2019

Meaning, Purpose, and Experiential Avoidance as Predictors of Valued Behavior: An Application of Ecological Momentary Assessment

Jeffrey Pavlacic
University of Mississippi

Recommended Citation

MEANING, PURPOSE, AND EXPERIENTIAL AVOIDANCE AS PREDICTORS OF

VALUED BEHAVIOR: AN APPLICATION OF ECOLOGICAL MOMENTARY

ASSESSMENT

A Thesis

presented in partial fulfillment of requirements

for the degree of Master of Arts

in Clinical Psychology

The University of Mississippi

Jeffrey Michael Pavlacic

May 2019

ABSTRACT

Values-based interventions in therapeutic settings direct behavior with avoidance and escape functions towards valued domains that are intrinsically reinforcing. This "progression" towards valued domains fluctuates on a daily basis, predicting less psychological stress. Contemporary conceptualizations of meaning in life delineate two primary domains: purpose (goal achievement), and significance or presence of meaning (the extent to which a person perceives themselves as "mattering"). These domains have not been simultaneously and systematically investigated in college students, a population at risk for developing maladaptive coping strategies and negative affect attributed to adjustment-related issues (e.g., binge drinking, depression, increased risk for suicidal ideation). College students also engage in experiential avoidance behaviors, defined as the unwillingness to experience private events, such as thoughts, feelings, or physical sensations. Experiential avoidance has also been theorized to interfere with valued living. However, few studies have examined fluctuations in valued living predicted by the prominent facets of meaning and experiential avoidance over time in general, but in particular, with regard to a college student sample. The present study used Ecological Momentary Assessment (EMA) to predict values-based behavior from different domains of meaning in life (i.e., significance and purpose) and experiential avoidance. Of the 100 college students recruited, 73 individuals completed daily surveys across 14 days. Across all participants, significance and purpose predicted same-day progression towards valued domains, accounting for 53% of the variance in values progression. Experiential avoidance and meaning predicted same-day obstruction towards valued domains, accounting for 36% of the variance. Results suggest that

meaning and purpose should be utilized separately, and that meaning, purpose, and experiential avoidance play a role in valued living.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

I. INTRODUCTION

Valued Living

Overview of Valued Living. Valued living is a crucial component of a variety of therapeutic techniques, such as strengths-based approaches (Davis, Deane, & Lyons, 2016; Peterson & Seligman, 2004), Logotherapy (Frankl, 1959/2006), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Dialectical Behavior Therapy (DBT; Cameron, Reed, & Guadiano, 2014; Linehan, 1987), and Motivational Interviewing (MI; Hettema, Steele, & Miller, 2005). For third-wave behavior therapy and existential theories such as ACT and Logotherapy respectively, valued living is the most beneficial therapeutic tool (Frankl, 1959/2006; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Schulenberg, Hutzell, Nassif, & Rogina, 2008). While valued living is evidently applicable within a therapeutic context (Frankl, 1959/2006; Hayes et al., 1996), the concept of living in accordance with values and developing purpose is essential to human nature and thus applicable to any context (Schulenberg, Smith, Drescher, & Buchanan, 2016).

Individuals who perceive their lives as more meaningful tend to experience psychological flexibility, which allows them to commit to living in a valued manner, even in times of hardship (Frankl, 1959/2006; Kashdan & Kane, 2011). Wilson and DuFrene (2009) defined values as "freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioral pattern itself" (p. 66). In parsing this definition, values are subjectively chosen domains (Hayes, Strosahl, & Wilson, 2011) and derived from stimulus relations (Hayes,

1

Barnes-Holmes, & Roche, 2001; Smout, Davies, Burns, & Christie, 2014). Further, values-based behavior is intrinsically reinforcing, meaning that behavior consistent with values will increase (Skinner, 1971; Smout et al., 2014). Wilson and Murrell (2004) suggested that values-based interventions target behaviors with avoidance and escape functions, redirecting these behaviors towards valued domains that provide positive reinforcement. Valued living is related to a wide variety of positive outcomes that are applicable to the therapeutic setting and also to everyday-life contexts.

As an example of valued living, Viktor Frankl (1959/2006) achieved a sense of meaning by living in accordance with his values and staying to care for his patients despite having the opportunity to leave Vienna before being detained in the concentration camps during World War II. In his famous book *Man's Search for Meaning,* Frankl discussed how one might go about searching for meaning through valued domains when he stated that, "One should not search for an abstract meaning in life. Everyone has his [or her] own specific vocation or mission in life to carry out a concrete assignment which demands fulfillment" (Frankl, 1959/2006; pp. 108-109). Although he could have left, it was important to him that he stay to ensure his patients were cared for. Frankl concluded that behavioral progression towards values is a way to discover meaning despite suffering. This was, in essence, his meaning manifested through values-based behavior in times of hardship (Frankl, 1966). This concept of meaning through values-based behavior has been examined in the context of how individuals access protective factors in response to natural disasters (Aiena, Buchanan, Smith, & Schulenberg, 2016), medical events such as spinal cord injuries (Peter, Schulenberg, Buchanan, Prodinger, & Geyh, 2016), Veterans suffering from post-deployment trauma (Tsai, Mota, Southwick, & Pietrzak, 2016), and substance use disorders (Lyons, Deane, & Kelly, 2010), among other negative, inevitable life

events and in line with current positive psychology trends (Schulenberg, 2016). Researchers have extensively studied the efficacy of such interventions.

Valued Living Correlates. Those who exhibit values-based behavior tend to experience less psychological stress and increased quality of life, whereas a lack of values-based behavior is related to symptoms of depression, overall psychological distress, and episodic drinking in college students (Miller et al., 2016; Plumb & Hayes, 2008; Wilson & Murrell, 2004; Wilson, Sandoz, Flynn, Slater, & DuFrene, 2010). Graham, West, and Roemer (2015) found that those who lived in accordance with values experienced less anxiety and depression symptoms, while Bahraini et al. (2013) found that values congruency predicted less suicidal ideation in a military sample. In regards to physical health-related outcomes, values-based behavior is related to an increased tolerance for pain (Branstetter, Cushing, & Duleh, 2009). Similarly, endorsing health-related values is related to greater reporting of psychological growth following a stressful event (McDiarmid, Taku, & Phillips, 2017). Further, researchers posit that values can serve as protective factors in preventing alcohol use (Palfai, Ralston, & Wright, 2011). Kashdan and Steger (2007) found that greater progression towards values was positively related to increased meaning in life by sampling participants using cross-sectional methodology. Within a college setting specifically, Murrell, Jackson, Lester, and Hulsey (2017) found that those who engaged in fewer values-congruent behaviors experienced increased difficulties in coping with the loss of a parent.

In referencing longitudinal studies, Kashdan and McKnight (2013) found that, on days when individuals diagnosed with social anxiety disorder (SAD) reported more effort towards personal goals and made progress towards these goals, they reported higher meaning in life scores over a 2-week period. They claimed to have conducted the seminal study in measuring a

clinical sample's progress towards values on a daily basis, which speaks to the dearth of research examining the relationship between valued living and meaning in life longitudinally. Regardless, their study suggests an important connection between values effort/progress and self-reported presence of meaning over a 2-week period.

Evidently, the efficacy of engaging in values-based behavior has been well-documented across a variety of contexts and is prevalent in contemporary psychotherapy. However, modeling values-based behavior has been less systematically investigated in college students. Nevertheless, this population is at risk for psychological distress due to adjustment issues surrounding advanced coursework, fostering relationships, and establishing autonomy (Beiter et al., 2015; see also Wade, Marks, & Hetzel, 2015).

Adjusting to College. College students are prone to experiencing symptoms of psychological distress. Additionally, students attending college for the first time may also experience some difficulty in developing their identity (Adams, 2012; Yang, Holden, & Carter, 2017). In college, there are new opportunities and pressures to develop personal and professional relationships. Cousins, Servaty-Seib, and Lockman (2017) found that social support was positively related to domains of academic and social well-adjustment. However, those who engaged in avoidant coping strategies were more likely to experience negative outcomes related to adjustment. English, Davis, Wei, and Gross (2017) found that those individuals who reported higher levels of homesickness exhibited negative adjustment strategies over the first year of college.

Segueing to the negative outcomes associated with adjustment-related issues, college students unable to adjust to the pressures of attending college for the first time are more likely to experience psychological distress and engage in alcohol use (Beiter et al., 2015; Blevins,

Abrantes, & Stephens, 2016; Trevisan, Bass, Powell, & Eckerd, 2017). Alcohol use, specifically binge-drinking, may lead to a variety of negative outcomes in and of itself, such as sexual assault or traffic accidents (Hingson, 2010), negative mood states following binge-drinking episodes (Howland et al., 2010), and suicidal ideation or suicide attempts (Perkins, 2002). Further, suicidal ideation is experienced at a significantly higher rate among college students than the general population (Garlow et al., 2007). Indeed, a recent meta-analysis conducted by Mortier, Cuijpers, Kiekens, and Auerbach (2018) found that suicidal thoughts and behaviors were common among college students. In their sample of 36 studies that assessed for suicidal thoughts and behaviors, they found that lifetime prevalence rates of ideation, plans, and attempts were 22.6%. Due to aforementioned findings related to the prevalence of psychological distress in college students, the Depression Anxiety and Stress Scale – 21 (DASS – 21) will be used in the current study to provide descriptive information regarding the sample. Positive adjustment is an important component to ameliorating psychological distress and decreasing risk of engaging in risky behaviors. It is therefore important to find ways to facilitate positive adjustment through interventions and educational programming that offers students information on how to enhance the likelihood of successful adjustment.

Theorists posit that college is a time for students to discover meaning in life through activities of interest to them, as this engagement in activities leads to an increased quality of life (Steger, Oishi, & Kashdan, 2009; Wade et al., 2015). Regardless, a challenge that universities face is finding ways to promote meaning in life through values-based behavior. Multiple researchers have recommended new programming and offered general recommendations designed to target adjustment-related issues, as some universities have had difficulties in generating a context conducive to effective coping in times of hardship or adjustment (see Balk,

2001, Trevisan et al., 2017, and Wade et al., 2015). Given that valued living predicts meaning in life across different samples (e.g., Kashdan & Steger, 2007; Kashdan & Steger, 2013) and decreased psychological distress and alcohol use in this population (Levin, Pistorello, Seeley, & Hayes, 2013; Palfai et al., 2011) the relationship between values-based behavior and meaning should be further examined on a daily level to reflect contemporary domains of meaning in life. More generally, values-based approaches seem to address a variety of hardships that college students are experiencing. Examining the relationship between values-based behavior and facets of meaning in life may provide universities with insight on how best to design and/or implement values-based interventions and programs for students who may not necessarily make the decision to seek formal assistance, as values-based interventions have been shown to be efficacious in a variety of contexts. The contemporary domains of meaning are rarely examined simultaneously, especially within college students (Martela & Steger, 2016). Contemporary meaning in life literature delineates meaning into multiple facets that warrant further examination in the college context, with specific regard for how each relates to valued behavior.

Meaning in Life

   Definition and Overview. A definition of meaning in life, applicable to not only a therapeutic context, is the ability of an individual to understand his or her life, complemented by a set of goals that the individual seeks to accomplish (i.e., purpose; Frankl, 1966; Heintzelman & King, 2014; Steger, Bundick, & Yeager, 2014). Frankl (1966) posited that meaning in life occurs when an individual either achieves goals, has positive interactions with others, or has meaningful experiences with aspects of the environment. Originally derived from existential theory (Frankl, 1959), meaning in life provides the foundation for evidence-based practices such as Logotherapy (Frankl, 1959), ACT (Hayes et al., 1999), strengths-based approaches (Peterson & Seligman,

2004), and MI (Hettema et al., 2005). Within an applied, therapeutic context, evidence-based approaches encourage clients to live a valued lifestyle as a means of discovering meaning in even the most difficult experiences, while also reducing symptoms (Aiena et al., 2016; Frankl, 1966; Hayes et al., 2011; Lent, 2004; Schulenberg et al., 2008).

Given the broad applicability of the concept, meaning in life has been examined within many different contexts (see Heintzelman & King, 2014 for a review). For instance, perceived meaning in life has been studied in people experiencing natural and technological disasters (Aiena et al., 2016; Dursun, Steger, Bentele, & Schulenberg, 2016; Van Tongeren et al., 2018), those suffering from medical diseases (Guerra, Lencastre, Silva, & Teixeira, 2017), and those attending college (Bronk, 2013). While meaning is applicable to a range of medical and therapeutic contexts, it is relevant to the human experience regardless of the condition or circumstance (Frankl, 1959/2006). Thus, in the case of the current study, college students are of special interest because they are at a heightened risk for experiencing a range of adjustment-related issues or concerns (Heintzelman & King, 2014; Perkins, 2002; Schulenberg et al., 2016).

