values-based action was significantly negatively correlated

with depression in pre- to post-treatment analysis (r = -.19), it was not significantly

predictive of depression. However, when analyses were conducted using the 114

participants who completed pre-treatment to 3-month follow-up data, results indicated

that the relationship between values-based action and depression was stronger (r = -.41)

and a significant predictive relationship was present, where values-based action predicted

32% of the variance in depression, suggesting a progressive, longitudinal treatment

effect. In contrast, acceptance was significantly predictive of depression in pre- to post-

intervention, explaining 36% of the variance and though maintaining significant negative

correlation with depression in pre- to 3-month follow-up analysis; it no longer held

significant predictive utility, suggesting diminished effect over time (Vowles &

McCracken, 2008).

In another study McCracken and Vowles (2007) measured mindfulness, values-

based action, and acceptance in 260 patients (64.6% female) seeking treatment for

chronic pain in the U.K. Again, depression was assessed along with numerous other pain-

related outcome variables but served as the best proxy for well-being. As predicted,

mindfulness, acceptance, and values-based action significantly accounted for a proportion

(16%) of variance in depression (McCracken & Vowles, 2007). In a similar study,

Vowles and McCracken (2010) delivered a pain intervention that was adapted from ACT

to a sample of 114 chronic pain patients from the U.K. Again, depression was a relevant

dependent variable and pre-, post-, and 3-month intervention follow-up data were

collected. Though multiple regression analyses yielded significant prediction of

mindfulness, acceptance, and values-based action for almost all pain related outcome measures, it did not do so for depression (Vowles & McCracken, 2010). Conversely, when data were not analyzed over time McCracken and Keogh (2009) reported different results between mindfulness, acceptance, and values-based action in a sample of 125 adult patients (only 122 of the 125 completed the mindfulness measure) seeking treatment for pain from the U.K, 64.8% of whom were women. Once again, depression was the only outcome variable assessed by the authors relevant to the current study. As expected, mindfulness, acceptance and values-based action were negatively predictive of depression, accounting for 22%, 32%, and 21% of the respective variance.

Only one study, conducted by McCracken and Yang (2008), incorporated the actual variables of interest for the current research. The authors used mindfulness, experiential avoidance, and values-based action to predict health and "general" well-being (p. 479) in 98 inpatient rehabilitation workers in Singapore (77.6% female). The only variables resembling well-being as described in the current study were vitality and social functioning, as measured by The Short Form Health Survey. The authors found that experiential avoidance negatively predicted both vitality and social functioning, whereas mindfulness positively predicted social functioning only, and values-based action showed positive prediction of vitality only. Mindfulness, experiential avoidance, and values-based action as a group, were found to predict 52% of the variance in vitality, and 32% of the variance in social functioning (McCracken & Yang, 2008). The lack of college student samples and true well-being measures are significant limitations for these studies. Thus, further research is needed to determine the collective and differential

predictive utility of mindfulness, experiential avoidance, and values-based action for a holistic conception of college student well-being.

Big Five Personality

Numerous studies have reported the significant relationship between personality and well-being among college students and the population at large, and the Big Five personality traits conscientiousness, extraversion, agreeableness, openness, and neuroticism have been among the most researched variables in the well-being literature (Diener et al., 1999; Ryan & Deci, 2001). For example, Keyes et al. (2002) used discriminant analysis to categorize well-being by personality type in 3,032 Americans, ages 25-74. Results showed that an individual's chances of being holistically well increased as extraversion and conscientiousness increased, and neuroticism decreased. Schmutte and Ryff (1997) found that all Big Five traits were significantly correlated with well-being in two samples of mid-life adults (N = 219 and N = 139) after controlling for potential artifactual influences. Further, Diener and Lucas (1999) reported evidence that suggested that extraversion and neuroticism were highly correlated with well-being even after controlling for measurement error. In addition, college students who are considered to have high well-being have been shown to have the highest levels of extraversion and lowest levels of neuroticism. Conversely, students with the lowest levels of well-being report the lowest levels of extraversion, and conscientiousness, and highest levels of neuroticism. Finally, Weiss et al. (2008) found a genetic link between Big Five personality and well-being variation in twin pairs. Because personality has been consistently found to be the strongest predictor of well-being (Diener et al., 1999; Ryan & Deci, 2001, Weiss et al., 2008) the Big Five personality variables conscientiousness,

extraversion, agreeableness, openness, and neuroticism will be used as a control variable in this study.

Summary

Several conclusions can be drawn from a review of the extant literature. First, research has shown that well-being is a variable with substantial implications for human quality of life in a number of areas. Second, studies suggest that college students are a population at potential risk for decreased well-being and conversely, may benefit from a variety of positive outcomes associated with increased well-being. Further, the existing research suggests that additional study into variables that predict college student well-being would enhance scientific understanding and inform future intervention efforts in this area. In addition, studies suggest that such research should take into account the influence of Big Five personality variables (i.e., conscientiousness, extraversion, agreeableness, openness, and neuroticism). Finally, mindfulness, experiential avoidance and values-based action, three relatively unstudied variables thought to be prominent in Acceptance and Commitment Therapy, show promise for predicting well-being in a number of populations including college students, yet these variables have never been examined together with well-being in college students. Therefore, the current study will examine the predictive utility of mindfulness, experiential avoidance and values-based action for college student well-being (i.e., hedonic and eudaimonic well-being) after taking into account the effects of Big Five personality variables conscientiousness, extraversion, agreeableness, openness, and neuroticism (a measure of social desirability will be used as well).

Chapter 3

Method

Design

This study examined the relationship between hypothesized processes of change

in Acceptance and Commitment Therapy theory (ACT), namely, mindfulness,

experiential avoidance and values-based action, and well-being after controlling for the

effects of the Big Five personality variables extraversion, neuroticism, conscientiousness,

agreeableness, and openness as well as a measure of social desirability. Multiple

regression analysis was used, entering all control variables in step one of the equation and

all variables of interest in a second step. This technique allowed for analysis of the effects

of the independent variables over and above the control variables as well as analysis of

the unique variance accounted for by each variable of interest.

Participants

Based on the recommendation of Stevens (2002) that 15 participants per

predictor variable are needed to attain adequate power for the use of least squares

multiple regression in social science research, the current study, using nine predictors,

required at least 135 participants. Participants were college students recruited from a

large public university, and a small college in the Mid-South.

A non-random sample was recruited in one of three ways. First, upon approval

from the university's Institutional Review Board, university instructors were sent

electronic mail (email) briefly outlining the study and asking them to forward the email to

students in their classes. Second, a description of the study and a website on the World

Wide Web (WWW) linking students to an online survey was placed on Facebook, a

commonly used social networking website. Third, a randomly generated list of students at a second institution was emailed a description of the study and a website linking students to the online survey. The email and Facebook posting described the study as an investigation of the happiness and well-being of college students and participants were directed to a website on the World Wide Web where they were able to access the survey. All interested students completed the online survey at their own discretion.

The potential to be entered into a raffle for one of two $50 prizes was an incentive for study participation. Participants were informed that completing the survey would take approximately 30 minutes. Upon completion of the last survey questionnaire, participants were given the option of providing their email address to be entered in the raffle. Those who chose to be entered in the raffle were linked via web address to a separate website where email addresses were stored separately from collected data to ensure confidentiality.

Students choosing to participate in the study read the informed consent form upon entering the study website. Only students who agreed to the terms of the consent form were allowed to continue to the survey. Upon agreeing to the terms of consent, students completed the demographics questionnaire followed by the Acceptance and Action Questionnaire (AAQ), the Big Five Inventory 10-item version (BFI-10), the Positive and Negative Affect Schedule (PANAS), the Satisfaction with Life Scale (SWLS), the Brief Values Inventory (BVI), the Scales of Psychological Well-Being (SPWB), the Five Facet Mindfulness Questionnaire (FFMQ), and finally the Marlowe-Crowne Social Desirability Scale – Short Form C (M-C SDS Form C).

All 174 students who completed the survey were included in analysis. For the 174 participants in the study, the age range was from 16 to 59 ($M = 23.43$, $SD = 8.58$), 76.4% ($n = 133$) were female, 23% ($n = 40$) male, and .6% ($n = 1$) identified as "other." Of the participants 60.3% ($n = 105$) reported to be Caucasian, 29.9% ($n = 52$) were African American, 6.3% ($n = 11$) were Asian, .6% ($n = 1$) were Latino, and 2.9% identified as Multiracial, 68.4% ($n = 119$) were undergraduates, 18.4% ($n = 32$) were earning masters' degrees, and 13.2% ($n = 23$) were working towards doctoral degrees. Participant years taking college classes ranged from less than 1 (i.e., first-year students) to 25 ($M = 2.99$, $SD = 3.46$), 20.7% ($n = 36$) endorsed ever practicing mindfulness, and 79.3% ($n = 138$) said they had never practiced. The mean grade point average (GPA) of participants was 3.38 and mean yearly family of origin income was between \$40,000 and \$49,000. Participants were largely inexperienced meditators with 55.2% ($n = 96$) reporting never practicing meditation, 21.3% ($n = 37$) reporting practicing less than monthly, 12.1% ($n = 21$) reporting practicing one or more times per month, 8.6% ($n = 15$) reporting practicing more than once per week, 2.3% ($n = 4$) reporting practicing daily, and .6% ($n = 1$) reporting practicing more than once per day.

Assessments

The *Acceptance and Action Questionnaire* (AAQ; Hayes et al., 2004) is a nine-item measure of experiential avoidance with a possible range of absolute scores from 9 to 63. The AAQ is a Likert-type measure with scores ranging from 1 (never true) to 7 (always true) and items 1, 4, 5, and 6 are reverse scored. The initial validation study examined eight samples with over 2,400 total participants and reported a Cronbach's

alpha of .70 (for the 9-item measure) and test-retest reliability of .64 over a 4-month

period (for the 16-item measure).