Although meaning is generally considered a trait-like variable, studies have found fluctuations over short time periods (Kashdan & Steger, 2007), which is understandable considering that conceptualizations of meaning vary across individuals (Brandstatter, Baumann, Borasio, & Fegg, 2012). As such, an important consideration of the meaning in life literature is the multitude of ways in which the relevant constructs are measured and influenced (Cosco et al., 2017; Steger et al., 2006). Within the 21st century, an influx of manuscripts concerning meaning and meaning-related assessment have been published (Hicks & Routledge, 2013). A recent review found a total of 59 meaning in life measures assessing a wide range of aspects considered to be relevant to meaning in life (i.e., presence, sources, crisis, search, breadth, depth,

commitment, framework, meaningful activities, well-being, meaning-making, concept, changes, temporal, evaluative, and structural; Brandstatter et al., 2012). Although a multitude of different measurement tools have been identified, Brandstatter et al. (2012) discussed how a common trend among the measures is the way they are defined. They stated as follows in regards to varying expert definitions of meaning: "Attempting to summarize their statements, they perceive [Meaning in Life] to be a highly individual perception, understanding or belief about one's own life and activities and the value and importance ascribed to them" (p. 1045). Coming to conclusions regarding this literature can be difficult given the multitude of measures, definitions, and methods employed (Cosco et al., 2017).

Despite this ambiguity in the literature, it remains a constant that meaning is of paramount importance to human health and well-being. A recent distinction in the literature is whether and how *meaning* should be differentiated from the concept of *purpose* (George & Park, 2016; Heintzelman & King, 2014; Lomas, Hefferon, & Ivtzan, 2014; Martela & Steger, 2016; Van Tongeren et al., 2018). The terms were previously synonymous. However, in recent years they have come to represent different constructs. For example, a recent measure attempting to separate the domain of purpose into factors was developed by Bronk et al. (2018). Referred to as the Claremont Purpose Scale (CPS), the CPS delineates the concept of purpose into three components: meaningfulness, goal orientation, and beyond-the-self orientation. Still, this scale includes meaning as a component of purpose, while other publications have emphasized the importance of examining the constructs separately. Overall, they appear to be related but distinct concepts, meaning having more to do with one's sense of significance, or "mattering", and purpose having more to do with goals, goal-driven action, or "calling" (George & Park, 2016;

8

Martela & Steger, 2016). Additional differences between meaning/significance and purpose are delineated in subsequent sections of this manuscript.

While both meaning and purpose have been receiving increased empirical attention in recent years, it is concerning that they are rarely examined simultaneously in the same study (Martela & Steger, 2016). Therefore, in the current study meaning and purpose will be examined systematically in order to better understand how each relates to such areas as valued living, as well as how each relates to one another. Thus, an intended outcome of this study is a collected understanding as to how two essential components of meaning (significance and purpose; George & Park, 2016; Heintzelman & King, 2014; Lomas et al., 2014; Martela & Steger, 2016; Van Tongeren et al., 2018) fluctuate over time in this respect. Prior to discussing the concept of purpose in greater detail, additional literature as to the correlates of meaning is summarized.

Meaning in Life Correlates. Adhering to the aforementioned definition of meaning in life, most research has examined the "presence" of meaning component, sometimes referred to as one's sense of "significance" or "mattering". For example, Shin, Steger, and Henry (2016) found that those with an increased clarity of self-concept reported greater perceived meaning in life over an 8-week period. In another study, those people who endorsed humility and respect as values reported higher levels of meaning in life (Yu, Chang, & Kim, 2016). Trevisan et al. (2017) found that perceived meaning in life was associated with positive adjustment, while Chui (2018) found that meaning in life was related to increased quality of life. Presence of meaning has also been shown to be related to positive affect (King, Hicks, Krull, & Del Gaiso, 2006), self-reported well-being (Yalcin & Malkoc, 2015), lower psychological distress in cancer patients (Winger, Adams, & Mosher, 2016), and positive emotion regulation strategies (Shin, Lee, & Lee, 2005). Generally, presence of meaning has consistently been shown to be related to

well-being and positive affect (Chamberlain & Zika, 1988; Martela, Ryan, & Steger, 2018). While meaning in life is evidently related to a wide variety of positive outcomes, a lack of meaning is related to various forms of psychopathology.

In retrospect, depression or negative affect is characterized by a lack of meaning (Beck, 1967). For example, Disabato, Kashdan, Short, and Jarden (2017) conducted a longitudinal study that had participants complete self-report measures of meaning and presence. They found that those who reported lower perceived presence of meaning reported greater depression symptoms at subsequent time points. Indeed, a meta-analysis conducted by Pinquart (2002) found a significant inverse relationship between meaning in life and symptoms of depression. Additionally, Kashdan and McKnight (2013) found that those diagnosed with SAD reported lower perceived meaning in life. The concept of meaning proves prevalent with other mental health disorders. For example, those diagnosed with trauma-related disorders experience a disruption in meaning, where one's perception of meaning is challenged after experiencing a traumatic event (Landsman, 2002; Park & Ai, 2006; Schulenberg, 2016). An increased perception of meaning has also been shown to be inversely related to alcohol use (Schnetzer, Schulenberg, & Buchanan, 2012), depression and anxiety in hospital patients nearing death (Bernard et al., 2017), and symptoms of borderline personality disorder (BPD; Marco, Perez, Garcia-Alandete, & Moliner, 2017). In general, those who report experiencing a lack of meaning are more susceptible to various forms of psychopathology (Florez, 2017).

Given meaning's importance to human health and well-being, it is heartening to see that recommendations for incorporating the concept of meaning into college counseling services are gaining traction (Trevisan et al., 2017). For example, Wade et al. (2015) clarified the role of meaning on college campuses and recommended ways of incorporating these practices into

academic settings (e.g., classrooms), career counseling offices, leadership development centers, college athletics, and general campus culture, among other domains of university life. Parks (2014) suggested that positive psychology practices (e.g., strengths-based approaches, service learning opportunities) be better incorporated into higher education institutions. While applications of meaning appear to be a growing endeavor within the context of college, few studies have investigated the role of values and values-based behavior in college students considering associations with desirable outcomes (e.g., meaning and purpose), as well as fluctuations over time.

Purpose in Life

Differentiating Purpose from Meaning. Traditionally, the terms meaning and purpose were used interchangeably, leading to ambiguity in the literature (Bronk, 2013; Martela & Steger, 2016). Studies of meaning would often focus on various aspects, or theorized components, of meaning. How the term is defined and measured could vary from investigation to investigation. Researchers have come to realize that these concepts are related, but distinct (Martela & Steger, 2016). Therefore, it is important to differentiate and examine the two concepts in light of modern science (George & Park, 2016).

While meaning refers to anything that allows one to see his or her life as significant and corresponds to words such as value, significance, and importance (Lent, 2013), purpose is a subset of meaning that reflects engagement with the world (Damon, 2008; Damon et al., 2013). Purpose is further characterized by self-organizing (e.g., subjectively chosen; Hayes et al., 2011) values that guide behavior in a given direction towards a definable endpoint and are central to human nature (i.e., valued goals; Bronk, Riches, & Mangan, 2018; Dahl, Plumb, Stewart, &

Lundgren, 2009; Frankl, 1966; George & Park., 2016; Kashdan & McKnight, 2013; McKnight & Kashdan, 2009; Schulenberg et al., 2016).

It is concerning that forty percent of Americans are unsure whether or not their lives are purposeful (Kobau, Sniezek, Zack, Lucas, & Burns, 2010). Contemporary conceptualizations of purpose tend to be synonymous with future-focused actions defined by an attainable endpoint or destination (Hayes et al., 1999). A commonly-used example in the literature is describing a value as similar to a compass. With valued behavior, one may move in a certain direction yet not necessarily arrive at a given destination (e.g., caring for one's family, engaging in health-related activities to promote well-being). Purpose, comparable to goals, delineates goal-driven behavior and involves end points.

Few studies have examined the relationship between purpose and values-based behavior longitudinally. For this reason, it is necessary to examine purpose in line with values-based behavior. For example, an individual may report an increased sense of purpose on days when he/she engages in values-based behavior. Newer data-collection techniques allow researchers to better examine the relationships between variables and determine whether or not differing levels of purpose in life account for variance in values-based behavior (i.e., lower levels of purpose on days where individuals do not engage in values-based behavior and vice versa).

The distinction between meaning and purpose is an important one. Studies have demonstrated that there exists a strong relationship between the two variables (e.g., Bonebright, Clay, & Ankenmann, 2000; Chamberlain & Zika, 1988; George & Park, 2013; Ryff, 1989), but the relationship is not to the degree that would suggest that these concepts are synonymous with one another. Moreover, there are factor-analytic studies that have supported this distinction (e.g., Martela & Steger, 2016; Morgan & Farsides, 2009). In daily life, this translates to the idea that

people will perceive their lives as meaningful if they have a sense of their values, have a set of goals that align with those values, and make decisions and lead their lives in a way that is consistent with those goals and values. Thus, an important question, and a foundational idea for approaches such as Logotherapy and ACT, relates to whether a person's perceived meaning, purpose, and values are congruent with one another and with how the individual is living his or her life. This study will allow us to examine the relationship between these variables over a 2-week period.

Given the theoretical and statistical relationship between the concepts of purpose and meaning, it would be useful to learn whether purpose predicts values-based behavior above and beyond meaning in life, considering these variables over time and considering the college student population (i.e., a question of incremental validity). To our knowledge via the published literature, such an integrated study has yet to be completed. Recent advancements in data-collection methods, such as Ecological Momentary Assessment (EMA), allow researchers to better measure constructs over a given time period, taking into consideration contextual factors that may influence survey responding and enhancing ecological validity. Such methodology is discussed in greater detail below.

Purpose in Life Correlates. Generally, purpose in life is associated with other variables besides meaning that are relevant to psychopathology. Simply being aware of one's purpose has been shown to lessen both physical and psychological distress and sustain motivation in times of hardship (Creswell et al., 2005; McKnight et al., 2009). As such, living in concordance with values drives this sense of purpose and leads to enhanced well-being (Frankl, 1966; Wilson & DuFrene, 2009). More specifically, those who endorse living a purposeful life tend to experience less depression (Mascaro & Rosen, 2005), heightened well-being (Reker, Peacock, & Wong,

1987), greater physical health (Nygren et al., 2005), increased grit – which is considered to be a passion for achieving goals (Hill, Burrow, & Bronk, 2016), improved sleep quality (Turner, Smith, & Ong, 2017), better overall intelligence levels (i.e., memory, executive functioning, cognition; Lewis, Turiano, Payne, & Hill, 2017), and enhanced gratitude, compassion, and identity development (Bronk & Mangan, 2016; Malin, Liauw, & Damon, 2017). Additionally, purpose in life is theorized to explain the many benefits provided by mindfulness-based interventions (Pearson, Brown, Bravo, & Witkiewitz, 2015).

Although purpose in life is directly related to a variety of desired outcomes, purpose is inversely related to various areas of psychopathology. Heisel and Flett (2004), for instance, discussed how a lack of purpose in life may serve as a causal agent for psychological distress. The negative consequences of lacking a sense of purpose have been demonstrated in cognitive and behavioral therapies for depression (e.g., Beck describes people who are depressed as having no goals; Beck, 1967), in work with individuals reporting anxiety (e.g., individuals worried about not making mistakes as opposed to moving in a goal-oriented, purposeful direction, thereby limiting life purpose; Kashdan, Weeks, & Savostyanova, 2011), and in those reporting symptoms of posttraumatic stress disorder (e.g., an inability or lack of desire to seek services; Fontana & Rosenheck, 2004). A decreased purpose in life has also been shown to be related to heightened substance use (Abramoski, Pierce, Hauck, & Stoddard, 2017) and suicidal ideation (Heisel & Flett, 2004).

Regarding college students' involvement on a college campus, several studies have recognized involvement in college organizations as a predictor of purpose (Shin, Kim, Hwang, & Lee, 2017; Turton, Nauta, Wesselmann, McIntyre, & Graziano, 2017), thereby delineating the possible link between purpose and values in a college sample. As such, a goal of academics

should be incorporating values-based programming into university life. In order to do so, however, one needs to understand the importance of values-based behavior in the same sample, as well as how it relates to the aforementioned desired outcomes (i.e., meaning and purpose). This understanding may provide researchers with information on how best to implement such programming, as well as with an understanding on which psychological resources contribute to values-based behavior. Although, one also requires an understanding of factors that inhibit valued living. Experiential avoidance, another construct relevant in examining values-based behavior, has been shown to be related to psychopathology and a lack of values-based behavior. Experiential avoidance warrants examination in the same model and population.

Experiential Avoidance

  Defining Experiential Avoidance. Experiential avoidance may prevent an individual from living in accordance with his or her values (Wilson & Murrell, 2004). Life areas that an individual may find meaningful, unfortunately, are sometimes complemented by aversive stimuli (Michelson, Lee, Orsillo, & Roemer, 2011). For example, if an individual experiences symptoms of anxiety in a social setting, he or she may avoid situations where approaching a social setting may lead to a meaningful experience (e.g., giving a speech on a topic of interest in class). Hayes et al. (1996) identified experiential avoidance as the unwillingness to experience private events such as thoughts or sensations, complemented with behavioral repertoires that attempt to reduce the experience of such events (Berghoff, Tull, DiLillo, Messman-Moore, & Gratz, 2017). One example might be the suppression of anxious thoughts through distraction (Levitt, Brown, Orsillo, & Barlow, 2004).

  Experiential Avoidance Correlates. Accepting or coming to terms with negative emotions, otherwise termed psychological flexibility (i.e., the opposite of experiential

avoidance), is related to decreased symptoms of depression (Kashdan, Morina, & Priebe, 2009), decreased levels of stress and burnout in workplace settings (Hofer et al., 2018), increased job satisfaction (Hayes, Luoma, Bond, Masuda, & Lillis, 2006), and overall psychological and physical health (Hardy & Segerstrom, 2017). Although engaging in acceptance-based behaviors is related to positive outcomes, a lack of such strategies may be hindering for engaging in valued activities and psychopathology.

Experiential avoidance has been shown to be related to detrimental outcomes (Purdon, 1999), such as lack of valued living (Wilson & Murrell, 2004), fear in emotional disorders (Spinhoven, de Rooij, van Hemert, & Penninx, 2014), decreased quality of life (Gross, 2002), depression and trauma-related symptoms (Kashdan, Barrios, Forsyth, & Steger, 2006; Kashdan et al., 2014; Marx & Sloan, 2005; Shallcross, Troy, Boland, & Mauss, 2010), and anxiety (Levitt et al., 2004). Experiential avoidance has also been found to be a risk factor for substance use disorders (Garcia-Olivia & Piqueras, 2016) and risky sexual behaviors (Batten, Follette, & Aban, 2002).

Based on the available literature, experiential avoidance is a transdiagnostic vulnerability factor (Kashdan et al., 2006) prevalent across various domains of psychopathology. It may be particularly problematic in cases where it interferes with valued living (Berghoff, Ritzert, & Forsyth, 2018; Wilson & Murrell, 2004). In conducting pilot tests, for example, progression towards values was negatively correlated with experiential avoidance at a single time point, $r = -.38$, $p < .001$, suggesting that those participants who engaged in more experiential avoidance behaviors experience less progression towards their values. While there have been studies conducted in cross-sectional fashion along these lines, there are fewer published studies that have examined fluctuations in experiential avoidance predicted by valued living over a given temporal

frame (Berghoff et al., 2018; Shallcross et al., 2010; Spinhoven et al., 2014). As an example of

an available longitudinal study (adults ranging in age from 18 to 65), Spinhoven et al. (2014)

found that experiential avoidance predicted fear in emotional disorders. This study did not

include an examination of values-based behavior. Although, a recent study conducted by

Berghoff et al. (2018) examined experiential avoidance and valued living using a daily diary

study. They found that high levels of experiential avoidance predicted less valued living at the

daily level. Thus, there is clearly utility in evaluating such relationships considering multiple

time points, as opposed to cross-sectional methodology. In such a fashion, a greater

understanding of these relationships is obtained, incorporating additional, relevant constructs.

This study also adds to the literature by cutting across domains and incorporating constructs from

other relevant areas of clinical psychology (e.g., meaning and purpose) that may contribute to

valued living.

Ecological Momentary Assessment

Addressing Contextual Responding. Ecological Momentary Assessment involves the

repeated assessment of participant/client behaviors throughout the day, usually over the course of

a number of days. Specifically, data are collected on in-time states and perceptions of behaviors

(Runyan & Steinke, 2015). Although the methodology varies based on the study design, the

overarching goal of EMA is clear: assessing real-world perceptions of behavior at multiple time

points in order to understand how behaviors fluctuate over time in different contexts (Moore,

Depp, Wetherell, & Lenze, 2016; Shiffman, Stone, & Hufford, 2008). There are some benefits to

this type of methodological approach. EMA-based data collection limits confounding factors that

may influence responses at single time points, such as contextual factors (e.g., lack of sleep,

limited effort, emotional/mood states; Trull & Ebner-Preiemer, 2009) and lack of ability to recall

thoughts, feelings, or behaviors over "the past month" (Lenze & Wetherell, 2009). In cross-sectional designs, researchers may misinterpret data collected when conducting statistical analyses or evaluating treatment protocols, as these data may be influenced by certain factors or variables that were unaccounted for during assessment (Moore et al., 2016). Ecological Momentary Assessment techniques have been utilized across many different settings. Examples include individuals suffering from substance use (Shiffman, 2009), those diagnosed with bipolar disorder (Faurholt-Jepsen, Bauer, & Kessing, 2018), and adolescents in terms of their self-efficacy (Bassi, Fave, Steca, & Caprara, 2018). In regard to college students, EMA techniques have been used to measure marijuana intake within a social context (Phillips, Phillips, Lalonde, & Prince, 2018), physical activity and food intake (Bruening et al., 2016), and frequency of individuals engaging in body checking (i.e., behaviors designed to gather information about an individual's shape; Stefano, Hudson, Whisenhunt, Buchanan, & Latner, 2016), to provide a few examples. One particular type of EMA that has become increasingly common due to ease of administration is the daily diary EMA.

Daily Diary EMA. Daily diary studies are EMA-type studies where data are collected once per day, usually via a handheld device (Shiffman et al., 2008). Specifically, data are collected at specific time intervals with a limit of once per day. Daily diary studies allow researchers to examine changes in constructs of interest over a period of time by employing data collection at specific time intervals (Shiffman et al., 2008). Further, these techniques have been employed in a variety of settings, ranging from evaluating mindfulness interventions (Khoury et al., 2013), virtues in daily life (Runyan & Steinke, 2015), and predicting meaning from trait curiosity (Kashdan & Steger, 2007). Of particular importance to the current study are constructs targeting an individual's perception of valued living, presence of meaning (significance),

18

purpose in life, and experiential avoidance behaviors. As mentioned previously, extant studies have modeled the relationship between values progression and perceived meaning over time. However, research has not examined the multiple domains of meaning within a college sample. Given the evolving literature, more research is needed to understand the relationship between the aforementioned constructs.

Review of EMA Studies with Relevant Constructs. Of particular interest to researchers is the fluctuation of meaning in life variables over time (Cook, McElwain, & Bradley-Springer, 2016), as few studies have been conducted in this regard. By way of example as to the available literature, King et al. (2006) conducted a study that examined predictors in fluctuations of presence of meaning. They found that positive affect was a consistent predictor of the experience of meaning in life throughout the day. They also found that positive affect predicted trait meaning in life when measured at a single time point. In another study, Kashdan & Steger (2007) concluded that fluctuations in daily meaning in life are also due to effort and progress towards purpose in life, measured by a motivation to achieve goals and values. Finally, Kashdan and McKnight (2013) discovered those with SAD who put forth more effort and showed progress in engaging in values-based behaviors experienced increases in perceived meaning in life. Given that meaning in life is expected to vary on a daily basis (Kashdan et al., 2007), Petrou, Demerouti, Peeters, Schaufeli, and Hetland (2012) posited that effort and progress towards life purpose will also vary on a daily basis.

In regards to other relevant meaning in life constructs incorporating this methodology, PA and group cohesion have been shown to predict higher reported resilience over time (Ong, Bergeman, Bisconti, & Wallace, 2006). Additionally, Disabato et al. (2017) examined the concept of gratitude over time, while Nezlek, Newman, and Thrash (2017) found that feelings of

well-being were positively related to gratitude over a 14-day time period. Due to findings suggesting that meaning and values-based behavior can change over a discreet period (Kashdan et al., 2007; King et al., 2006), and further considering that there are few studies examining meaning, purpose, and experiential avoidance simultaneously and longitudinally (Berghoff et al., 2018; Martela et al., 2016), it is necessary to examine predictors of fluctuations in meaning over time and whether and how valued behavior is related to these fluctuations. As noted previously, college students are of particular interest because of their heightened risk for experiencing a wide variety of adjustment-related concerns.

Present Study

The present study sought to model progression towards valued domains and obstruction to values progression, specifically how each of these constructs relates to daily fluctuations in meaning in life (i.e., significance), purpose, and experiential avoidance over a 2-week period in an undergraduate college student sample. Exploratory analyses were conducted with the Claremont Purpose Scale subscales (personal meaning, goal-directedness, and self-transcendence) as predictors of values progression and obstruction. A secondary aim of the study was to provide more information regarding this newly-developed measure of purpose (see below for a detailed description of the measure). In line with the presented literature, it was hypothesized that, across participants, perceived significance/meaning in life and purpose would positively predict same-day values-based behavior (i.e., an average of the daily relations nested by participant), while experiential avoidance would negatively predict values-based behavior. Second, it was hypothesized that, across participants and on average, meaning and purpose would negatively predict obstruction towards values-based behavior, while experiential

20

avoidance would positively predict obstruction towards values-based behavior after controlling

for participant start points.

II. METHOD

Participants

Participants were 73 college-aged individuals (M_{age} = 18.60), predominantly female (N = 48; 65.75%), and predominantly White (N = 54; 73.97%). Participants were mostly unemployed (N = 58; 79.45%) and reported personal annual incomes of either $0 - $24,999 ($N$ = 36; 49.32%) or $200,000 or higher ($N$ = 14; 19.18%). Most participants reported being either slightly religious (N = 10; 13.70%) or moderately religious (N = 36; 49.32%).

Procedure

The University of Mississippi (UM) Institutional Review Board approved the study protocol. Participants signed up for the study via SONA, the university's online recruitment tool. Participants 18 years of age or older were students enrolled in psychology courses at UM. Qualtrics, an online platform used to administer surveys, collected baseline data and daily data for 14 nights. Participants completed baseline assessment in a computer laboratory on campus. After completing baseline assessment, participants completed surveys on Qualtrics via automated messaging software (i.e., www.tellmycell.com). Baseline measures differed from daily measures (see below for a detailed description). Participants completed baseline measures in approximately 10-15 minutes. Nightly surveys took approximately 5-10 minutes to complete. Participants received 3 credits for

full participation and were informed that they must complete the daily messages between 7:00 p.m. and 1:00 a.m.

Measures

Demographics. Participants completed a short demographic survey that included questions regarding age, ethnicity, and gender (see Appendix A). Participants provided their phone number on the demographics form to match data. Randomly-generated participant codes replaced phone numbers for data analyses to ensure the confidentiality of participants.

Depression Anxiety and Stress Scale – 21. The Depression Anxiety and Stress Scale (DASS – 21; Antony, Bieling, Cox, Enns, & Swinson, 1988; Lovibond & Lovibond, 1995; Appendix B) is a 21-item self-report measure that employs a 0-3 Likert-type scale format. Factor analyses identified three major subscales, each comprised of 7 items: Depression, Anxiety, and Stress. The Depression subscale measures dysphoric mood, while the Anxiety subscale assesses psychological impairment in different domains of anxiety symptoms, including arousal, panic, and fear. The Stress subscale measures overall irritability and response to stressors. Scores for each subscale range from 0-42, with higher scores indicative of more severe symptomatology. For the Depression subscale, scores of 0-9 are considered 'Normal,' 10-13 'Mild,' 14-20 'Moderate,' 21-27 'Severe,' and 28+ 'Extremely Severe.' For the Anxiety subscale, scores of 0-7 are considered 'Normal,' 8-9 'Mild,' 10-14 'Moderate,' 15-19 'Severe,' and 20+ 'Extremely Severe.' Finally, for the Stress subscale, scores of 0-14 are considered 'Normal,' 15-18 'Mild,' 19-25 'Moderate,' 26-33 'Severe,' and 34+ 'Extremely Severe.' While the DASS-21 is not a diagnostic measure per se, it provided important information regarding overall levels of psychological functioning in the current sample.

Alpha levels range from .82-.94 for the Depression subscale, .78-.90 for the Anxiety subscale, and .87-.93 for the Stress subscale (Antony et al., 1988; Lovibond & Lovibond, 1995). Recent studies demonstrate similar alpha levels, ranging from .84 to .94 across the three factors (Aiena, Baczwaski, Schulenberg, & Buchanan, 2015; Drescher, Schulenberg, & Smith, 2014; Rusli, Amrina, Trived, Loh, & Shashi, 2017). Recent factor-analytic techniques suggest a bifactor structure of anxiety and stress, indicating that anxiety and depression are both characterized by negative affect (Chin, Buchanan, Ebesutani, & Young, 2018). The DASS-21 provided descriptive information regarding the psychological well-being of college students, consistent with the three factors mentioned above. For the baseline DASS-21 scores, the Depression ($\alpha = .81$) and Stress ($\alpha = .82$) factors demonstrated good internal consistency, while the Anxiety ($\alpha = .72$) factor demonstrated acceptable internal consistency.

Meaning in Life Questionnaire. The Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006; Appendix C) is a 10-item scale that measures presence of meaning and search for meaning via a 7-point Likert-type response format. The 'Presence' facet of the MLQ (MLQ – P) assesses whether an individual perceives his or her life to be meaningful. Scores range from 5-35, with higher scores indicative of higher perceived meaning. The 'Search' facet of the MLQ (MLQ – S) measures an individual's perceived efforts searching for a meaningful life. Scores on the search subscale also range from 5-35, with higher scores indicating greater motivation to find meaning.