Thirty-two theory based items were included in the initial scale. The authors used

an iterative exploratory model-generating approach to arrive at a single-factor

theoretically and psychometrically sound scale. Because of a lack of consensus on a best

fit model, three scales were created, a 16-item, a 9-item, and a 7-item. Inter-correlations

between the three measures ranged from .89 to .96. Out of the three, the 9-item had the

best internal consistency and was subjected to full confirmatory factor analysis. This

factor structure yielded a good fit to the data (Hayes et al., 2004).

The AAQ was shown to have good convergent validity with a number of

conceptually similar scales including those measuring thought suppression, coping,

thought control and post-traumatic stress. Low significant correlations were found with

these measures, indicating that the AAQ is related but distinct. The AAQ was also found

to account for a significant portion of variance with the aforementioned scales even after

controlling for self-deceptive positivity, a general factor in psychopathology. Non-

significant relations with social desirability were also found. Finally, positive correlations

with negative outcomes (e.g., depression and anxiety) and negative correlations with

positive outcomes (e.g., quality of life and life satisfaction) were found (Hayes et al.,

2004). Taken together, these results suggest adequate psychometric properties for use in

the current study. In the current study, the internal consistency reliability (Cronbach's

alpha) was .61, which is similar to what was reported by the developers.

The *Big Five Inventory-10* (BFI-10; Rammstedt & John, 2007) is a 10-item

version of the widely used personality measure, The Big Five Inventory (BFI-44; John,

Donahue, & Kentle, 1991). It measures the "Big Five" domains of personality (Goldberg, 1992) namely, Agreeableness, Extraversion, Conscientiousness, Neuroticism, and Openness in five 2-item scales and is appropriate for research where brief measures of personality are preferable but personality is not a primary variable of interest (Rammstedt & John, 2007). The BFI-10 is a Likert-type measure with scores ranging from 1 (disagree strongly) to 5 (agree strongly). To create the BFI-10 the authors selected one positively and one negatively coded item for each factor. The items were representative of core aspects of each factor but had minimal overlap in order to capture the broadest possible representation of the measured factor. In addition, item selection was based on corrected item-total correlations with the BFI and the simple-structure pattern of their loadings in the full 44-item factor-analysis, thus respectively favoring items that were more centrally, rather than peripherally related to the core construct, and those items that were more uniquely related to one factor, rather than across multiple factors (Rammstedt & John, 2007).

Initial validation of the measure was derived from five total samples; two samples of U.S. college students ($n = 726$, 64% female; $n = 726$, 56% female), two samples of German college students ($n = 457$, 56% female; $n = 376$, 66% female) and one sample of community dog owners ($n = 75$) who rated themselves and were rated by a friend, providing peer ratings for use in external validity data analysis. The mean part-whole correlation for the BFI-10 (.83 across three samples) was understandably lower than the internal consistency of the BFI-44 but good for an ultra-short measure, ranging from .74 (Agreeableness) to .89 (Extraversion). Six to eight week test-retest reliability showed

similar differences from the original but were respectable, reported as .72 for the first

U.S. sample, .78 in the first German sample, and .75 overall.

In terms of validity, strong evidence for discriminant validity was found via

extremely low mean intercorrelations across samples (even lower than the BFI-44, and

NEO-PI-R), ranging from .08 to .13 and averaging .11. No single correlation reached .25

and only 4 out of 40 exceeded .20, suggesting the BFI-10 scales are distinct from one

another. Factor-analysis using five varimax-rotated factors revealed a clear five factor

structure with all items loading as expected (mean loading = .64) and minimal secondary

loadings (M = .08). This structure is almost identical to that of the observed BFI-44

loadings (.63 and .10, respectively). Evidence for convergent validity was found with a

domain scale average correlation of .67 with the NEO-PI-R (compared to .78 for the full

BFI-44). In addition, the BFI-10 predicted 70% of the variance in the full BFI-44.

Overall, convergent and discriminant validity was substantial and similar to the

BFI-44, suggesting that the BFI-10 clearly measures five distinct factors of personality.

Analysis of self-report and peer-ratings demonstrated adequate external validity

correlations, averaging .44, as compared to .56 for the BFI-44. These results suggest that

although the BFI-10 has somewhat diminished psychometric properties when compared

to the BFI-44, they are still adequate, and suggestive of a well-constructed measure.

When considering the shortened length and strong psychometric properties, the BFI-10

represents a measure that is preferable to lengthier measures of personality when

personality is not a main construct of interest, such as in the current study (Rammstedt &

John, 2007). Because research participant time spent completing a survey is kept to a

minimum, fatigue is likely decreased and the number of completed surveys likely

increased while sustaining acceptable psychometric loses. In the current study, reliability estimates (Cronbach's alpha) were .63 for extraversion, .38 for agreeableness, .49 for conscientiousness, .58 for neuroticism, and .05 for openness. Due to unacceptably low internal consistency of the openness subscale, one item (i.e., *I see myself as someone who has an active imagination*) was deleted from the measure and not used in analyses. Of the two BFI-10 openness items, the reverse scored item, *I see myself as someone who has few artistic interests,* has been found to be more empirically and theoretically representative of the construct of openness, while the deleted item was found to reduce psychometric properties during facet scale development for the original BFI (Rammstedt & John, 2007; Soto & John, 2009, p. 85). Thus, a single-item measure of openness was used.

The *Positive Affect Negative Affect Schedule* (PANAS, Watson, Clark, & Tellegen, 1988) is a state-level measure of affect containing 20-items, divided into two factors. These factors measure positive affect (PA) and negative affect (NA) with 10 items each using a 5-point Likert-type scale ranging from 1 (*very slightly or not at all*) to 5 (a lot of the time or extremely). Scores for the PA and NA are obtained by summing all 10 items for each subscale with absolute scores ranging from 10-50 (Watson et al., 1988).

Using varied items, the PANAS asks respondents to report their experiences over the past few weeks (e.g., "Interested," "Distressed," "Excited," "Upset"). Strong internal consistency reliability scores were reported for both Positive Affect (α=.87) and Negative Affect (alpha =.87). Test-retest reliability for PA and NA were .58 and .48, respectively, when assessed at an eight week interval. The PANAS shows adequate convergent and discriminate validity with measures of depression, anxiety and distress (Watson et al., 1988).

A more recent study conducted by Crawford and Henry (2004) investigated the psychometric properties of the PANAS using a large non-clinical sample of 1,003 participants. Internal consistency reliability scores were .89 for the PA, and .85 for the NA. Factor analysis confirmed the authors' hypothesis that the PANAS measures two distinct factors, namely positive affect and negative affect. Further, PA had a strong, negative correlation with depression and anxiety, while the reverse was found for NA (Crawford & Henry, 2004). In the current study, the internal consistency reliability estimates (Cronbach's alpha) were .89 and .86 for the positive affect and negative affect subscales, respectively and are consistent with those reported by Crawford and Henry.

The *Satisfaction with Life Scale* (SWLS, Diener, Emmons, Larsen, & Griffin, 1985) is a widely-used 5-item self-report measure designed to examine a person's global judgment of life satisfaction. Life satisfaction is one of three factors, along with negative affect and positive affect, to measure the construct of subjective well-being (Diener et al., 1999). A list of 48 items was developed during the initial phase of test construction. Item content covered life satisfaction, negative affect and positive affect, and three factors reflecting these constructs were found to exist. However, the positive and negative affect content areas were eliminated because the factor analysis did not produce loadings above .60 for these items. This reduced the scale to 10-items, but because of high semantic similarity for several of those items, the scale was further reduced by 5 items (Diener et al., 1985).

Item content asks for global rather than specific life satisfaction, with responses ranging from *strongly disagree* (1) to strongly agree (7). The possible range of the scale extends from low satisfaction (5) to high satisfaction (35). Scale results can be interpreted

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in increments of absolute life satisfaction with 5 to 9 being extremely dissatisfied, 15 to 19 being slightly dissatisfied, 21 to 25 being slightly satisfied and 26 to 30 being satisfied. The score of 20 is a neutral point on the scale, where the respondent is considered to be neither satisfied nor dissatisfied (Pavot & Diener, 1993). However, due to the lack of validity evidence for these cutoff scores, the present study will not interpret the scale with respect to these facets.

The SWLS has shown strong internal consistency reliability and moderate levels of temporal stability. Diener and colleagues (1985) reported a coefficient alpha of .87 and a two-month test-retest reliability coefficient of .82. Other investigations yielded similar reliability findings and temporal reliability was found to decrease as time between test retest increased, suggesting that life satisfaction is largely stable but that change can occur over time, perhaps due to life events (Pavot & Diener, 1993). These findings suggest that life satisfaction has a long-term component (possibly due to personality and stable life events), a moderate-term component (possibly due to current life events and cognitive schemes), and a short-term component (e.g., current mood and immediately impactful life events) (Pavot & Diener, 1993).

Principle-axis factor analysis of the scale revealed a single factor structure for the SWLS that accounted for approximately 66% of the variance, suggesting the scale is measuring a single dimension (Diener et al., 1985). The SWLS shows adequate construct validity by demonstrating convergence with conceptually similar measures, including those using a different methodological approach, such as interviewer and informant ratings. In addition, the SWLS has been shown to negatively correlate with clinical measures of distress, with correlations ranging from -.54 to -.72 on measures of

depression, anxiety and general psychological distress (Pavot & Diener, 1993). Finally, normative data are available representing diverse populations including college students from the U.S. and other nations, nurses and health workers, geriatric populations, elderly caregivers of people with dementia, female victims of abuse, students with disabilities, military veterans, individuals in residential substance abuse treatment and clients in psychotherapy (Pavot & Diener, 1993). In the current study, the internal consistency reliability (Cronbach's alpha) was .88, similar to what was reported by the test developers.