Both MLQ subscales yield reliability coefficients ranging from .80 to .90 (Park & Jeong, 2016; Steger et al., 2006; Schulenberg et al., 2011). Scores on the Presence subscale are positively correlated with life satisfaction and positive affect (Martela et al., 2018; Steger et al., 2006), lower overall state levels of stress (Park & Baumeister, 2017) and negatively correlated

with decreased depression over 3- and 6-month time frames (Disabato et al., 2017). Scores on the Search subscale are generally associated with negative outcomes in clinical samples (Schulenberg et al., 2011), such as depression and anxiety (Steger et al., 2009).

The MLQ provided baseline data and was adapted for daily assessment. In collecting daily data, questionnaire items were supplemented with the word "Today" to examine changes in both presence of meaning and search for meaning over a 14-day period (see Appendix D). For example, one item on the Presence subscale prompts the respondent to consider the following statement: "I understand my life's meaning." Instead, during the daily data collection the item read as follows: "Today, I understand my life's meaning." The MLQ – P measured presence of meaning or perceived 'significance,' and the MLQ – S measured perceived motivation for discovering 'significance.' While the 'Search' subscale was adapted for daily data collection, data from this subscale were not utilized in testing the aforementioned hypotheses. For the baseline MLQ scores, the Presence ($\alpha = .81$) and Search ($\alpha = .88$) subscales demonstrated good internal consistency.

Purpose in Life Test – Short Form. The Purpose in Life Test – Short Form (PIL – SF; Schulenberg & Melton, 2010; Appendix E) is a 4-item measure derived from the original Purpose in Life test (PIL; Crumbaugh & Maholick, 1964). The PIL – SF consists of items regarding both meaning and purpose in life. Scores range from 4-28, with higher scores indicating higher perceived meaning and purpose. Psychometric support for this measure is impressive, with the seminal psychometric paper exhibiting an alpha of .89 and others following suit (Aiena et al., 2016; Schulenberg et al., 2016). This measure, although relatively new, is related to psychological well-being and reduced distress (Schulenberg & Melton, 2010), high levels of religiosity and spirituality (Sharma et al., 2017), and decreased levels of posttraumatic

stress symptoms (Schulenberg et al., 2016). Baseline assessment utilized the original version of this measure, and daily assessment employed an adapted version (i.e., see Appendix F for the daily version). The word "Today" was substituted prior to each item for daily assessment. The PIL – SF measured the 'purpose' domain of meaning in this case, as it has been shown to provide incremental validity above and beyond MLQ – Presence subscale scores (Schulenberg & Melton, 2010). In other words, the PIL – SF and the MLQ – Presence subscale, while significantly related to one another, appear to assess distinct concepts. The baseline version of the PIL – SF demonstrated acceptable internal consistency ($\alpha = .79$).

Claremont Purpose Scale. The Claremont Purpose Scale (CPS; Bronk et al., 2018; Appendix G) is a 12-item scale that measures the three following domains of purpose: meaningfulness, goal orientation, and beyond-the-self orientation. The 3-factor model is supported by both exploratory and confirmatory factor analyses. The CPS measures meaningfulness, defined as an individual's perception of how meaningful or significant his or her life is. One example of an item on the CPS that measures personal meaning reads: "How clearly do you understand what it is that makes your life worthwhile?" Additionally, the CPS measures goal orientation, which is the extent to which one is engaging in behavior that is consistent with his/her goals. For example, one item on the CPS measuring goal orientation reads as follows: "How hard are you working to make your goals a reality?" Finally, the CPS measures beyond-the-self orientation, or the importance of making an impact in the world. For example, an item on the CPS that measures beyond-the-self orientation reads: "How often do you hope to leave the world better than you found it?"

The alpha coefficient reported in the seminal paper was .94. In examining specific factors separately, meaningfulness, goal orientation, and beyond-the-self orientation exhibited excellent

internal consistency (α = .86, .92, and .92, respectively; Bronk et al., 2018). Bronk et al. (2018)

discovered positive correlations between the CPS and life satisfaction, as well as negative

correlations with depression. Given the recent publication date for the CPS, no other validity data

are currently available. The CPS was used for baseline and daily assessment (see Appendices G

& H). For daily assessment, the word "Today" was substituted prior to each item for daily

assessment. The CPS was used for exploratory analyses in the present study. Conceptually, goal

directedness of the CPS may be similar to purpose as assessed by several items on the PIL – SF.

The CPS personal meaning subscale may be similar to the significance domain of meaning, and

is perhaps comparable to the MLQ – Presence subscale. The meaningfulness (α = .88), goal

orientation (α = .89), and the beyond-the-self orientation (α = .87) subscales demonstrated good

internal consistency for the baseline CPS measurement.

      Valuing Questionnaire. The Valuing Questionnaire (VQ; Smout et al., 2014; Appendix

I) is a 10-item scale that measures perceived valued living via a 7-point Likert-type response

format. Both exploratory and confirmatory factor analyses suggest a two-factor measure, with

five items per factor. The VQ measures both perceived Progress and Obstruction towards values

(Smout et al., 2014), or whether people perceive that they are living in accordance with their

values. One item on the VQ measuring progress towards values reads as follows: "I worked

toward my goals even if I didn't feel motivated to." Scores range from 0-30 for the Progress

factor, with higher scores indicating greater progress towards valued action. For the Obstruction

factor, scores range from 0-30, with higher scores indicating increased obstruction towards

valued living. One example of an item measuring obstruction towards values reads as follows:

"Difficult thoughts, feelings or memories got in the way of what I really wanted to do."

Alpha levels reported in the seminal paper (Smout et al., 2014) ranged from .70 (Obstruction factor) to .80 (Progress factor). The Progress factor was negatively correlated with the Obstruction factor, $r = -.52$ (Smout et al., 2014). A recent controlled trial reported an alpha level of .89 for the Progress factor and .84 for the Obstruction factor (Levin, Haeger, Pierce, & Twohig, 2017). Christie, Atkins, and Donald (2017) found alpha levels of .87 and .88 for the Progress and Obstruction factors, respectively. Smout et al. (2014) found the Progress subscale to be positively related to such concepts as life satisfaction, well-being, valued living (measured by the Valued Living Questionnaire), positive affect, and mindfulness. Additionally, they found the Progress subscale to be negatively related to depression, stress, and anxiety. The Obstruction factor was negatively related to life satisfaction, valued living (measured by the Valued Living Questionnaire), and positive affect. Further, the Obstruction factor was positively related to stress, anxiety, and depression. Recent studies found the VQ Progress subscale to be positively associated with mindfulness (Christie et al., 2017) and negatively associated with mental health problems in general (Levin, Haeger, Ong, & Twohig, 2018). The original version of the measure was utilized for baseline assessment, and an adapted version was used for daily assessment (see Appendix J). Specifically, the word "Today" was substituted prior to the original item for daily assessment. For the baseline version of the VQ, the Progress subscale demonstrated acceptable internal consistency ($\alpha = .79$), while the Obstruction factor demonstrated questionable internal consistency ($\alpha = .69$).

Acceptance and Action Questionnaire. The Acceptance and Action Questionnaire (AAQ – II; Bond et al., 2011; Appendix K) is a 7-item measure of experiential avoidance (i.e., psychological inflexibility). The AAQ – II employs a 7-point Likert-type response format. Scores range from 7-49, with higher scores indicating greater inflexibility or experiential

avoidance. Bond et al. (2011) reported an alpha level of .88. Alpha levels typically range from .78 to .97 (Flynn, Berkout, & Bordieri, 2016). Acceptance and Action Questionnaire – II scores predict depression, anxiety, and stress symptoms. Additionally, AAQ – II scores predict unique variance in posttraumatic stress symptoms in trauma-exposed Veterans (Meyer, Morissette, Kimbrel, Kruse, & Gulliver, 2013). Gamez, Chmielewski, Kotov, Ruggero, and Watson (2011) found higher AAQ – II scores to be associated with increased neuroticism and phobia symptoms. The original version of the measure was used for baseline assessment. An adapted version was used for daily assessment, with the word "Today" substituted prior to the original item for daily assessment (Appendix L). The baseline version of the AAQ – II demonstrated good internal consistency (α = .85).

Alcohol Use Disorders Identification Test. The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993; Appendix M) is a 10-item measure of alcohol consumption, dependence, and functional impairment due to alcohol use. The cut off point for hazardous drinking is typically a score at or above 8, with scores of 7 or less indicative of low risk for developing an Alcohol Use Disorder (Meneses-Gaya, Zuardi, & Loureiro, & Crippa, 2009). The AUDIT employs a 0-4 Likert-type response format. Scores range from 0-40, with higher scores indicative of problematic alcohol use, increased likelihood of dependence, and functional impairment due to alcohol use. Saunders et al. (1993) reported an overall alpha level of .93. Recent studies support the notion of high internal consistency coefficients, evidenced by psychometric studies in diverse samples (e.g., α = .92 for a Dutch sample; Hildebrand & Noteborn, 2015). Employing the cut-off point of 8, Saunders et al. (1993) discovered that, among individuals diagnosed with alcoholism, 99% of these individuals obtained a score of 8 or higher on the AUDIT. Similar to the DASS – 21, The AUDIT was

utilized to provide descriptive information regarding the level of alcohol and subsequent

functional impairment due to alcohol use in the current sample. The AUDIT demonstrated good

internal consistency for baseline data ($\alpha = .81$).

Proposed Analyses

Power. The number of factors inherently involved in a multilevel analysis causes

difficulty in establishing a meaningful protocol for power calculation (Field, Miles, & Field,

2012; Kreft & de Leeuw, 1998). The same authors conclude, however, that individuals should

include at least 20 contexts (i.e., groups) if examining interactions within a multilevel model.

The current study did not examine interactions and employed a two-level model with valued

living scores nested within individuals; therefore, a sample size of at least 20 individuals was

assumed sufficient. Based on an additional power analysis conducted in G-power (Faul,

Erdfelder, Lang, & Buchner, 2007) to calculate participant scores before and after participating

in the daily diary portion of the study (i.e., dependent samples *t*-test), a minimum of 34

participants would produce a medium effect size to determine changes before and after

participating in the current study (i.e., not directly applicable to the Multilevel Model analyses).

The current study recruited 100 participants to account for dropout and no shows, given that a

study employing similar methodology reported a drop-out rate of approximately 25%

(Finkelstein-Fox, Pavlacic, Schulenberg, Buchanan, & Park, in preparation). It was expected that

each participant would have 14 time points (one time point per day), equating to approximately

1400 total time points.

Data Screening. Data were screened for accuracy errors and assumptions of

homoscedasticity, independence, linearity, normality, additivity, and homogeneity in *R* (Field et

al., 2012). Imputation procedures were used to replace daily survey batteries (i.e., MLQ – P, PIL

– SF, AAQ – II, and the VQ) with less than 5% of data missing across all measures to calculate

total scores for MLM analyses (Field et al., 2012). The MLM analyses automatically excluded

individual survey batteries missing more than 5% of their data. Additionally, data from

individual daily surveys were screened for outliers using Mahalanobis distance (Field et al.,

2012). Finally, an intraclass correlation (ICC) was calculated, interpreted as the total amount of

variability in the outcome (values-based behavior) accounted for at the individual level (i.e.,

participants are different so variability is attributed to these differences).

Multilevel Modeling. The current study employed Multilevel Modeling (MLM) to

examine relationships between values progression and predictor variables on a daily level, as this

analysis controls for the nested nature of longitudinal data of multiple participants (Field et al.,

2012; King et al., 2006; Stefano et al., 2016).

Models for Values Progression. The *nlme* package was utilized to conduct MLM in *R*

(Pinheiro, Bates, DebRoy, & Sarkar, 2014). Initially, a fixed intercept model was calculated,

which was compared to a random intercept model to determine whether nesting by participant

was necessary. Fixed intercept models assume a similar start point on relevant outcomes (Shen,

2015). Although perhaps an illogical assumption at face value, it allows researchers to determine

if an MLM analysis is warranted by comparing it to the random intercept model, which allows

the intercept to vary (i.e., participants start in different places on the criterion measure). A

random intercept model was significantly different from the fixed intercept model via an

Analysis of Variance test in *R*. As such, data were nested by participant for the remainder of the

analyses, as participants reported different outcome scores at the beginning of the study. Then,

predictor variables were entered simultaneously. The predictor variables were as follows:

significance (measured by the MLQ – P), purpose (measured by the PIL – SF), and experiential

avoidance (measured by the AAQ – II). Constructs were entered simultaneously to determine the

relationships between each predictor and outcome variable (e.g., positive or negative) and which

predictor variables significantly predict values-based behavior. Mathematically, this approach is

similar to calculating average relationships between the aforementioned constructs. However,

MLM controls for the fact that participants have different start points and average scores

throughout the duration of the study. Finally, pseudo R^2 effect sizes were calculated to determine

the strength of the relationship between the predictor and outcome variables, or how much

variance fixed effects (i.e., meaning, purpose, and experiential avoidance) accounted for above

and beyond participant differences. The MLM analyses consisted of three separate components:

fixed intercept, random intercept, and random intercept using values-based behavior as an

outcome and the aforementioned variables as predictors. Model fit was assessed using Akaike's

Information Criterion (AIC), Schwarz's Bayesian Criterion (BIC), Log Likelihood, L. Ratio, and

p-values. Lower values on these criteria indicate less error (Bentler, 1990; Field et al., 2012).