The *Brief Values Inventory* (BVI) is a modified version of the Chronic Pain Values Inventory (McCracken & Yang, 2006). It consists of two separate scales with six items each that assess success, importance and the discrepancy between success and importance in respondent values. The six value domains are measured on a 6-point Likert-type scale ranging from 0 (not at all important/successful) to 5 (extremely important/successful). The measured domains include family, intimate relations, friends, work, health, and growth or learning and are derived from the values-based treatment methods of ACT (Hayes et al., 1999).

Although three different scores can be produced by the BVI (e.g., success, importance and discrepancy) the primary purpose of the instrument is to examine success and discrepancy (calculated by subtracting success from importance ratings). Because of this, psychometric properties have only been reported for these two scales. Cronbach's alpha coefficients were found to be .82 for both scales, indicating good internal consistency. Although factor analysis has not been conducted to confirm the structure of the scale, concurrent and discriminant validity has been established with several relevant

constructs. As hypothesized, the success scale has been found to negatively correlate with measures of avoidance and pain-related anxiety, while the discrepancy score revealed a positive relationship. In contrast, measures of acceptance have been found to negatively correlate with the discrepancy scale and positively correlate with the success scale (McCracken & Yang, 2006; McCracken & Yang, 2008). Taken together, these results suggest the BVI is appropriate for use in the current study. The instructions for the measure were modified for use with a college student population. Specifically, the entire phrase "Many people with chronic pain find that their pain and other symptoms are barriers to engaging in activities that are personally important to them. These people have values but they are not living according to their values" was omitted and replaced with "Many people have values but are not living according to their values." In the current study, the reliability (Cronbach's alpha) was .70, similar to what was reported by the test developers.

The short version of the *Scales of Psychological Well-Being* (SPWB; Ryff, 1989; van Dierendonck, 2005) is a 39-item measure based on the 120-item SPWB. The original SPWB is a theoretically derived measure purported to measure six facets of well-being (20-items for each scale). The SPWB is based on extensive literature informed by well-known theorists such as Maslow (1968), Rogers (1961) and Jung (1933) among others. The purported six dimensions of well-being included: Self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth (Ryff, 1989). The scales are measured on a 6-point Likert-type scale ranging from 1 (strongly agree) to 6 (strongly disagree). The SPWB has been found to have good internal consistency, measured by Cronbach's alpha, ranging from .86 (autonomy) to .93 (self-

acceptance). Six-week test-retest reliability scores ranged from .81 (purpose in life, and personal growth) to .88 (autonomy). In support of the construct validity of the SPWB, hypothesized correlations have been found between the SPWB and numerous measures of positive psychological functioning. For example, significant positive correlations have been found with scales of life satisfaction, self-esteem, affect balance, internal locus of control and, morale, while significant negative correlations have been found with scales of chance locus of control, powerful others and depression (Ryff, 1989).

In addition to the 20-item scales (120 total items), various different versions of the SPWB have been used including 3-, 7-, 9-, and 14-item scales. However, Springer and Hauser (2006) found evidence to suggest that the 3-, and 7-item scales do not actually measure six dimensions of well-being and urge caution when interpreting the results of the measure. Van Dierendonck (2005) found similar evidence when examining the 3-, 9-, and 14-item versions of the SPWB. Interestingly, van Dierendonck was able to find evidence to support the six-dimensional conceptualization without sacrificing the internal consistency of the measure by adjusting the number of items in the scales to create a new short version of the SPWB. This short version is based on the 14-item version (which shows correlations with the original 20-item scales ranging from .97-.98). The short version of the SPWB showed good internal consistency and correlations with the 14-item version ranging from .91 (environmental mastery) to .95 (self-acceptance) (van Dierendonck, 2005). Though new scales, these findings suggest that the short version of the SPWB is an acceptable measure for use in the present study. In the current study, the internal consistency reliability (Cronbach's alpha) for the entire measure was .94, similar to what was reported by the test developers.

The *Five Facet Mindfulness Questionnaire* (FFMQ; Baer et al., 2006) is a 39-item measure of a multidimensional conceptualization of mindfulness. Participants are asked to respond on a 5-point Likert-type scale with choices ranging from 1 (never or very rarely true) to 5 (very often or always true). The scale alternates items among the five facets. The FFMQ was derived using five existing mindfulness measures; the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004), the Cognitive and Affective Mindfulness Scale (CAMS; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007) and, the Mindfulness Questionnaire (MQ; Chadwick, Hember, Mead, Liley, & Dagnan, 2005 as cited in Baer et al., 2006).

In constructing the FFMQ, Baer and colleagues (2006) first sought to determine the internal consistency and concurrent and discriminate validity of the measures, as well as their relation to one another. Significant positive correlations among the mindfulness measures were found, ranging from .31 (MAAS with FMI) to .67 (KIMS with CAMS) and internal consistency coefficients were all above .80. All measures were found to demonstrate adequate validity in their relation to similar and divergent measures of interest (Baer et al., 2006).

Concluding that the psychometric soundness of the measures was established, a second phase was conducted to determine the facet structure of the mindfulness construct. Principle-axis exploratory factor analysis using eigenvalues of 1.0 or greater yielded 26 factors, accounting for 68% of the variance. However, Baer and colleagues (2006) determined that the scree plot, showing only five factors, was a more useful guide

for identifying factor structure than eigenvalues. This five-factor solution was then specified in a second principle-axis factor analysis which yielded a five-factor structure accounting for 33% of the variance. The FMMQ subscales included items with the highest loadings on the five factors and excluded those with high loadings on multiple factors to ensure integrity of the individual facets. Alpha coefficients for all five factors are as follows: nonreactivity = .75, observing = .83, acting with awareness = .87, describing = .91, and nonjudging = .87 (Baer et al., 2006).

The five-factor structure was replicated using another sample and discriminant and convergent validity were assessed (Baer et al., 2006). As hypothesized, emotional intelligence and self-compassion had significant positive correlations with the five mindfulness facets. Openness to experience showed significant positive correlations with all facets but two. For discriminant validity, as expected, alexythymia, dissociation, absent-mindedness, psychological symptoms, neuroticism, thought suppression, difficulties with emotion regulation and experiential avoidance all showed significant negative correlations with the FFMQ subscales. A notable exception to this trend involved the observe facet of the FFMQ. This subscale had no correlation with many of the constructs hypothesized to show negative relationships and positive correlations with dissociation, absent-mindedness, psychological symptoms, and thought suppression. However, when Baer et al. (2006) tested these relationships in a sub-sample of experienced meditators these correlations became non-significant while others remained unchanged or increased in the predicted direction. This suggests that the observe factors relationship with certain variables will be altered as a function of meditation experience (Baer et al., 2006).

Baer et al. (2008) conducted a follow-up study to assess the construct validity of the FFMQ in meditating and non-meditating samples. The authors replicated the adequate-to-good internal consistency of the measure and found facet inter-correlations ranging from .32 to .56. In addition, in order to see whether the five facets were representative of the overall construct of mindfulness, the authors tested a hierarchical model and found a good fit to the data. Construct validity of the measure was supported by results revealing that meditators had higher scores on the FFMQ than non-meditators. The FFMQ was also shown to have incremental validity in predicting psychological well-being in both groups, accounting for 39% of the variance. However, the observed factor did not have incremental validity over the other four factors and was again found to predict positive outcome only in the meditating sample (Baer et al., 2008). Taken together, these results support the psychometric properties of the FFMQ. In the current study, the internal consistency reliability (Cronbach's alpha) was .91, similar to what was reported by the test developers.

The *Marlowe-Crowne Social Desirability Scale – Short Form C* (M-C SDS Form C; Reynolds, 1982) is a shortened, 13-item measure of socially desirable responding based on the widely used 33-item Marlow-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960). Items are dichotomously scored with respondents answering "True" or "False" for each statement. The development sample for the M-C SDS Form C consisted of 608 undergraduate students (239 male and 369 female) (Reynolds, 1982). Principle components factor analysis was used to examine the structure of the M-C SDS and results yielded a clear single factor structure for the M-C SDS. In constructing the M-C SDS Form C, items were taken directly from the M-C SDS. Only M-C SDS items with

a factor loading of .40 or higher were included in the M-C SDS Form C (Reynolds, 1982).

The 13-item M-C SDS Form C demonstrated acceptable reliability using the Kuder Richardson 20 formula (r KR-$_{20}$ = .76). Concurrent validity was demonstrated with significant correlations between the M-C SDS Form C and the original M-C SDS (r = .93, r^2 = .86) and the Edwards Social Desirability Scale (SDS) (r = .41, r^2 = .17) (Reynolds, 1982). Lower scores between the M-C SDS Form C and the Edwards SDS were attributed to the fact that the original M-C SDS and Edwards SDS have a low correlation (Reynolds, 1982). Reynolds (1982) concludes that the M-C SDS Form C is a reliable and valid alternative measure of social desirability to the longer M-C SDS. In the current study, the internal consistency reliability (Cronbach's alpha) was .72, similar to what was reported by the test developers.

Statistics and Data Analysis

Question 1. After controlling for Big Five personality and social desirability how much variance in hedonic well-being is explained by the combination of mindfulness, experiential avoidance, and values-based action among college students?

Following the model of Sheldon and Elliot (1999) a hedonic well-being composite score was created by standardizing life satisfaction, positive and negative affect scores, summing the standardized life satisfaction and positive affect scores, and subsequently subtracting the standardized negative affect score from the combined life satisfaction, positive affect score. For this analysis, ordinary least squares multiple regression was used to determine whether mindfulness, experiential avoidance, values-based action, Big Five personality variables, and social desirability significantly

influenced college students' hedonic well-being, and to determine which variables were uniquely significantly predictive. Among the nine independent variables six were control variables: Big Five personality variables (i.e., conscientiousness, extraversion, agreeableness, openness, and neuroticism), and social desirability. These covariates were entered on the first step of the regression. The three primary independent variables of interest (mindfulness, experiential avoidance, and values-based action) were entered into the regression equation in a second step.

Question 2. After controlling for Big Five personality and social desirability how much variance in eudaimonic well-being is explained by the combination of mindfulness, experiential avoidance, and values-based action among college students?

For this analysis, ordinary least squares multiple regression was used to determine whether mindfulness, experiential avoidance, values-based action, Big Five personality variables, and social desirability had significant influences on college students' eudaimonic well-being (as measured by the SPWB), and to determine which variables were uniquely significantly predictive. Among the nine independent variables six were control variables: Big Five personality variables (i.e., conscientiousness, extraversion, agreeableness, openness, and neuroticism), and social desirability. These covariates were entered on the first step of the regression. The three primary independent variables (mindfulness, experiential avoidance, and values-based action) were entered into the regression equation in a second step. Preliminary examinations were conducted for questions 1and 2 to determine if there was any extreme multicollinearity in the data. The data was analyzed using SPSS version 15.0. Strength of association was described by R^2

change. Unique variance accounted for by variables of interest was described by standardized beta coefficient. Alpha levels were set at $p < .05$ for all analyses.

Chapter 4

Results

This chapter summarizes and describes the statistical analyses used to evaluate the

research questions and hypotheses outlined in the previous chapter. SPSS 15.0 was used

to examine all variables of interest for accuracy in data entry, missing values, the

normality of distributions, appropriate ranges and frequencies, and univariate outliers.

Preliminary Analyses

To ensure that no outliers were influencing the data, separate multiple regressions

run on the dependent variables hedonic well-being and eudaimonic well-being were

examined to determine if any data points had a Mahalanobis distance of greater than

23.17, a Cook D value greater than 1, and a leverage (LEVER) value ($n = 174$, $k = 9$)

greater than 0.17 was used (Stevens, 2002). For both hedonic well-being and eudaimonic

well-being, two cases were found with a Mahalanobis distance greater than 23.17.

Additional multiple regressions were run on the dependent variables to determine if these

were substantively influential data points. Regression results indicated that the data points

did not influence the significance level of the independent variables in the model. Thus,

the two cases were retained and a total of 174 participants were used in study analysis.

To assess for curvilinearity and the assumption of homoscedastisity, regressions

were run on both dependent variables. Review of the scatterplots for hedonic well-being,

and eudaimonic well-being suggested that curvilinearity was not present in the data and

no pattern in the plot suggested a violation of the assumption of homoscedastisity.

Subsequent review of the normal P-P plot of regression standardized residual suggested

the assumption of normality was met. There does not appear to be a violation of

normality due to the normal distribution of the participants, ascertained through review of the histograms for hedonic well-being and eudaimonic well-being.

No univariate outliers were present for independent variables social desirability, openness, extraversion, agreeableness, conscientiousness, neuroticism, experiential avoidance, mindfulness, and values-based action. In addition, one-way analysis of variance (ANOVA) procedures were used to determine if any group differences existed within demographic variables in relation to both hedonic and eudaimonic well-being and no differences were found. Therefore, analyses for this study were run on the whole sample, which included a total of 174 participants.

Research Question 1

After controlling for the Big Five personality variables openness, extraversion, agreeableness, conscientiousness, neuroticism, and social desirability how much variance in hedonic well-being is explained by the combination of mindfulness, experiential avoidance, and values-based action among college students?

For question 1, hierarchical regression analysis was conducted to determine whether, mindfulness, experiential avoidance, and values-based action would significantly predict hedonic well-being after controlling for the effects of the Big Five personality variables (i.e., conscientiousness, agreeableness, extraversion, neuroticism, and openness), and social desirability, and if so, which variable is the strongest predictor of hedonic well-being. Hedonic well-being was represented by a composite score combining SWLS and PANAS scores. This composite score was created by standardizing SWLS and PANAS scores, adding standardized SWLS and PA scores, and subsequently subtracting standardized NA scores from the sum of standardized SWLS and PA scores

(Sheldon & Elliot, 1999). An alpha level of $\alpha = .05$ was used to assess statistical significance.

Preliminary exploratory analyses in the hierarchical regression indicated there were no multicollinearity problems in the data as evidenced by the variance inflation factors (VIF) being less than 10 (Stevens, 2002). The largest VIF was 2.236 for the regression with hedonic well-being as the dependent variable. The Big five personality variables, extraversion, conscientiousness, neuroticism, agreeableness, and openness, and social desirability significantly accounted for 27% of the variance in hedonic well-being ($R^2 = .266$, $F (6, 167) = 10.098$, $p < .001$) and extraversion ($\beta = .149$), conscientiousness ($\beta = .176$), and neuroticism ($\beta = -.377$) had a unique significant influence on hedonic well-being (see Tables 1 and 2). The variables of interest mindfulness, experiential avoidance, and values-based action were entered on step two of the hierarchical regression and the amount of variance explained between steps one and two was calculated. The increase in variance explained by mindfulness, experiential avoidance, and values-based action was statistically significant, accounting for an additional 5% of variance in the model ($R^2\text{-}change = .048$; $F_{change} (3, 164 = 3.826$, $p < .05$) and neuroticism ($\beta = -.247$) and experiential avoidance ($\beta = -.202$) had a unique significant influence on hedonic well-being. Of the variables of interest, experiential avoidance accounted for the greatest magnitude of influence on hedonic well-being, accounting for 20.2% of the variance in the model (see Tables 1 and 2).

Table 1

Heirarchical Regression Correlations, Means, and Standard Deviations for Hedonic WB (HWB)

	1	2	3	4	5	6	7	8	9	10
1. HWB	-									
2. AAQ	-.46**	-								
3. FFMQ	.43**	-.66**	-							
4. BVI	-.15*	.33**	-.36**	-						
5. BFI_op	.10	.03	.05	-.05	-					
6. BFI_neu	-.43**	.59**	-.51**	.31**	.07	-				
7. BFI_ag	.19*	-.21**	.28**	-.03	.05	-.19*	-			
8. BFI_con	.26**	-.30**	.28**	-.15**	.12	-.12	.20**	-		
9. BFI_ex	-.20**	-.12	.19*	-.11	.01	-.12	.02	.05	-	
10. MC-SDS	-.21**	-.37**	-.47**	.20**	.02	.34**	-.27**	-.23**	.03	-
M	.000	32.07	131.73	.177	3.17	5.67	7.52	7.62	6.62	6.98
SD	1.35	6.98	20.92	.963	1.42	2.14	1.82	1.75	2.09	3.02

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

Table 2

Summary of Hierarchical Regression Analysis for Hedonic Well-Being

Variable	B	Beta	T
Step 1			
1. BFI_op	.101	.106	1.581
2. BFI_neu	-.239	-.377	-5.261**
3. BFI_ag	.046	.062	.890
4. BFI_con	.136	.176	2.535*
5. BFI_ex	.096	.149	2.223*
6. MC-SDS	-.012	-.028	-.378
Step 2			
1. BFI_op	.100	.105	1.595
2. BFI_neu	-.156	-.247	-2.960**
3. BFI_ag	.027	.036	.526
4. BFI_con	.096	.125	1.777
5. BFI_ex	.079	.123	1.839
6. MC-SDS	.016	.036	.479
7. AAQ	-.039	-.202	-2.105*
8. FFMQ	.009	.138	1.432
9. BVI	.100	.071	.999

Note. R^2 = .266 for Step 1 ($p < .001$); ΔR^2 = .048 for Step 2 ($p < .02$).

* $p < .05$. ** $p < .01$.

Research Question 2

After controlling for Big Five personality and social desirability how much variance in eudaimonic well-being is explained by the combination of mindfulness, experiential avoidance, and values-based action among college students?

For question 2, a hierarchical regression analysis was conducted to determine whether, mindfulness, experiential avoidance, and values-based action would significantly predict eudaimonic well-being after controlling for the effects of the Big Five personality variables (i.e., conscientiousness, agreeableness, extraversion, neuroticism, and openness), and social desirability, and if so, which variable is the strongest predictor of eudaimonic well-being. An alpha level of $\alpha = .05$ was used to assess statistical significance.

Preliminary exploratory analyses in the hierarchical regression indicated there were no multicollinearity problems in the data as evidenced by the variance inflation factors (VIF) being less than 10 (Stevens, 2002). The largest VIF was 2.236 for the regression with eudaimonic well-being as the dependent variable. For the hierarchical regression, the independent variables social desirability, and Big Five personality factor scores (i.e., conscientiousness, agreeableness, extraversion, neuroticism, and openness) were entered on the first step of the regression equation. The independent variables mindfulness, experiential avoidance, and values-based action were then entered into the regression equation on the second step. The Big Five personality variables extraversion, conscientiousness, neuroticism, agreeableness, and openness, and social desirability significantly accounted for 45% of variance in eudaimonic well-being ($R^2 = .449$, F (6, 167) = 22.649, $p < .001$) and social desirability ($\beta = -.176$), extraversion ($\beta = .175$),

conscientiousness (β = .237), and neuroticism (β = -.407) had a unique significant influence on eudaimonic well-being (see Tables 3 and 4). The variables of interest mindfulness, experiential avoidance, and values-based action were entered on step two of the hierarchical regression and the amount of variance explained between steps one and two was calculated. The increase in variance explained by mindfulness, experiential avoidance, and values-based action was statistically significant, accounting for an additional 17% of variance in the model (R^2-change = .169; F_{change} (3, 164 = 24.154, p < .001) and extraversion (β = .101), conscientiousness (β = .138), neuroticism (β = -.151), mindfulness (β = .405), and experiential avoidance (β = -.199) had a unique significant influence on eudaimonic well-being. Of the variables of interest, mindfulness had the greatest magnitude of influence on eudaimonic well-being, accounting for 41% of the variance in the model (see Tables 3 and 4).