  Models for Values Obstruction. The same process was repeated to examine values

obstruction as the behavioral outcome instead of values progression. In sum, the present study

calculated the following four models: Significance/meaning, purpose, and experiential avoidance

predicting values-based behavior, significance/meaning, purpose, and experiential avoidance

predicting obstruction towards values-based behavior, subscales from the CPS predicting values-

based behavior, and subscales from the CPS predicting obstruction towards values-based

behavior.

  Reliability and Validity of Adapted Measures. To gather data on in-time behavior

change, trait-based measures were converted to state measures for purposes of nightly

assessment. To control for these changes, reliability coefficients were calculated by nesting items

within days (see Kashdan & McKnight, 2013 for a detailed description of this process). After calculating a reliability coefficient for each day across all participants, these coefficients were averaged to determine overall internal consistency.

Variance Inflation Factors. To determine whether correlations between predictor variables affected variance in the outcome measures, variance inflation factors (VIF) were conducted to estimate the inflation of regression coefficients (i.e., meaning, purpose, and experiential avoidance) compared to no linear relationships between predictor variables. If predictor variables are highly correlated with other predictors, VIF should be large. As a general guideline, VIF should not exceed 10 (Belsley, Kuh, & Welsch, 1980).

III. RESULTS

Descriptive Statistics for Baseline Measures

Participants completed baseline measures on the following variables: depression, anxiety, stress, alcohol use, experiential avoidance, meaning, purpose in life, values progression, and values obstruction. The DASS – 21 was employed to gather normative data on depression, anxiety, and stress. Consistent with the guidelines delineated by Lovibond and Lovibond (1995), participants were within the 'Normal' ranges for the Depression ($M = 5.29$, $SD = 6.12$), Anxiety ($M = 6.77$, $SD = 5.47$), and Stress ($M = 11.10$, $SD = 8.02$) subscales. On average, participants reported scores below hazardous drinking (i.e., scores of 8 or greater constitute hazardous drinking according to Saunders et al., 1993; $M = 7.32$, $SD = 4.90$). Although, the Standard Deviation for the AUDIT suggests that some individuals in the sample reported hazardous drinking. Experiential avoidance ($M = 17.38$, $SD = 7.97$), meaning ($M = 24.59$, $SD = 5.53$), purpose in life ($M = 21.92$, $SD = 4.31$), values progression ($M = 19.92$, $SD = 5.67$) and values obstruction ($M = 11.53$, $SD = 5.27$) scores were similar to seminal articles examining the psychometric properties of these questionnaires (i.e., Bond et al., 2011; Steger et al., 2006; Schulenberg & Melton, 2010; Smout et al., 2014). Table 1 includes a correlation matrix of the aforementioned baseline variables, while Table 2 includes a correlation matrix of the adapted, daily measures.

Reliability of Daily Measures

To calculate reliability coefficients consistent with the methodology employed by

Kashdan and McKnight (2013), items were nested within days. After calculating coefficients for

each day across all participants, these values were averaged across all days to provide an overall

measure of internal consistency. Internal consistency coefficients were excellent for the Purpose

in Life Test – Short Form ($M = .93$, $SD = .03$) and the Acceptance and Action Questionnaire – II

($M = .94$, $SD = .02$). Coefficients were good for the Meaning in Life Questionnaire – Presence

subscale ($M = .87$, $SD = .05$), the Valuing Questionnaire – Progress subscale ($M = .89$, $SD = .08$),

and the Valuing Questionnaire – Obstruction subscale ($M = .87$, $SD = .03$).

Data Screening for Daily Measures

From the 100 individuals recruited from SONA, 74 unique participants completed

baseline questionnaires and were enrolled in TellMyCell to complete the daily, adapted

measures. After cross referencing baseline data to daily survey data and vice versa, 73 unique

participants completed a total of 938 individual surveys across the 14-day time period. In

screening for accuracy and quality, individual surveys were screened using an attention check in

the daily measures (i.e., "Please select this response"). Across the 14-day data collection period

and all 73 individuals, 87 individual surveys failed the attention check and were thus excluded

for final analyses. This resulted in 851 surveys across 73 unique participants. After screening

data for quality using an attention check, individuals outside of the completion range delineated

in the daily survey text messages (i.e., 7:00 p.m. to 1:00 a.m.) were excluded for final analyses.

Sixty individual surveys were outside of the required time frame and were thus excluded,

resulting in 791 individual surveys across 73 participants. Individual surveys were then screened

to determine the percentage of missing data. Individuals with more than 5% of their data missing

were excluded for final analyses. Five individual surveys had more than 5% of the data missing and were thus excluded. Further, two individuals had less than 5% of their data missing. However, these data were all on the same questionnaire. As a result, these surveys were excluded for final analyses to avoid imputation of an entire measure.

After screening for missing data, data were screened for outliers using Mahalanobis distance. While 68 individual surveys were identified as outliers, variability in individual surveys is expected. As such, these outliers were not excluded for final analyses. The final dataset included 784 daily surveys across 73 unique participants ($M = 10.74$, $SD = 2.93$). Data met assumptions of normality, linearity, homogeneity, and homoscedasticity. High correlations were present for repeated measure constructs (see Table 2). Experiential avoidance (VIF = 1.10), purpose in life (VIF = 1.42), and presence of meaning (VIF = 1.42) did not indicate any adjustment in values obstruction variance due to multicollinearity. Additionally, experiential avoidance (VIF = 1.11), purpose in life (VIF = 1.63), and presence of meaning (VIF = 1.62) did not indicate any adjustment in values progress due to multicollinearity. In sum, VIF values did not indicate the need to remove these variables.

Hypothesis 1

Prior to conducting multilevel models, the current study examined the magnitude of individual differences. In calculating an ICC from a random intercept model with values progression as the outcome, individual differences explained 55% of the variance in values progression scores ($ICC = .55$). The remaining 45% of the variance is assumed to be attributable to other factors (e.g., time, fixed effects, or error).

In conducting multilevel models, the random intercept model demonstrated better fit than the fixed intercept model, $p < .001$, suggesting that participant start points varied across values

progression. After adding predictors simultaneously across all participants, meaning ($b = 0.22$, $t(708) = 5.05$, $p < .001$) and purpose ($b = 0.70$, $t(708) = 13.28$, $p < .001$) predicted same-day values progression. These fixed effects (i.e., meaning, purpose, and experiential avoidance) accounted for a meaningful portion of the variance in values progression scores within individuals, $_{pseudo}R^2 = .53$. Individual differences (i.e., random factors) accounted for approximately 9% additional variance above and beyond fixed factors, $_{pseudo}R^2 = .62$. These results are in contrast to the ICC conducted from the empty random intercept model (i.e., no predictors), which suggested that 55% of the variance in values progression was due to individual differences. The MLM results suggest that only 9% of the variance is due to individual differences, after accounting for the fixed effects. Across all participants and on average, individuals reporting higher meaning and purpose scores reported higher values progression scores. As such, Hypothesis 1 was partially supported. Table 3 includes model comparisons with relevant fit statistics, ranging from the fixed intercept model to the predictor model.

Hypothesis 2

Using an ICC from a random intercept model with values obstruction as the outcome, 57% of the variance in values progression was due to individual differences ($ICC = .57$). The remaining variance is attributable to other factors (i.e., time, fixed effects, or error).

The random intercept model demonstrated significantly better fit than the fixed intercept model, $p < .001$. After adding predictor variables (i.e., meaning, purpose, and experiential avoidance) to the random intercept model simultaneously, both experiential avoidance ($b = 0.38$, $t(708) = 15.63$, $p < .001$) and meaning ($b = - 0.12$, $t(708) = -2.66$, $p < .01$) predicted values obstruction. Contrary to Hypothesis 2, purpose did not predict values obstruction, $p > .05$.

Together, these fixed factors accounted for a meaningful percentage of the variance in values obstruction scores within individuals, $_{pseudo}R^2 = .36$. Individual differences accounted for an additional 26% of the variance, $_{pseudo}R^2 = .62$, after accounting for the fixed effects. Similar to Hypothesis 1, these effect sizes are in contrast to the ICC. In conducting the ICC, 57% of the variance was attributable to individual differences. The MLM suggests that fixed effects account for approximately 35%, with individual differences accounting for only 30%. Across individuals and on average, individuals reporting increased levels of experiential avoidance reported higher same-day values obstruction scores. Individuals reporting increased levels of meaning in life reported lower values obstruction scores. Table 4 includes model comparisons with relevant fit statistics, ranging from the intercept model to the predictor model.

Claremont Purpose Scale Exploratory Analyses

The random intercept model, similar to other models, demonstrated better fit than the fixed intercept model (i.e., equal start point for values progression and values obstruction, $p < .001$). Predictor variables (i.e., meaningfulness, goal orientation, and beyond-the-self orientation) were entered simultaneously. Meaningfulness ($b = 0.43$, $t(712) = 3.09$, $p < .001$), goal orientation ($b = 0.61$, $t(712) = 5.24$, $p < .001$), and beyond-the-self orientation ($b = 0.44$, $t(712) = 5.89$, $p < .001$) significantly predicted values progression, together accounting for a meaningful portion of the variance in values progression scores within individuals, $_{pseudo}R^2 = .52$. Individual differences accounted for an additional 13% of the variance, $_{pseudo}R^2 = .66$, after accounting for fixed effects. Across participants and on average, individuals reporting an increased sense of meaning, goal-driven behavior, and beyond-the-self orientation reported higher same-day values progression.

In conducting similar analyses with values obstruction as the outcome variable, the random intercept model demonstrated better fit than the fixed intercept model, $p < .001$.

Meaningfulness (b = -0.35, $t(712)$ = -3.46, $p < .001$) significantly predicted values obstruction. Across participants and on average, individuals reporting a greater sense of meaning reported same-day values obstruction. Both goal orientation (b = -0.13, $t(712)$ = -1.50, p = .13) and beyond-the-self orientation (b = 0.07, $t(712)$ = 0.77, p = .44) did not significantly predict values obstruction. Together, fixed factors accounted for 4% of the variance, $_{pseudo}R^2$ = .04. Individual differences accounted for a much larger percentage of the variance, $_{pseudo}R^2$ = .57, after accounting for fixed effects. Tables 5 and 6 include model comparisons with relevant fit statistics. Table 7 includes a correlation matrix between the baseline subscales of the CPS, the PIL – SF, and the MLQ to provide added context on how similar constructs relate across different questionnaires.

IV. DISCUSSION

Modern, process-based cognitive-behavioral approaches emphasize skill-building techniques (e.g., appraising cognitions, emotion regulation, inhibiting emotionally-driven behaviors) in conjunction with engagement in valued/goal-driven action (i.e., drawing from ACT and Logotherapy) to reduce symptomatology and promote a meaningful/purposeful life simultaneously (Hayes & Hofmann, 2018). This inclusive, process-based model proposed by Hayes and Hofmann (2018) suggests that values-based behavior is an essential ingredient to evidence-based practice and should be incorporated into modern therapeutic practice. Aside from evident therapeutic value and as demonstrated across various contexts (e.g., physical health outcomes, psychological outcomes, different populations), engaging in values consistent behavior is essential to human nature (Schulenberg et al., 2016), considering that 40% of Americans report a lack of life purpose (Kobau et al., 2010). During times of hardship, individuals possessing a sense of meaning are better able to engage in values-based behavior, despite current suffering (Kashdan et al., 2011). College students are no exception to the experience of suffering.

Collegial demands such as advanced coursework, identity development, and developing and establishing relationships (Beiter et al., 2015; Yang et al., 2017) generate a context that increases the probability of maladaptive behaviors and the onset of various forms of psychopathology. In a college population, maladjustment is associated with alcohol use and psychological distress (Trevisan et al., 2017). Alcohol use is related to maladaptive outcomes

40

(i.e., sexual assault, negative mood states, suicidal ideation; Hingson, 2010; Howland et al., 2010; Perkins, 2002). College students may also engage in experiential avoidance strategies, defined as behaviors reducing the frequency of aversive thoughts or physiological sensations (Hayes et al., 1996). Experiential avoidance is considered to be a transdiagnostic vulnerability factor across various forms of psychopathology and is negatively related to psychological well-being and physical functioning (Hardy & Segerstrom, 2017). Although college students are prone to negative adjustment experiences, matriculating through college provides opportunities to engage in valued activities. Engaging in valued activities is related to increased levels of quality of life and serves as a protective factor in promoting positive adjustment (Steger et al., 2009). However, few studies have documented the relations between values-based behavior and forms of well-being (e.g., meaning and purpose), as well as factors theorized to interfere with valued living (e.g., experiential avoidance) in nonclinical samples of college students, despite reported suffering in this population.