Table 3

Heirarchical Regression Correlations, Means, and Standard Deviations for Eudaimonic WB (SPWB)

	1	2	3	4	5	6	7	8	9	10
1. SPWB	-									
2. AAQ	-.65**	-								
3. FFMQ	.72**	-.66**	-							
4. BVI	-.34**	.33**	-.36**	-						
5. BFI_op	.03	.03	.05	-.05	-					
6. BFI_neu	-.54**	.59**	-.51**	.31**	.07	-				
7. BFI_ag	.30**	-.21**	.28**	-.03	.05	-.19*	-			
8. BFI_con	.36**	-.30**	.28**	-.15**	.12	-.12	.20**	-		
9. BFI_ex	.23**	-.12	.19*	-.11	.01	-.12	.02	.05	-	
10. MC-SDS	-.39**	-.37**	-.47**	.20**	.02	.34**	-.27**	-.23**	.03	-
M	4.66	32.07	131.73	.177	3.17	5.67	7.52	7.62	6.62	6.98
SD	.709	6.98	20.92	.963	1.42	2.14	1.82	1.75	2.09	3.02

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

Table 4

Summary of Hierarchical Regression Analysis for Eudaimonic Well-Being (SPWB)

Variable	B	Beta	T
Step 1			
1. BFI_op	.012	.024	.416
2. BFI_neu	-.135	-.407	-6.541**
3. BFI_ag	.046	.119	1.964
4. BFI_con	.096	.237	3.934**
5. BFI_ex	.059	.175	3.008**
6. MC-SDS	-.041	-.176	-2.759**
Step 2			
1. BFI_op	.000	-.001	-.011
2. BFI_neu	-.050	-.151	-2.429*
3. BFI_ag	.030	.076	1.471
4. BFI_con	.056	.138	2.637**
5. BFI_ex	.034	.101	2.024*
6. MC-SDS	-.005	-.020	-.355
7. AAQ	-.020	-.199	-2.787**
8. FFMQ	.014	.405	5.605**
9. BVI	-.030	-.041	-.775

Note. R^2 = .449 for Step 1 ($p < .00$); ΔR^2 = .169 for Step 2 ($p < .00$).

* $p < .05$. ** $p < .01$.

Chapter 5

Discussion

Previous research has shown that well-being has significant implications for human welfare and quality of life. College students have been shown to be a population that is potentially at risk for deficits in well-being (e.g., Adlaf et al., 2001), in addition to being amenable to positive outcomes associated with increased well-being (Lyubomirsky et al., 2005). Further, interventions to enhance well-being have been shown to be effective and may prove to be helpful for college students (Sin & Lyubomirsky, 2009). Existing research shows that well-being is a complex construct composed of both hedonic and eudaimonic elements (Ryan & Deci, 2001), and suggests that additional research into predictors of well-being would enhance scientific understanding and inform intervention efforts. Additionally, it is clear that any research examining predictors of well-being must take into account the Big Five personality variables extraversion, conscientiousness, neuroticism, openness, and agreeableness as they have been found to be consistently associated with both hedonic and eudaimonic well-being. The ACT variables mindfulness, experiential avoidance and values-based action are thought to be predictive of well-being (Hayes et al., 1999) and research has demonstrated the link between both mindfulness (Brown & Ryan, 2003) and experiential avoidance (Kashdan & Breen, 2007) and well-being in college students. Further, research has shown the utility of incorporating mindfulness, experiential avoidance and values-based action in interventions for college students (e.g., Lillis & Hayes, 2007). College student developmental theory suggests that values-based action is predictive of well-being (Taylor, 2008). However, past studies have neither examined values-based action in

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relation to college student well-being, nor taken into account the Big Five personality variables in research models investigating mindfulness and experiential avoidance.

In sum, existing research has: focused on personality as a main predictor of well-being (i.e., both hedonic and eudaimonic), shown the link between increased levels of well-being and improved functioning of college students, shown the efficacy of well-being enhancing interventions, connected mindfulness, experiential avoidance and college student well-being, conceptualized a link between values-based action and college student well-being, and used ACT intervention with college students.

Therefore, the intent of this research was twofold: to incorporate values-based action in a predictive model of college student hedonic and eudaimonic well-being with mindfulness and experiential avoidance, and to examine this relationship after controlling for the effects of the Big Five personality factors (i.e. conscientiousness, extraversion, neuroticism, agreeableness, openness).

Research Question 1

The hypothesis that higher degrees of mindfulness, experiential avoidance and values-based action will account for a significant amount of variance in hedonic well-being over and above Big Five personality factors conscientiousness, neuroticism, extraversion, openness, and agreeableness in college students was partially supported. Experiential avoidance predicted hedonic well-being over and above the effects of Big Five personality factors and social desirability; however mindfulness and values-based action were not predictive over and above the effects of Big Five personality factors and social desirability in this sample.

These results are consistent with Hayes et al.'s (1996) and Kashdan and Breen's (2007) suggestion that experiential avoidance is a fundamental toxic process, antithetical to well-being and the existing, albeit limited, empirical research (i.e., Kashdan et al., 2006; Kashdan & Breen, 2007; Kortte et al., 2009) on the relationship between experiential avoidance and hedonic well-being. Further, these results extend previous research by showing that the negative influence of experiential avoidance exists even after taking into account social desirability and one of the most common significant predictors of hedonic well-being, namely the Big Five personality factors conscientiousness, extraversion, neuroticism, agreeableness, and openness. However, these results indicated that mindfulness and values-based action were not predictive of college student hedonic well-being after accounting for control variables. Additionally, these results are the first to examine the predictive relationship between values-based action and hedonic well-being in a college student sample.

Considering Brown et al.'s 2007 perspective on mindfulness, one explanation for these findings may be due to measurement. The current study used the Five Factor Mindfulness Questionnaire (FFMQ). The FFMQ was developed by combining the many mindfulness measures available at the time and factor analyzing the measures to determine the most psychometrically sound items and theoretically relevant factors (from a Dialectical Behavior Therapy perspective) into one comprehensive measure (Baer et al., 2006). However, Brown et al. contend that the FFMQ may not be the most accurate representation of mindfulness and that one of the factors of the FFMQ may actually be associated with decreased levels of well-being.

To examine the merit of this concern for the current study, post-hoc analyses were conducted using linear regression analysis to determine if mindfulness was predictive of college student hedonic well-being without the control variables. Consistent with previous research findings (i.e., Baer et al., 2008), results found that mindfulness positively predicted hedonic well-being (β = .429; $p < .001$). Thus, the non-significant finding between mindfulness and a composite hedonic well-being score after controlling for Big Five personality and social desirability does not appear to be due to measurement concerns. This finding may be partly due to overlapping variance between mindfulness and experiential avoidance and Big Five personality variables. For example, conscientiousness is thought to share qualities with mindfulness such as thoughtfulness, and deliberate action while extraversion and mindfulness may share traits such as being energized by experiences (Giluk, 2009). These factors along with shared variance between experiential avoidance and mindfulness (i.e., a correlation of -.66 was observed) may account for this non-significance finding.

Similarly, research has shown that differences in mindfulness exist between meditators and non-meditators (Baer et al., 2008; Brown & Ryan, 2003). Thus, it is possible that because the current sample is largely made up of inexperienced meditators, mindfulness traits are more easily attributable to variance in hedonic well-being accounted for by the more general Big Five personality traits. It could be that in a sample of experienced meditators, mindfulness would predict hedonic well-being over and beyond Big Five personality factors. These results may indicate that after taking into account the influence of personality factors and social desirability, mindfulness has a negligible impact on hedonic well-being.

Finally, as Brown and Ryan (2003) suggested, it is possible that mindfulness partially influences hedonic well-being because of differing relationships with its component parts. Post-hoc multiple regression analyses were conducted to test this hypothesis incorporating mindfulness, experiential avoidance, and values-based action after accounting for control variables. Indeed, mindfulness only accounted for part of hedonic well-being, predicting positive affect (PA) ($\beta = .245$; $p < .01$), but not negative affect (NA), or life satisfaction. These results contradict previous assertions that mindfulness negatively predicts NA, positively predicts life satisfaction, and does not predict PA (Brown & Ryan, 2003). However, previous studies have shown predictive utility for mindfulness and PA (e.g., Weinstein et al., 2009) and Giluk's (2009) meta-analysis showed that despite mixed data on the relationship between PA and mindfulness, a moderate positive correlation between the two was found. These findings suggest that being more mindful increases positive affect beyond personality variables, social desirability, experiential avoidance, and values-based action.

However, the current finding that mindfulness did not predict NA or life satisfaction also contradicts previous research. The current study incorporated experiential avoidance, values-based action and Big Five personality variables, whereas previous studies did not. It is possible that when considering all of the variables examined in the current study, mindfulness does not significantly predict negative affect or life satisfaction and only contributes to positive affect. Additional research, possibly considering mediating or moderating variables, may shed more light on what accounts for these findings.

The current research also did not find evidence for the predictive utility of values-based action for college student well-being after controlling for the Big Five personality factors and social desirability. Two different hypotheses may account for this non-significant finding. First, although developmental theory suggests that a construct such as values-based action should predict college student well-being (Taylor, 2008), it is possible that college students, still in the early stages of adult development, have not yet determined their values and are therefore unable to act in value-congruent ways. A second hypothesis pertains to the way hedonic well-being was measured in the current study. Similar to the explanation of why a significant result was not obtained for mindfulness, values-based action may not predict all components of hedonic well-being and would therefore produce a non-significant result. It is possible that values-based action, being a cognitive judgment of the importance of values in ones life, and the success one has at living by ones values, is more predictive of the life satisfaction component of hedonic well-being, as life satisfaction is representative of a global cognitive judgment, while PA and NA represent affective components (Diener et al., 1999). Post-hoc hierarchical regression analysis was conducted to test whether values-based action was predictive of the individual components of hedonic well-being and consistent with the aforementioned hypothesis, values-based action was found to predict life satisfaction ($p < .01$) but not PA and NA after accounting for the control variables. However, more research is needed to determine the relationship between values-based action and hedonic well-being.