Within a college setting, values-based behavior is negatively related to both episodic drinking (Miller et al., 2016) and depression (Plumb & Hayes, 2008). Clinical studies show a positive relationship with values-based behavior and meaning and purpose (e.g., Kashdan et al., 2007; Kashdan & McKnight, 2013). Despite adjustment-related difficulties in college students, negative relations with values-based behavior and psychopathology, and positive and theorized relations with values-based behavior and facets of positive emotionality (e.g., meaning and purpose), no study has examined values-based behavior with meaning and purpose in the same study. Meaning and purpose were recently delineated into separate constructs, and both are imperative in the promotion of well-being.

Frankl (1966) defined meaning as a positive emotional experience that occurs during goal achievement and interactions with others and the environment. In his early works, Frankl used meaning and purpose interchangeably. Only recently did Martela and Steger (2016) suggest dividing meaning and purpose into separate constructs. Purpose is now defined as behavioral engagement towards attainable goals (Damon et al., 2013), contrasted from positive emotional experiences that characterize meaning. Due to the relatively recent division of meaning and purpose in the literature, their theorized, distinguished relations with values-based behavior, the lack of values-based programming for college students (Trevisan et al., 2017), and the recent influx of internet-delivered treatments and monitoring techniques in psychotherapy and modern technology (Andersson, 2018), daily diary studies examining these constructs using contemporary data collection methods in a college sample are necessary to determine average relations across time periods. An understanding of the factors that both promote and inhibit valued living across a 14-day time period will offer more precise estimations of these constructs, especially considering that valued living varies at the daily level (Finkelstein-Fox et al., in preparation). As such, the current study examined associations between meaning, purpose, experiential avoidance, valued behavior, and obstruction towards valued behavior in a college sample using EMA data collection methods across a 14-day time period.

Hypothesis 1

It was hypothesized that, across participants and on average across days, perceived significance/meaning in life and purpose would positively and uniquely predict same-day values-based behavior and experiential avoidance would negatively predict same-day values-based behavior (i.e., by calculating an average of the daily relations across participants). The current college sample reported normal levels of depression, anxiety, and stress. While the average

drinking level of the current sample was subclinical on average, variability suggests that some individuals in the current study engage in hazardous levels of drinking. Results partially supported Hypothesis 1, suggesting that, increased levels of meaning and purpose are related to increased progression towards valued domains on average and across participants. Experiential avoidance did not predict values-based behavior, contrary to Hypothesis 1. Together, meaning, purpose, and experiential avoidance accounted for a meaningful percentage of the variance in values progression. Participant differences accounted for additional variance.

From a behavioral perspective, Skinner (1971) conceptualized values-based behavior as a form of intrinsic reinforcement, wherein values-based behavior that is consistent with that value will be reinforced (Lundgren & Larsson, 2018). Evolutionary perspectives suggest that transdiagnostic processes prevalent in psychopathology (e.g., experiential avoidance, worry) inhibit variation in behavior, thereby perpetuating symptomatology (Hayes, Monestes, & Wilson, 2018). Engaging in values-based behavior is therefore conceptualized as variable, adaptive behavior that leads to intrinsic and sometimes extrinsic reinforcers (Hayes et al., 2018). From a Logotherapy perspective within the context of Viktor Frankl's work, individuals have an innate capacity to find purpose and meaning. Frankl (1959/2006) suggested that individuals must complete individualized "concrete" assignments to achieve fulfillment or meaning, which supports this notion of meaning and its relationship to values-based behavior. Regardless of the theoretical perspective or orientation, values-based behavior is related to a variety of positive outcomes. In the current study, increased perceptions of meaning and purpose were related to increases in values-based behavior across participants. These results support the aforementioned perspectives on human behavior, elucidating a daily link between valued living and positive emotionality (i.e., meaning and purpose).

Contemporary conceptualizations of meaning and purpose suggest delineating into separate constructs (see George & Park, 2016 or Martela & Steger, 2016). No studies have examined both meaning and purpose within the context of values-based behavior, despite theoretical underpinnings. In the current study and as expected, meaning and purpose were unique predictors of values-based behavior, with purpose being a stronger predictor. This finding is perhaps due to the idea that purpose is characterized by goal-driven behavior. McKnight and Kashdan (2009) conceptualized purpose as a life aim that manages behavior. According to this conceptualization, individuals may have more than one 'purpose' in life. While not directly similar, values are also multifaceted. Individuals may recognize multiple values (e.g., health and family) that they move towards. While values are ongoing in nature and not defined by any endpoint in contrast to purpose, both values and purpose represent a behavioral progression towards a given domain. The similar construct conceptualization of purpose and meaning may explain the stronger relationship between purpose and values-based behavior as compared to meaning and values-based behavior.

Meaning, rather, is conceptualized as the perception that one's life has value, is important, and worth living. Engaging in values-based behavior may explain the strong relations between meaning and purpose, given that values are theorized to provide a sense of importance or a life that is worth living. The uniqueness in predictive ability of both meaning and purpose provides a rationale for continuing to examine these constructs separately in future research. Of course, the current sample reported subclinical levels of psychopathology, limiting the generalizability of the findings to clinical contexts. However, Kashdan and McKnight (2013) discovered an important link between purpose in life and positive emotionality in individuals diagnosed with social anxiety disorder. These findings illustrate the importance of both meaning

44

and purpose as individual constructs, and these constructs seem to be important in both nonclinical and clinical samples.

Contrary to Hypothesis 1, experiential avoidance did not predict same-day values-based behavior, despite the theoretical link between engaging in experiential avoidance and an inhibition of valued activities (Wilson & Murrell, 2004). When examined in isolation (i.e., individual predictor), greater levels of experiential avoidance predicted less values-based behavior. However, this effect disappeared when adding meaning and purpose (i.e., not a suppression effect given variance inflation factor results). Of course, experiential avoidance is only considered "bad" when and if it interferes with valued living (Wilson & DuFrene, 2009). For example, trying not to think about physical pain during a procedure at the doctor's office has little to no effect on values-based behavior and may be adaptive in this specific context. Therefore, it is possible that the experiential avoidance behaviors engaged in by the current sample did not interfere with valued behavior. Additionally, studies measuring experiential avoidance and that target exposure to negative thoughts and physiological sensations are typically conducted with a clinical population or individuals having experienced a stressful/traumatic event (e.g., expressive writing literature; Niles, Haltom, Mulvenna, Lieberman, & Stanton, 2014). The current, nonclinical sample may engage in experiential avoidance behaviors that are not maladaptive. In referencing a psychometric explanation, Smout et al. (2014) discussed how the Progress factor may not be adequately captured by the AAQ-II, given that it measures valued living in the presence of distress. In completing questions related to the Progress factor, individuals report whether they engage in valued behavior despite experiencing experiential avoidance. Therefore, one might expect a null relationship between experiential avoidance and progress towards valued domains, which was found in the current

study. The current study also examined associations between daily experiences of meaning, purpose, experiential avoidance, and obstruction towards valued behavior.

Hypothesis 2

Second, it was hypothesized that, across participants and on average, meaning and purpose would negatively predict same-day obstruction towards values-based behavior while experiential avoidance would positively predict same-day obstruction towards values-based behavior. Results partially supported Hypothesis 2, suggesting that increased levels of experiential avoidance were positively related to same-day obstructions towards valued domains. Further, increased perceptions of meaning were negatively related to same-day obstruction towards valued domains.

As mentioned, experiential avoidance is only considered "bad" when it interferes with valued living. In their original psychometric paper, Smout et al. (2014) reported a strong correlation between experiential avoidance and obstruction towards valued living, given the similarities in the constructs. For example, obstruction factor questions on the VQ ask participants whether negative thoughts and physiological sensations prevented them from engaging in values-based activities. This is similar to a definition of experiential avoidance and questions on the AAQ – II, where the avoidance of negative thoughts is only conceptualized to be maladaptive if they interfere with valued living. The current study supports this notion, evidenced by the strong baseline correlation between experiential avoidance and obstruction towards valued living presented in Table 1. Smout et al. (2014) also reported that, despite the strong correlation between experiential avoidance and obstruction towards valued living, these constructs should be considered separate and are not redundant. However, construct similarity, specifically the measures utilized to measure both experiential avoidance (i.e., AAQ – II and

46

VQ), may explain the significant findings for experiential avoidance predicting obstruction towards valued living but not progress towards valued living. These findings provide further evidence for the relations between experiential avoidance behaviors and progress/obstruction towards valued living.

Claremont Purpose Scale Exploratory Analyses

In addition to the primary analyses mentioned above, the current study conducted exploratory analyses on the newly-developed CPS. Factor analyses from the CPS suggest the following three factors: meaningfulness, goal orientation, and beyond-the-self. In the current study, all three factors uniquely predicted progression towards values-based behavior. In examining these constructs within the context of values obstruction, however, only meaningfulness predicted values obstruction. These exploratory analyses support those listed above, suggesting that meaning and purpose are relevant factors within the context of values progression. Within the context of values obstruction, however, only meaning seems to play an important role. In sum, these findings were corroborated across both the MLQ and the CPS. However, the baseline subscales of both the MLQ and the CPS were highly correlated with each other, as shown in Table 7. The beyond-the-self component of meaning typically reflects making a difference in the broader world (Bronk et al., 2018). The fact that values are personally chosen as opposed to reflective of a broader world may explain the null findings between beyond-the-self and values obstruction. These exploratory analyses support the results listed above, suggesting that a sense of meaning and purpose are important factors to consider within the context of values progression and values obstruction.

Limitations

Several limitations warrant consideration. The sample was predominantly female and White, limiting the generalizability of the findings and inhibiting external validity. However, the purposive sampling of college students may accurately capture disparities of college samples in the southeastern region, enhancing generalizability to this specific context. The current sample also reported subclinical levels of depression, anxiety, and stress, as well as a subclinical average drinking level. These descriptive statistics for depression, anxiety, stress, and alcohol use limit generalizing the results from the current study to a clinical population. An additional limitation is the duration of the study (i.e., 14 days). While longitudinal studies typically allow the researcher to establish causal relations between the independent and dependent variable, the lack of a manipulation prohibits the current study from establishing such relations. Further, the limited length of time in the current study prevents the reporting of such relations and may not accurately capture fluctuations of these constructs over a longer period of time. However, the length employed in the current study is similar to other daily diary studies with related constructs (e.g., Berghoff et al., 2018). A final limitation is the unexamined psychometric properties of the adapted measures. While each adapted measure employed in the current study demonstrated excellent internal consistency, adapting a trait-based measure to a state-based measure introduces psychometric limitations, such as validity concerns. However, in examining correlations across all participants and all outcome measures, these correlations were in the expected directions. Additionally, in conducting VIF tests, correlations did not change the variance in the outcome.

Future Directions and Concluding Comments.

In line with the findings and limitations, directions for future research are offered. Future studies considering the same methodology should employ diverse samples varying across demographic characteristics (e.g., age, gender, ethnicity, geographic regions). Specifically,

48

researchers may choose to examine moderating effects of various demographic characteristics (i.e., religion or socioeconomic status). Understanding different moderators (i.e., depression, alcohol use) may help shed light on how these constructs vary in those experiencing more severe forms of psychopathology. Doing so will enhance the generalizability of the findings to clinical contexts and provide researchers with a better understanding of the relations between these constructs and different constructs. While meaning (or significance) and purpose are considered relatively stable individual differences, the current study provides evidence (i.e., ICC statistics) that these constructs fluctuate on a daily level in employing adapted measures. This study adds to the burgeoning research which suggests variations in valued living on a daily basis (Finkelstein-Fox et al., in preparation). An understanding of the predictors of these fluctuations may prove useful in designing clinical interventions.

As mentioned, values-based programming within a college context is seemingly lacking. However, values-based behavior appears to be a key component in promoting meaning and purpose in life. Future studies may evaluate how these constructs fluctuate over longer periods of time in clinical and nonclinical day-to-day experiences of college students. As mentioned, college students may experience various contextual (e.g., course demands) or private (e.g., homesickness) events that serve as barriers to these constructs. Future research more generally should continue to examine these constructs in various settings to further flesh out relationships. Academics and administrators may consider incorporating values-based activities into their orientation programs for college students who typically experience issues related to adjustment, given that engagement in these activities is related to a sense of meaning and purpose. For example, many universities require courses for first-year students as an introduction to university life. Instructors may consider incorporating values identification exercises in conjunction with

setting career goals. Additionally, researchers may choose to evaluate the efficacy of such programming to determine whether it is feasible/efficacious to incorporate them into orientation programming. Overall, the current study demonstrated that meaning and purpose are positively related to behavioral progression towards values, while experiential avoidance and meaning are positively and negatively related to obstruction towards values, respectively. Researchers should continue examining meaning and purpose separately in future studies, given their unique predictive validity and relations to behavioral outcomes, such as valued living. An understanding of how these constructs fluctuate will help researchers design and tailor interventions.