Finally, it is worth noting that extraversion and conscientiousness were no longer significant after the variables of interest were added to the regression model, while

neuroticism remained significant. Researchers have long held that the most significant predictors of hedonic well-being are personality variables (Diener et al., 1999), and of the Big Five, extraversion, conscientiousness, and neuroticism have often been reported as the strongest predictors (Diener et al., 1999; Keyes et al., 2002). These findings suggest that ACT variables may play a larger role in hedonic well-being outcome than two of the three main Big Five predictors. Neuroticism continued to be a significant predictor even after the addition of mindfulness, experiential avoidance and values-based action. This result is not surprising given the moderately high correlations with experiential avoidance ($r = .586$) and mindfulness ($r = -.507$) and the fact that neuroticism is considered to be a more broad construct (Rammstedt & John, 2007). The current findings suggest that mindfulness, experiential avoidance, and values-based action have some overlap with these personality variables but that, as a whole, they contribute unique variance to hedonic well-being. Future models incorporating mindfulness, experiential avoidance, values-based action and hedonic well-being should examine personality variables to further elucidate their role in relationship to these constructs.

Research Question 2

The hypothesis that higher degrees of mindfulness, experiential avoidance and values-based action will account for a significant amount of variance in eudaimonic well-being over and above the Big Five personality factors conscientiousness, neuroticism, extraversion, openness, and agreeableness in college students was partially supported. Experiential avoidance and mindfulness predicted eudaimonic well-being over and above the effects of the Big Five personality factors and social desirability; however values-based action was not predictive in this sample.

As was the case with hedonic well-being, experiential avoidance negatively predicted college student eudaimonic well-being. This finding is consistent with theory that suggests that experiential avoidance is a universally negative factor for positive outcome and well-being (Hayes et al., 1996). It is also consistent with the only other empirical study of the relationship between experiential avoidance and a conception of eudaimonic well-being (i.e., Kashdan & Breen, 2007). However, this study extends previous literature by controlling for the Big Five personality factors and social desirability, suggesting that experiential avoidance predicts negative outcome in eudaimonic well-being beyond well-known predictors and potential confounds.

Ryff (1989) derived her measure of eudaimonic well-being from an extensive review of clinical, mental health, and developmental theory and argued that these perspectives have similar conceptions of positive mental health that are optimistic about life, and emphasize personal growth and development (van Dierendonck, 2005). The SPWB contain many items that attempt to capture whether an individual is accepting of oneself and outwardly engaged with life. Experiential avoidance is marked by trying to close oneself to life experiences or shut them out. From this perspective, it makes intuitive sense that experiential avoidance negatively predicts eudaimonic well-being. Autonomy, environmental mastery, positive relations with others, personal growth, self-acceptance, and purpose in life are all purported areas measured by the SPWB (Ryff, 1989; van Dierendonck, 2005) and it is particularly striking that a life strategy that attempts to control and shut out unwanted experiences (i.e., experiential avoidance) would have such wide-ranging implications for college students. Further, It is possible that higher levels of experiential avoidance may be more costly to college students than

to those who develop this process later in life because students who engage in experiential avoidance might close themselves off to many of the healthy and growth producing processes that college attendance promotes (Taylor, 2008) thereby stunting future positive adaptation, growth and success in post-college life.

Mindfulness also was shown to be predictive of college student well-being in this study. Similar to experiential avoidance, it makes sense that mindfulness predicted college student eudaimonic well-being in this sample. Mindfulness is a process that promotes an individual seeing themselves as they are, moment to moment, without judgment (Brown & Ryan, 2003) and "is intimately connected with the joys and sorrows of daily living, its activities, dilemmas, and intellectual occupations" (Khong, 2009). It is possible that such intimate observation of oneself creates knowledge and understanding that engenders more useful ways of living, and is thereby more indicative of eudaimonic concepts such as realizing one's potential, being true to oneself, living authentically and in harmony with others (Ryan & Deci, 2001) than hedonic formulations. From this perspective, mindfulness can be thought of as a way to acquire an intimate understanding of oneself that influences an individual to live well in eudaimonically consistent ways.

With regard to orienting oneself to life, mindfulness appears to be antithetical to experiential avoidance in this college student sample, whereas experiential avoidance can be thought of as a process for preventing life experiences, mindfulness is more indicative of not only allowing life experiences to occur but of embracing them fully and with non-judgment. Assuming that mindfulness and experiential avoidance are opposite processes, mindfulness might serve to moderate the relationship between experiential avoidance and eudaimonic well-being in college students as Acceptance and Commitment Therapy

theorists have more generally argued (Hayes et al., 1999), making mindfulness training a potentially powerful tool for increasing eudaimonic well-being and its myriad benefits for college students even in the presence of negative well-being predictors like experiential avoidance.

Similar to findings for hedonic well-being, values-based action did not predict eudaimonic well-being in this college student sample after controlling for the Big Five personality variables conscientiousness, extraversion, neuroticism, agreeableness, and openness and social desirability. As noted earlier, it is possible that college students have not yet formed their values and therefore cannot live in values-consistent ways, however, this hypothesis appears to be less plausible in the face of the aforementioned post-hoc finding that values-based action predicted the cognitive component of hedonic well-being (i.e., life satisfaction) while the relationships for the affective components (i.e., PA and NA) were non-significant.

As mentioned previously, it is possible that the cognitive judgment of values importance and success measured in the values-based action construct may be more related to the global cognitive judgment of well-being rather than affect. However, eudaimonic well-being as measured in the current study is also measured through cognitive judgments (Ryff, 1989); therefore it is less likely that values-based action leads to cognitive judgments of well-being alone. Diener et al. (1998) assert that one of the main differences between the hedonic and eudaimonic conceptualizations of well-being used in this study is that eudaimonic well-being is theoretically derived by experts (i.e., researchers and theorists), while hedonic well-being allows the lay person to define their own level of well-being irrespective of expert opinion. It is possible that values-based

action does not predict the theoretically derived expert definitions consistent with eudaimonic well-being but is predictive of the cognitive self-assessment of hedonic well-being in college students. This is the first empirical study to examine the relationship between values-based action and eudaimonic and hedonic well-being and more research is needed to clarify these questions.

Limitations

Although the current study adds to the collective scientific understanding of the relationship between Acceptance and Commitment Therapy (ACT) variables mindfulness, experiential avoidance, and values-based action and well-being in college students there are several important limitations that must be considered. First, despite the fact that using all self-report measures (as was done in this study) is part of the process of survey research, and though participants were guaranteed confidentiality, the potential for biased results is still possible. Further, the cross-sectional nature of the data limits the degree to which causal inferences can be made. In addition, the generalizability of the sample is limited, as it lacked diversity with regard to race and sexual orientation. The current study did not take deliberate steps to recruit a culturally diverse sample of students and future emphasis on bolstering sample diversity will serve to increase generalizability and understanding of multicultural aspects of ACT variables and well-being. Additionally, despite growing evidence supporting the FFMQ as the most comprehensive and accurate measure of mindfulness, there is still some debate over how best to conceptualize the construct and results might be different if a different operating definition of mindfulness was used. Further, the measures used for eudaimonic well-being (revised SPWB; van Dierendonck, 2005) and values-based action (BVI;

McCracken & Yang, 2006), though replicating strong previously reported psychometric properties, are relatively new and have little research examining their use. However, they do represent the best measures available for these constructs. Finally, despite the fact that the brief measure used to control for the Big Five personality variables conscientiousness, extraversion, neuroticism, agreeableness, and openness (i.e., the BFI-10) is the best available brief measure of the Big Five, and adequate alpha levels were found for extraversion, agreeableness, and neuroticism, its psychometric properties were less than preferable for agreeableness and openness (Rammstedt & John, 2007).

Implications for Counseling Psychology

This research has a number of different implications for counseling psychologists. One of the areas counseling psychologists have traditionally focused on is prevention (Howard, 1992). The current study suggests that college student gains in well-being could be possible through interventions incorporating ACT variables such as mindfulness and values-based action, thereby buffering students from potential mental health declines during college. Further, the current study's focus on well-being rather than psychological deficits places counseling psychologists in an ideal position to conduct further research on this topic since the enhancement of normal functioning has long been held as a tenant of the discipline (Howard, 1992; Watkins, 1994). In addition, because of the emphasis on prevention and psychological enhancement, counseling psychologists are in a prime position to conduct research on mindfulness and values-based action (Watkins, 1994), which represent two constructs whose mechanism of action is thought to exist primarily through enhancing individual quality of life (Hayes et al., 1999; Khong, 2009). Reduction of psychological symptoms is an indirect benefit of mindfulness and values-based action.

The importance of observing individuals from a holistic perspective has also been emphasized by counseling psychologists (Howard, 1992). Thus, combining hedonic and eudaimonic conceptions to create holistic measures of well-being, as well as utilizing mindfulness and values-based action, both constructs that aim to help the individual consider their whole self, would seem to be of interest to counseling psychologist researchers and clinicians alike. Additionally, concepts related to values-based action, mindfulness, and experiential avoidance could be utilized by vocationally-oriented counseling psychologists who seek to empower college students to consider how values exploration, and being non-judgmentally present and accepting of their reactions concerning selecting potential career options could enhance self-congruent choices, thereby potentially leading to greater well-being (Howard, 1992). Further, Kabat-Zinn (2003) has emphasized the importance of not taking mindfulness out of the eastern spirituality context, from which it has been borrowed. Given that mindfulness incorporates components that are unfamiliar, if not out-right alien to western culture, counseling psychologists are uniquely positioned to further research these factors, having spearheaded many developments in multicultural issues in psychology over the years (Watkins, 1994).

Finally, as clinical psychology continues to separate science from practice, the scientist-practitioner model becomes an ever stronger asset to counseling psychologists who are ideal candidates to conduct methodologically diverse research and uniquely inform relatively new constructs (Watkins, 1994) such as mindfulness, experiential avoidance, and values-based from both perspectives. Given the aforementioned factors,

counseling psychologists are well-positioned to become leaders of future developments in these areas.

Future Research

Further research is indicated to expand on and clarify the findings of this study. For example, the lack of research examining experiential avoidance and values-based action in college student well-being suggests that more research is needed to replicate and further clarify these findings. Further, the current study reported on the predictive utility of experiential avoidance and values-based action for well-being after taking into account personality factors, however potentially mediating and moderating variables were not explored. Self-esteem and social support have been shown to be two strong predictor variables for well-being (Diener et al., 1999) and it could be that one or both of these variables serve as buffers against the negative implications of experiential avoidance for well-being. It is also possible that age moderates the relationship between values-based action and well-being. Path analytic or structural equation statistical models could be helpful in further explaining exactly why relationships found in the current study do or do not exist.

In addition, a note on the future study of well-being is warranted. Hedonic and eudaimonic measures offer different yet complimentary perspectives on well-being. For example, hedonic well-being captures perceptions of happiness that are imposed by the rater and also represent a empirically derived construct (Deiner, 1984), while eudaimonic well-being incorporates theoretically derived concepts that define the meaning of "being well" beyond pleasure and discomfort (Ryff, 1989). This study found that ACT components differed in their relationships to hedonic and eudaimonic well-being,

suggesting that predictors affect well-being types in different ways. Therefore, in-line with Ryan and Deci's (2001) conclusions, the current study recommends that future well-being research incorporate both hedonic and eudaimonic measures in order to more fully capture the construct of well-being and better understand the impact of predictors.

Qualitative research will be important for furthering the understanding of ACT variables and college student well-being. For example, a variety of mindfulness measures exist in the literature today however relatively little is known about the construct validity of these measures. Qualitative research examining the experience and process of both novice and experienced mindfulness practitioners would be useful for deepening understanding of this construct. This method of study would allow researchers to determine essential components of mindfulness and further refine measurements for future quantitative investigation. Similarly, further understanding of the types of values consistent with college students is indicated. It is possible that college students do not hold the same values as the non-college student's and qualitative research would be useful in gathering data on this subject.

Conclusions

Overall, the results of this study indicate that the hedonic and eudaimonic well-being of college students is partially influenced by the ACT variables experiential avoidance, mindfulness, and values-based action after taking into account the effects of the Big Five personality variables conscientiousness, extraversion, neuroticism, agreeableness, and openness, and social desirability. Specifically, experiential avoidance proved to negatively predict both hedonic and eudaimonic well-being, while mindfulness positively predicted eudaimonic well-being only, and values-based action did not predict

either form of well-being. Additionally, out of the variables of interest experiential avoidance was the most predictive of hedonic well-being, while mindfulness was the most predictive of eudaimonic well-being. This is the first study to examine the ACT variables mindfulness, experiential avoidance, and values-based action in relation to both hedonic and eudaimonic well-being in college students after controlling for the Big Five personality variables providing new understanding of ways a more holistic conception of college student well-being can be affected by variables targeted in ACT, despite the influence of common predictors.

Finally, these results have clinical implications in that those working with students high in experiential avoidance should be aware that these persons are at increased risk of having deficits in well-being, which could lead to negative outcomes in a variety of other areas. Further, mindfulness practice is suggested as a primary means for addressing experiential avoidance (Hayes et al., 1996). This point suggests that those working with students may find it useful and cost effective to employ brief mindfulness training to students as a means of reducing experiential avoidance and improving well-being. Further, the current findings also suggest that increased mindfulness itself leads to higher well-being, possibly irrespective of levels of experiential avoidance. Finally, college counselors and psychologists should note that these findings were present even when taking into account the Big Five personality factors, suggesting that, regardless of personality disposition mindfulness and experiential avoidance have significant implications for hedonic and eudaimonic well-being.

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Informed Consent

Dear Student:

Thank you for taking the time to read about our study. We are interested in investigating what impacts happiness and well-being in college students. We would greatly appreciate you taking time from your busy schedule to participate in this study.

Completion of the survey should take approximately 30 minutes. Every effort was made in the design of the study to ensure the confidentiality and anonymity of each participant. Further, all analyses will be performed on group data and confidentiality of data will be maintained within the limits allowed by law. A raffle for two $50 prizes is being conducted for the participants in this study. After completing the survey, you can choose to link to a separate web address where you can enter your e-mail address for the raffle.

The results of this research may be published. However, every effort will be made to ensure anonymity of each participant in any publication. Your participation in this research study is completely voluntary and you may withdraw from participation at any time without consequence. Finally, there are no known risks associated with participation in this study beyond those encountered in everyday life. There is no compensation for participating in this study. The University of Memphis does not have any funds budgeted for compensation for injury, damages, or other expenses.

If you have any questions about this study, please call/e-mail the investigators: Michael Karakashian, M.S. at (804) 937-0727, mkarkshn@memphis.edu, Dr. Sara Bridges at (901) 678-2081, sbridges@memphis.edu, or Christi Mobley, M.A. at (901) 238-6251, cmobley79@yahoo.com. If you have additional questions regarding research rights, the Chair of the University of Memphis Institutional Review Board for the Protection of Human Subjects may be contacted at (901) 678-2533.

Your agreement to participate in this study indicates that you have read the informed consent letter, you will allow the researchers to include your data in the aggregate data set, and you may withdraw from the study at any time without consequence.

You may indicate your consent to participate in this research study by checking the box below. Thank you very much for your time, consideration, and support.

Sincerely,

Michael Karakashian, M.S.
Doctoral Candidate
The University of Memphis
Department of Counseling, Educational Psychology and Research

I have read the informed consent and agree to participate in this study.

Yes

No

I am not currently enrolled as a college student, so I am not eligible to participate.

Demographics Questionnaire

Demographic Information

1. Your Age: ☐

2. How many years have you taken classes in a college or university: ☐

3. Gender
o Female
o Male
o Other   ☐

4. What is your current grade point average (GPA)?

5. What type of degree are you seeking?
o Undergraduate
o Graduate
o Doctorate
o Other   ☐

6. Which of the following best describes your ethnicity?
o African American
o Asian American
o Caucasian
o Latino/Latina
o Native American
o Multiracial: ☐
o Other: ☐

7. Please estimate your family of origins yearly income level in U.S. dollars before taxes?
o Under $10,000
o $10,000 - $19,999
o $20,000 - $29,999
o $30,000 - $39,999
o $40,000 - $49,999
o $50,000 - $74,999
o $75,000 - $99,999
o $100,000 - $150,000
o Over $150,000

8. Have you ever engaged in any type of yoga, mindfulness meditation, or other meditation practice?

[ ]

9. If yes to number 8, please briefly describe the type of practice you have engaged in:

[   ]

10. If yes to number 8, which of the following best describes how often you currently practice meditation?
o Never
o Less than monthly
o One or more times per month
o More than once per week
o Daily
o More than once per day

11. If you have practiced yoga in the past, please indicate which of the following best describes how often you currently practice?
o Never
o Less than monthly
o One or more times per month
o More than once per week
o Daily
o More than once per day

Experiential Avoidance

The Acceptance and Action Questionnaire (AAQ; Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., et al., 2004)

Instructions:
Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choice.

```
1--------------2--------------3---------------4--------------5-------------6--------------7
Never      very seldom  seldom      sometimes   frequently  almost always  always
true          true        true        true         true        true        true
```

_____ 1. I am able to take action on a problem even if I am uncertain what is the right thing to do.

_____ 2. When I feel depressed or anxious, I am unable to take care of my responsibilities.

_____ 3. I rarely worry about getting my anxieties, worries, and feelings under control.

_____ 4. I'm not afraid of my feelings.

_____ 5. Anxiety is bad.

_____ 6. If I could magically remove all the painful experiences I've had in my life, I would do so.

_____ 7. I often catch myself daydreaming about things I've done and what I would do differently next time.

_____ 8. When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.

_____ 9. When I compare myself to other people, it seems that most of them are handling their lives better than I do.

Appendix D

Big Five Personality

Big Five Inventory-10 (BFI-10; Rammstedt & John, 2007)

INSTRUCTIONS:
Please rate how well the following statements describe your personality from 1-5.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

I see myself as someone who…

_____...is reserved

_____...is generally trusting

_____...tends to be lazy

_____...is relaxed, handles stress well

_____...has few artistic interests

_____...is outgoing, sociable

_____...tends to find fault with others

_____...does a thorough job

_____...gets nervous easily

_____...has an active imagination

Hedonic Well-Being

Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegan, 1988)

Directions
This scale consists of a number of words that describe different feelings and emotions.
Read each item and then circle the appropriate answer next to that word. Indicate to what
extent you have felt this way during the past few weeks.
Use the following scale to record your answers.

(1) = Very slightly   (2) = A little   (3) = Moderately   (4) = Quite a bit   (5) = Extremely
     or not at all

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5
17. Attentive	1	2	3	4	5
18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

Hedonic Well-Being

Satisfaction with Life Scale (SWLS, Diener, Emmons, Larsen, & Griffin, 1985)
Below are five statements that you may agree or disagree with. Using the 1 - 7 scale
below, indicate your agreement with each item by placing the appropriate number on the
line preceding that item. Please be open and honest in your responding.