LIST OF REFERENCES

LIST OF REFERENCES

Abramoski, K., Pierce, J., Hauck, C., & Stoddard, S. (2017). Variations in adolescent purpose in

life and their association with lifetime substance use. *The Journal of School Nursing,*

34(2), 114-120. doi:10.1177/1059840517696964

Adams, C. M. (2012). Calling and career counseling with college students: Finding meaning in

work and life. *Journal of College Counseling, 15*(1), 65-80. doi:10.1002/j.2161-

1882.2012.00006.x

Aiena, B. J., Baczwaski, B. J., Schulenberg, S. E., & Buchanan, E. M. (2015). Measuring

resilience with the RS-14: A tale of two samples. *Journal of Personality Assessment,*

97(3), 291-300. doi:10.1080/00223891

Aiena, B. J., Buchanan, E. M., Smith, C. V., & Schulenberg, S. E. (2016). Meaning, resilience,

and traumatic stress following the Deepwater Horizon oil spill: A study of Mississippi

coastal residents seeking mental health services. *Journal of Clinical Psychology, 72,*

1264-1278. doi:10.1002/jclp.22232

Andersson, G. (2018). Information technology and the changing role of practice. In S. C. Hayes

& S. G. Hofmann (Eds.), *Process-based CBT: The science and core clinical*

competencies of Cognitive Behavioral Therapy (pp. 67-82). Oakland, CA: Context Press.

Antony, M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric

properties of the 42-item and 21-item versions of the Depression Anxiety Stress scales in

clinical groups and a community sample. *Psychological Assessment, 10*, 176-181

Bahraini, N. H., Devore, M. D., Monteith, L. L., Forster, J. E., Bensen, S., & Brenner, L. A. (2013). The role of value importance and success in understanding suicidal ideation among Veterans. *Journal of Contextual Behavioral Science, 2*(1), 31-38. doi:10.1016/j.jcbs.2013.03.001

Balk, D. E. (2001). College student bereavement, scholarship, and the university: A call for university engagement. *Death Studies, 25*(1), 67-84. doi:10.1080/07481180126146

Bassi, M., Fave, A. D., Steca, P., & Caprara, G. V. (2018). Adolescents' regulatory emotional self-efficacy beliefs and daily affect intensity. *Motivation and Emotion, 42*(2), 287-298. doi:10.1007/s11031-018-9669-3

Batten, S. V., Follette, V. M., & Aban, I. B. (2002). Experiential avoidance and high-risk sexual behavior in survivors of child sexual abuse. *Journal of Child Sexual Abuse, 10,* 101-120. doi:10.1300/J070v10n02_06

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects.* University of Pennsylvania Press.

Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M.,…Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders, 173,* 90-96. doi:10.1016/j.jad.2014.10.054.

Belsley, D. A., Kuh, E., & Welsch, R. E. (1980). *Regression diagnostics: Identifying influential data and sources of collinearity.* New York: John Wiley

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246. doi:10.1037/0033-2909.107.2.238

Berghoff, C. R., Ritzert, T. R., & Forsyth, J. P. (2018). Value-guided action: Within-day and

    lagged relations of experiential avoidance, mindful awareness, and cognitive fusion in a

    non-clinical sample. *Journal of Contextual Behavioral Science,* Advanced online

    publication. doi:10.1016/j.jcbs.2018.07.005

Berghoff, C. R., Tull, M. T., DiLillo, D., Messman-Moore, T., & Gratz, K. L. (2017). The role of

    experiential avoidance in the relation between anxiety disorder diagnoses and future

    physical health symptoms in a community sample of young adult women. *Journal of*

    Contextual Behavioral Science, 6(1), 29-34. doi:10.1016/j.jcbs.2016.11.002

Bernard, M. B., Strassfer, F., Gamondi, C., Braunschweig, G., Forster, M., Dipl-Pad, K. K.

    E.,…Borasio, G. D. (2017). Relationship between spirituality, meaning in life,

    psychological distress, wish for hastened death, and their influence on quality of life in

    palliative care patients. *Journal of Pain and Symptom Management, 54*(4), 514-522.

    doi:10.1016/j.painsymman.2017.07.019

Blevins, C. E., Abrantes, A. M., & Stephens, R. S. (2016). Motivational pathways from

    antecedents of alcohol use to consequences: A structural model of using alcohol to cope

    with negative affect. *The American Journal of Drug and Alcohol Abuse, 42*(4), 395-403.

    doi:10.3109/00952990.2016.1141915

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., ... & Zettle,

    R. D. (2011). Preliminary psychometric properties of the Acceptance and Action

    Questionnaire–II: A revised measure of psychological inflexibility and experiential

    avoidance. *Behavior Therapy, 42*, 676-688. doi:10.1016/j.beth.2011.03.007

Bonebright, C. A., Clay, D. L., & Ankenmann, R. D. (2000). The relationship of workaholism with work-life conflict, life satisfaction, and purpose in life. *Journal of Counseling Psychology, 47,* 469-477. doi:10.1037/0022-0167.47.4.469

Brandstatter, M., Baumann, U., Borasio, G. D., & Fegg, M. J. (2012). Systematic review of meaning in life assessment instruments. *Psycho-Oncology, 21*, 1034-1052. doi:10.1002.pon.2113

Branstetter, A. D., Cushing, C., & Duleh, T. (2009). Personal values and pain tolerance: Does a values intervention add to acceptance? *Journal of Pain, 10*(8), 887-892. doi:10.1016/j.jpain.2009.01.001

Bronk, K. C. (2013). *Purpose in life: A component of optimal youth development.* New York, NY: Springer.

Bronk, K. C., & Mangan, S. (2016). Strategies for cultivating purpose among adolescents in clinical settings. In P. Russo Netzer, S. E. Schulenberg, & A. Batthyany (Eds.), *Clinical perspectives on meaning* (pp. 407-421). Springer International: Switzerland.

Bronk, K. C., Riches, B. R., & Mangan, S. A. (2018). Claremont Purpose Scale: A measure that assesses the three dimensions of purpose among adolescents. *Research in Human Development, 15*(2), 101-117. doi:10.1080/15427609.2018.1441577

Bruening, M., van Woerden, I., Todd, M., Brennhofer, S., Laska, M., & Dunton, G. (2016). A mobile Ecological Momentary Assessment tool (devilSPARC) for nutrition and physical activity behaviors in college students: A validation study. *Journal of Medical Internet Research, 18*(7), e209. doi:10.2196/jmir.5969

Cameron, A. Y., Reed, K. P., & Gaudiano, B. A. (2014). Addressing treatment motivation in

    borderline personality disorder: Rationale for incorporating values-based exercises into

    Dialectical Behavior Therapy. *Journal of Contemporary Psychotherapy, 44*(2), 109-116.

    doi:10.1007/s10879-013-9253-9

Chamberlain, K., & Zika, S. (1988). Religiosity, life meaning and wellbeing: Some relationships

    in a sample of women. *Journal for the Scientific Study of Religion, 27,* 411-420.

    doi:10.2307/1387379

Chin, E. G., Buchanan, E. M., Ebesutani, C., & Young, J. (2018). Depression, anxiety, and

    stress: How should clinicians interpret the 21-item Depression, Anxiety, and Stress

    Scales? *Psychological Reports,* e-pub ahead of print. doi:10.1177/0033294118783508.

Christie, A. M., Atkins, P. W. B., & Donald, J. N. (2017). The meaning and doing of

    mindfulness: The role of values in the link between mindfulness and well-being.

    Mindfulness, 8(2), 368-378. doi:10.1007/s12671-016-0606-9

Chui, R. C. F. (2018). Dwelling Chinese elders with low socioeconomic status. *Gerontology and*

    Geriatric Medicine, 4, 1-8.

Cook, P. F., McElwain, C. J., & Bradley-Springer, L. A. (2016). Brief report on Ecological

    Momentary Assessment: Everyday states predict HIV prevention behaviors. *BMC*

    Research Notes, 9(9). doi:10.1186/s13104-015-1814-4

Cosco, T. D., Kaushal, A., Hardy, R., Richards, M., Kuh, D., & Stafford, M. (2017).

    Operationalising resilience in longitudinal studies: A systematic review of

    methodological approaches. *Journal of Epidemiology and Community Health, 71,* 98-

    103. doi:10.1136/jech-2015-206980

Cousins, C., Servaty-Seib, H. L., & Lockman, J. (2015). College student adjustment and coping: Bereaved and nonbereaved students. *Journal of Death and Dying, 74*(4), 386-409. doi:10.1177/0030222815598911

Creswell, J. D., Welch, W. T., Taylor, S. E., Sherman, D. K., Gruenewald, T. L., & Mann, T. (2005). Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychological Science, 16,* 846-851. doi:10.1111/j.1467-9280.2005.01624.x

Crumbaugh, J. C., & Maholick, L. T. (1964). An experimental study in existentialism: The psychometric approach to Frankl's concept of noogenic neurosis. *Journal of Clinical Psychology, 20*, 200-207. doi:10.1002/1097-4679

Dahl, J. C., Plumb, J. C., Stewart, I., & Lundgren, T. (2009). *The art and science of valuing in psychotherapy: Helping clients discover, explore, and commit to valued action using Acceptance and Commitment Therapy*. Oakland, CA: New Harbinger.

Davis, E. L., Deane, F. P., & Lyons, G. C. B. (2016). Prediction of individual differences in adjustment to loss: Acceptance and valued-living as critical appraisal and coping strengths. *Death Studies, 40*(4), 211-222. doi:10.1080/07481187.2015.1122677

Disabato, D. J., Kashdan, T. B., Short, J. L., & Jarden, A. (2017). What predicts positive life events that influence the course of depression? A longitudinal examination of gratitude and meaning in life. *Cognitive Therapy and Research, 41*(3), 444-458. doi:10.1007/s10608-016-9785-x

Drescher, C. F., Schulenberg, S. E., & Smith, C. V. (2014). The Deepwater Horizon Oil Spill and the Mississippi Gulf Coast: Mental health in the context of a technological disaster. *American Journal of Orthopsychiatry, 84*(2), 142-151. doi:10.1037/h0099382

Dursun, P., Steger, M. F., Bentele, C., & Schulenberg, S. E. (2016). Meaning and posttraumatic

growth among survivors of the September 2013 Colorado floods. *Journal of Clinical

Psychology*, *72*, 1247-1263. doi:10.1002/jclp.22344

English, T., Davis, J., Wei, M., & Gross, J. J. (2017). Homesickness and adjustment across the

first year of college: A longitudinal study. *Emotion, 17*(1), 1-5. doi:10.1037/emo0000235

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical

power analysis program for the social, behavioral, and biomedical sciences. *Behavior

Research Methods, 39*(2), 175-191. doi:10.3758/BF03193146

Faurholt-Jepsen, M., Bauer, M., & Kessing, L. V. (2018). Smartphone-based objective

monitoring in bipolar disorder: Status and considerations. *International Journal of

Bipolar Disorders, 6*(1), 6. doi:10.1186/s40345-017-0110-8

Field, A., Miles, J., & Field, Z. (2012). *Discovering statistics using R*. Newbury Park, CA:

SAGE Publications.

Finkelstein-Fox, L., Pavlacic, J. M., Schulenberg, S. E., Buchanan, E. M., & Park, C. L. (in

preparation). Valued living in daily experiences: Relations with meaning, mindfulness,

psychological flexibility, and stressors.

Florez, I. A. (2017). *On the relationship between meaning and prejudice: Examining self-

transcendence and value-behavior consistency in a sample of college students*

(Unpublished doctoral dissertation). University of Mississippi, University, MS.

Flynn, M. K., Berkout, O. V., & Bordieri, M. J. (2016). Cultural considerations in the

measurement of psychological flexibility: Initial validation of the Acceptance and Action

Questionnaire – II among Hispanic individuals. *Behavior Analysis: Research and

Practice, 16*(2), 81-93. doi:10.1037/bar0000035

Fontana, A., & Rosenheck, R. (2004). Trauma, change in strength of religious faith, and mental

      health service use among Veterans treated for PTSD. *The Journal of Nervous and Mental*

      Disease, 192(9), 579-584. doi: 10.1097/01.nmd.0000138224.17375.55

Frankl, V. E. (1959/2006). *Man's search for meaning* (Rev. ed.). Boston, MA: Beacon Press.

Frankl, V. E. (1966). What is meant by meaning? *Journal of Existentialism, 7,* 21-28.

Gamez, W., Chmielewski, M., Kotov, R., Ruggero, C., & Watson, D. (2011). Development of a

      measure of experiential avoidance: The Multidimensional Experiential Avoidance

      Questionnaire. *Psychological Assessment, 23*, 692-713. doi:10.1037/a0023242

Garcia-Olivia, C., & Piqueras, J. A. (2016). Experiential avoidance and technological addictions

      in adolescents. *Journal of Behavioral Addictions, 5*(2), 293-303.

      doi:10.1556/2006.5.2016.041

Garlow, S. J., Rosenberg, J., Moore, D., Haas, A. P., Koestner, B., Hendin, H., & Nemeroff, C.