7 - Strongly agree
6 - Agree
5 - Slightly agree
4 - Neither agree nor disagree
3 - Slightly disagree
2 - Disagree
1 - Strongly disagree

_____ 1. In most ways my life is close to my ideal.

_____ 2. The conditions of my life are excellent.

_____ 3. I am satisfied with my life.

_____ 4. So far I have gotten the important things I want in life.

_____ 5. If I could live my life over, I would change almost nothing.

Scoring:

31 - 35 Extremely satisfied
26 - 30 Satisfied
21 - 25 Slightly satisfied
20   Neutral
15 - 19 Slightly dissatisfied
10 - 14 Dissatisfied
 5 - 9 Extremely dissatisfied

Values-Based Action

Brief Values Inventory (BVI; McCracken & Yang, 2006)

Many people <u>have</u> **"VALUES"** but are not <u>living</u> according to their values.
For example, you may want to be a loving partner, a warm and supportive parent, a helpful and reliable friend, a person who keeps physically fit and able, or a person who is always learning new skills, but you may find yourself in circumstances where you are not living that way.

For each of the areas listed below consider how you most want to live your life. Then rate how <u>IMPORTANT</u> each domain is for you. This is <u>NOT</u> about how well you are doing in each area – it is about how important it is to you. Rate the importance you place in each domain using any number on the scale from 0 (not at all important) to 5 (extremely important). Each area need not be important to you - **rate an area low if it is not important to you personally**.

0	1	2	3	4	5
Not at all Important	**Slightly Important**	**Somewhat Important**	**Moderately Important**	**Very Important**	**Extremely Important**

Consider each area according to your values, the important ways that you most want to live your life in each domain.	<u>IMPORTANCE</u> **Of This Domain To You**
1. FAMILY: Participation in your relationships with your parents, children, other close relatives, people you live with, or whoever is your "family."	
2. INTIMATE RELATIONS: Being the kind of partner you want to be for your husband/wife or closest partner in life.	
3. FRIENDS: Spending time with friends, doing what you need to maintain friendships, or providing help and support for others as a friend.	

4. WORK: Engaging in whatever is your occupation, your job, volunteer work, community service, education, or your work around your own home.	
5. HEALTH: Keeping yourself fit, physically able, and healthy just as you would most want to do.	
6. GROWTH AND LEARNING: Learning new skills or gaining knowledge, or improving yourself as a person as you would most want.	

BVI -CONTINUED

In this section we want you to look at how much SUCCESS you have had in living according to your values. Many times, people find it difficult to live their lives as they want to live them.

For each of the areas of life listed below consider again how you most want to live your life. Then rate how SUCCESSFUL you have been living according to your values during the past two weeks. These questions are not asking how successful you want to be but how successful you have been. Rate your success using any number on the scale from 0 (not at all successful) to 5 (extremely successful).

0	1	2	3	4	5
Not at all Successful	**Slightly Successful**	**Somewhat Successful**	**Moderately Successful**	**Very Successful**	**Extremely Successful**

Consider each area according to your values, the important ways that you most want to live your life in each domain.	SUCCESS **At Living Your Values**
1. FAMILY: Participation in your relationships with your parents, children, other close relatives, people you live with, or whoever is your "family."	
2. INTIMATE RELATIONS: Being the kind of partner you want to be for your husband/wife or closest partner in life.	

3. FRIENDS: Spending time with friends, doing what you need to maintain friendships, or providing help and support for others as a friend.	
4. WORK: Engaging in whatever is your occupation, your job, volunteer work, community service, education, or your work around your own home.	
5. HEALTH: Keeping yourself fit, physically able, and healthy just as you would most want to do.	
6. GROWTH AND LEARNING: Learning new skills or gaining knowledge, or improving yourself as a person as you would most want.	

Eudaimonic Well-Being

Scales of Psychological Well-Being (SPWB; Ryff, 1989; Van Dierendonck, 2005)

Instructions: The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers.

On the list below please indicate the number that best describes your present agreement or disagreement with each statement	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
	1	2	3	4	5	6

_____1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.

_____2. I tend to worry about what other people think of me.

_____3. I tend to be influenced by people with strong opinions.

_____4. I have confidence in my opinions, even if they are contrary to the general consensus.

_____5. It's difficult for me to voice my own opinions on controversial matters.

_____6. I often change my mind about decisions if my friends or family disagree.

_____7. I am concerned about how other people evaluate the choices I have made in my life.

_____8. I judge myself by what I think is important, not by the values of what others think is important.

_____9. In general, I feel I am in charge of the situation in which I live.

_____10. The demands of everyday life often get me down.

_____11. I am quite good at managing the many responsibilities of my daily life.

_____12. If I were unhappy with my living situation, I would take effective steps to change it.

_____13. I have difficulty arranging my life in a way that is satisfying to me.

_____14. I have been able to build a home and a lifestyle for myself that is much to my liking.

_____15. In general, I feel that I continue to learn more about myself as time goes by.

_____16. I don't want to try new ways of doing things--my life is fine the way it is.

_____17. I think it is important to have new experiences that challenge how you think about yourself and the world.

_____18. When I think about it, I haven't really improved much as a person over the years.

_____19. I have the sense that I have developed a lot as a person over time.

_____20. For me, life has been a continuous process of learning, changing, and growth

_____21. I gave up trying to make big improvements or changes in my life a
long time ago.

_____22. I often feel lonely because I have few close friends with whom to
share my concerns.

_____23. I don't have many people who want to listen when I need to talk.

_____24. I feel like I get a lot out of my friendships.

_____25. It seems to me that most other people have more friends than I do.

_____26. I have not experienced many warm and trusting relationships with
others.

_____27. I know that I can trust my friends, and they know they can trust me.

_____28. I feel good when I think of what I've done in the past and what I hope
to do in the future.

_____29. I have a sense of direction and purpose in life.

_____30. I don't have a good sense of what it is I'm trying to accomplish in life.

_____31. I enjoy making plans for the future and working to make them a
reality.

_____32. I am an active person in carrying out the plans I set for myself.

_____33. My aims in life have been more a source of satisfaction than
frustration to me.

_____34. When I look at the story of my life, I am pleased with how things have
turned out.

_____35. In general, I feel confident and positive about myself.

_____36. Given the opportunity, there are many things about myself that I would
change.

_____37. I like most aspects of my personality.

_____38. In many ways, I feel disappointed about my achievements in life.

_____39. For the most part, I am proud of who I am and the life I lead.

Appendix I

Mindfulness

The Five Factor Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietmeyer, & Toney, 2006). Please rate each of the following statements using the scale provided. Write the number in the blank that best describes <u>your own opinion</u> of what is <u>generally true for you</u>.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 1. When I'm walking, I deliberately notice the sensations of my body moving.

_____ 2. I'm good at finding words to describe my feelings.

_____ 3. I criticize myself for having irrational or inappropriate emotions.

_____ 4. I perceive my feelings and emotions without having to react to them.

_____ 5. When I do things, my mind wanders off and I'm easily distracted.

_____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.

_____ 7. I can easily put my beliefs, opinions, and expectations into words.

_____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

_____ 9. I watch my feelings without getting lost in them.

_____ 10. I tell myself I shouldn't be feeling the way I'm feeling.

_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

_____ 12. It's hard for me to find the words to describe what I'm thinking.

_____ 13. I am easily distracted.

_____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

_____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.

_____ 16. I have trouble thinking of the right words to express how I feel about things

_____ 17. I make judgments about whether my thoughts are good or bad.

_____ 18. I find it difficult to stay focused on what's happening in the present.

_____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

_____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

_____ 21. In difficult situations, I can pause without immediately reacting.

_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.

_____ 24. When I have distressing thoughts or images, I feel calm soon after.

_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

_____ 26. I notice the smells and aromas of things.

_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____ 28. I rush through activities without being really attentive to them.

_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.

_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

_____ 32. My natural tendency is to put my experiences into words.

_____ 33. When I have distressing thoughts or images, I just notice them and let them go.

_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.

_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

_____ 36. I pay attention to how my emotions affect my thoughts and behavior.

_____ 37. I can usually describe how I feel at the moment in considerable detail.

_____ 38. I find myself doing things without paying attention.

_____ 39. I disapprove of myself when I have irrational ideas.

Social Desirability

Marlowe-Crowne Social Desirability Scale – Short Form C (M-C SDS Form C; Crowne & Marlowe, 1960; Reynolds, 1982)
Directions: Please mark the answer to <u>every question</u> in the way that fits you best

T = True   F = False

1. It is sometimes hard for me to go on with my work if I am not encouraged.	Ⓣ	Ⓕ
2. I sometimes feel resentful when I don't get my way.	Ⓣ	Ⓕ
3. On a few occasions, I have given up doing something because I thought too little of my ability.	Ⓣ	Ⓕ
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.	Ⓣ	Ⓕ
5. No matter who I'm talking to, I'm always a good listener.	Ⓣ	Ⓕ
6. There have been occasions when I took advantage of someone.	Ⓣ	Ⓕ
7. I'm always willing to admit it when I make a mistake.	Ⓣ	Ⓕ
8. I sometimes try to get even rather than forgive and forget.	Ⓣ	Ⓕ
9. I am always courteous, even to people who are disagreeable.	Ⓣ	Ⓕ
10. I have never been irked when people expressed ideas very different from my own.	Ⓣ	Ⓕ
11. There have been times when I was quite jealous of the good fortune of others.	Ⓣ	Ⓕ
12. I am sometimes irritated by people who ask favors of me.	Ⓣ	Ⓕ
13. I have never deliberately said something that hurt someone's feelings.	Ⓣ	Ⓕ

Appendix K

Final Page

THANK YOU for completing our survey.

WOULD YOU LIKE A CHANCE TO WIN one of two $50 prizes? If so, please

copy/paste the link below into another browser. This link will ask for your email address.

We will contact you via email if you have won $50. Again, the responses from the survey

are completely separate from the raffle.

http://www.surveymonkey.com/s/collegewellbeingraffle

We truly appreciate your time and effort in completing our survey.