      B. (2007). Depression, desperation, and suicidal ideation in college students: Results

      from the American Foundation for Suicide Prevention College Screening Project at

      Emory University. *Depression and Anxiety, 25*(6), 482-488. doi:10.1002/da.20321

George, L. S., & Park, C. L. (2013). Are meaning and purpose distinct? An examination of

      correlates and predictors. *The Journal of Positive Psychology, 8*(5), 365-375.

      doi:10.1080/17439760.2013.805801

George, L. S., & Park, C. L. (2016). Meaning in life as comprehension, purpose, and mattering:

      Toward integration and new research questions. *Review of General Psychology, 20*(3),

      205-220.

Graham, J. R., West, L., & Roemer, L. (2015). A preliminary exploration of the moderating role

    of valued living in the relationships between racist experiences and anxious and

    depressive symptoms. *Journal of Contextual Behavioral Science, 4*(1), 48-55.

    doi:10.1016/j.jcbs.2014.11.001

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences.

    Psychophysiology, 39, 281-291. doi:10.1017.S0048577201393198

Guerra, M. P., Lencastre, L., Silva, E., & Teixeira, P. M. (2017). Meaning in life in medical

    settings: A new measure correlating with psychological variables in disease. *Cogent*

    Psychology, 4(1), 1-12.

Hardy, J., & Segerstrom, S. C. (2017). Intra-individual variability and psychological flexibility:

    Affect and health in a national US sample. *Journal of Research in Personality, 69*, 13-21.

    doi:10.1016/j.jrp.2016.04.002

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (2001). *Relational Frame Theory: A post-*

    Skinnerian account of human language and cognition. New York, NY: Academic Press.

Hayes, S. C., & Hofmann, S. G. (2018). *Process-based CBT: The science and core clinical*

    competencies of Cognitive Behavioral Therapy. Oakland, CA: Context Press.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and

    Commitment Therapy: Model, processes, and outcomes. *Behaviour Research and*

    Therapy, 44, 1-25.

Hayes, S. C., Monestes, J. L., & Wilson, D. S. (2018). Evolutionary principles for applied

    psychology. In S. C. Hayes & S. G. Hofmann (Eds.), *Process-based CBT: The science*

    and core clinical competencies of Cognitive Behavioral Therapy (pp. 179-196). Oakland,

    CA: Context Press.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and Commitment Therapy: An experiential approach to behavior change*. New York: Guilford.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2011). *Acceptance and Commitment Therapy: The process and practice of mindful change* (2nd ed.). New York: Guilford.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*, 1152-1168. doi:10.1037/0022-006X.64.6.1152

Heintzelman, S. J., & King, L. A. (2014). Life is pretty meaningful. *American Psychologist, 69*(6), 561-574. doi:10.1037/a0035049

Heisel, M. J., & Flett, G. L. (2004). Purpose in life, satisfaction with life, and suicide ideation in a clinical sample. *Journal of Psychopathology and Behavioral Assessment, 26,* 127-135. doi:10.1023/B:JOBA.0000013660.22413.e0

Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1,* 91-111. doi:10.1146/annurev.clinpsy.1.102803.143833

Hicks, J. A., & Routledge, C. (Eds.). (2013). *The experience of meaning in life: Classical perspectives, emerging themes, and controversies*. New York, NY: Springer Science + Business Media. doi:10.1007/978-94-007-6527-6

Hildebrand, M., & Noteborn, M. G. C. (2015). Exploration of the (interrater) reliability and latent factor structure of the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Use Disorders Identification Test (DUDIT) in a sample of Dutch probationers. *Substance Use & Misuse, 50*(10), 1294-1306. doi: 10.3109/10826084.2014.998238

Hill, P. L., Burrow, A. L., & Bronk, K.C. (2017). Persevering with positivity and purpose:

An examination of purpose commitment and positive affect as predictors of grit.

Journal of Happiness Studies, 17(1), 257-269. doi:10.1007/s10902-014-9593-5

Hingson, R. W. (2010). Magnitude and prevention of college drinking and related problems.

Alcohol Research & Health, 33, 45-54.

Hofer, P. D. Waadt, M., Aschwanden, R., Milidou, M., Acker, J., Meyer, A. H.,…Gloster, A. T.

(2018). Self-help for stress and burnout without therapist contact: An online randomised

controlled trial. *Work and Stress, 32*(2), 189-208. doi:10.1080/02678373.2017.1402389

Howland, J., Rosenhow, D. J., Greece, J. A., Littlefield, C. A., Almeida, A., Heeren, T., Winter,

M., Bliss, C. A., Hunt, S., & Hermos, J. (2010). The effects of binge drinking on college

students' next-day academic test-taking performance and mood states. *Addiction*, *105*(4),

655-665. doi:10.1111/j.1360-0443.2009.02880.x

Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a

generalized psychological vulnerability: Comparisons with coping and emotion

regulation strategies. *Behaviour Research and Therapy, 44*, 1301-1320.

doi:10.1016/j.brat.2005.10.003

Kashdan, T. B., Goodman, F. R., Machell, K. A., Kleiman, E. M., Monfort, S. S., Ciarrochi, J., &

Nezlek, J. B. (2014). A contextual approach to experiential avoidance and social anxiety:

Evidence from an experimental interaction and daily interactions of people with social

anxiety disorder. *Emotion, 14*(4), 769-781. doi:10.1037/a0035935

Kashdan, T. B., & Kane, J. Q. (2011). Posttraumatic distress and the presence of posttraumatic

growth and meaning in life: Experiential avoidance as a moderator. *Personality and

Individual Differences, 50*, 84-89. doi:10.1016/j.paid.2010.08.028

Kashdan, T. B., & McKnight, P. (2013). Commitment to a purpose in life: An antidote to the suffering by individuals with Social Anxiety Disorder. *Emotion, 13*(6), 1150-1159. doi:10.1037/a0033278

Kashdan, T. B., Morina, N., & Priebe, S. (2009). Post-traumatic stress disorder, social anxiety disorder, and depression in survivors of the Kosovo War: Experiential avoidance as a contributor to distress and quality of life. *Journal of Anxiety Disorders, 23*, 185-196. doi:10.1016/j.janxdis.2008.06.006

Kashdan, T. B., & Steger, M. F. (2007). Curiosity and pathways to well-being and meaning in life: Traits, states, and everyday behaviors. *Motivation & Emotion, 31*(3), 159-173. doi:10.1007/s11031-007-9068-7

Kashdan, T. B., Weeks, J. W., & Savostyanova, A. A. (2011). Whether, how, and when social anxiety shapes positive experiences and events: A self-regulatory framework and treatment implications. *Clinical Psychology Review, 31*, 786-799.

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., et al. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review, 33*, 1-9. doi:10.1016/j.cpr.2013.05.005

King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology, 90*, 179-196. doi:10.1037/0022-3514.90.1.179

Kobau, R., Sniezek, J., Zack, M. M., Lucas, R. E., & Burns, A. (2010). Well-being assessment: An evaluation of well-being scales for public health and population estimates of well-being among US adults. *Applied Psychology: Health and Well-Being, 2*, 272-297. doi:10.1111/j.1758-0854.2010.01035.x

Kreft, I., & de Leeuw, J. (1998). *Introducing multilevel modeling.* Thousand Oaks, CA: Sage.

Landsman, I. S. (2002). Crisis of meaning in trauma and loss. In J. Kauffman (Ed.), *Loss of the assumptive world: A theory of traumatic loss* (pp. 13-30). New York: Brunner-Routledge.

Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counseling Psychology, 51,* 482-509.

Lent, R. W. (2013). Promoting meaning and purpose as work: A social-cognitive perspective. In B. J. Dik, Z. S. Byrne, & M. F. Steger (Eds.), *Purpose and meaning in the workplace* (pp. 151-170). Washington, DC: American Psychological Association.

Lenze, E., & Wetherell, J. L. (2009). Bringing the bedside to the bench, and then to the community: A prospectus for intervention research in late-life anxiety disorders. *Journal of Geriatric Psychiatry, 24*, 1-14. doi:10.1002/gps.2074

Levitt, J. T., Brown, T. A., Orsillo, S. M., & Barlow, D. H. (2004). The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. *Behavior Therapy, 35*(4), 747-766. doi:10.1016/S0005-7894(04)80018-2

Levin, M. E., Haeger, J. A., Ong, C. W., & Twohig, M. P. (2018). An examination of the transdiagnostic role of delay discounting in psychological flexibility and mental health problems. *The Psychological Record, 68*(2), 201-210. doi:10.1007/s40732-018-0281-4

Levin, M. E., Haeger, J. A., Pierce, B. G., & Twohig, M. P. (2017). Web-based Acceptance and Commitment Therapy for mental health problems in college students: A randomized controlled trial. *Behavior Modification, 41*(1), 141-162. doi:10.1177/0145445516659645

Levin, M. E., Pistorello, J., Seeley, J. R., & Hayes, S. C. (2013). Feasability of a prototype web-based Acceptance and Commitment Therapy prevention program for college students. *Journal of American College Health, 62*(1), 20-30. doi:10.1080/07448481.2013.843533

Lewis, N. A., Turiano, N. A., Payne, B. R., & Hill, P. L. (2017). Purpose in life and cognitive functioning in adulthood. *Aging, Neuropsychology, and Cognition, 24*(6), 662-671. doi:10.1080/13825585.2016.1251549

Linehan, M. (1987). Dialectical behavior therapy for borderline personality disorder: Theory and method. *Bulletin of the Menninger Clinic*, *51*, 261-276.

Lomas, T., Hefferon, K., & Ivtzan, I. (2014). *Applied positive psychology: Integrated positive practice*. London: Sage Publications.

Lovibond, P. G., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*, 335-343.

Lundgren, T., & Larsson, A. (2018). Values choice and clarification. In S. C. Hayes & S. G. Hofmann (Eds.), *Process-based CBT: The science and core clinical competencies of Cognitive Behavioral Therapy* (pp. 375-388). Oakland, CA: Context Press.

Lyons, G. C., Deane, F. P., & Kelly, P. J. (2010). Forgiveness and purpose in life as spiritual mechanisms of recovery from substance use disorders. *Addiction Research & Theory, 18*(5), 528-543. doi:10.3109/16066351003660619

Malin, H., Liauw, I., & Damon, W. (2017). Purpose and character development in early adolescence. *Journal of Youth and Adolescence, 46*(6), 1200-1215. doi:10.1007/s10964-017-0642-3

Marco, J. H., Perez, S., Garcia-Alandete, J., & Moliner, R. (2017). Meaning in life in people with Borderline Personality Disorder. *Clinical Psychology and Psychotherapy, 24*(1), 162-170. doi:10.1002/cpp.1991

Martela, F., Ryan, R. M., & Steger, M. F. (2018). Meaningfulness as satisfaction of autonomy, competence, relatedness, and beneficence: Comparing the four satisfactions and positive affect as predictors of meaning in life. *Journal of Happiness Studies, 19*(5), 1261-1282. doi:10.1007/s10902-017-9869-7

Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. *Journal of Happiness Studies, 11*(5), 531-545. doi:10.1080/17439760.2015.1137623

Marx, B. P., & Sloan, D. M. (2005). Peritraumatic dissociation and experiential avoidance as predictors of posttraumatic stress symptomatology. *Behaviour Research and Therapy, 43*(5), 569-583. doi:10.1016/j.brat.2004.04.004

Mascaro, N., & Rosen, D. H. (2005). Existential meaning's role in the enhancement of hope and prevention of depressive symptoms. *Journal of Personality, 73*, 985-1014. doi:10.1111/j.1467-6494.2005.00336.x

McDiarmid, L., Taku, K., & Phillips, M. (2017). Posttraumatic growth associated with perceived changes in health values and reduced alcohol use among bereaved college students. *Traumatology, 23*(4), 309-316. doi:10.1037/trm0000120

McKnight, P. E., & Kashdan, T. B. (2009). Purpose in life as a system that creates and sustains health and well-being. An integrative, testable theory. *Review of General Psychology, 13*, 242-251. doi:10.1037/a0017152

Meneses-Gaya, C. D., Zuardi, A. W., Loureiro, S. R., & Crippa, J. A. S. (2009). Alcohol Use Disorders Identification Test (AUDIT) An updated systematic review of psychometric properties. *Psychology & Neuroscience, 2*(1), 83-97. doi: 10.3922/j.psns.2009.1.12

Meyer, E. C., Morissette, S. B., Kimbrel, N. A., Kruse, M. I., & Gulliver, S. B. (2013).

    Acceptance and Action Questionnaire – II scores as a predictor of Posttraumatic Stress

    Disorder symptoms among war Veterans. *Psychological Trauma: Theory, Research,*

    Practice, and Policy, 5(6), 521-528.

Michelson, S. E., Lee, J. K., Orsillo, S. M., & Roemer, L. (2011). The role of values-consistent

    behavior in generalized anxiety disorder. *Depression and Anxiety, 28*, 358-366.

    doi: 10.1002/da.20793

Miller, M. B., Meier, E., Lombardi, N., Leavens, E. L., Grant, D. M., & Leffingwell, T. R.

    (2016). The Valued Living Questionnaire for alcohol use: Measuring value-behavior

    discrepancy in college student drinking. *Psychological Assessment, 28*(9), 1051-1060.

Moore, R. C., Depp, C. A., Wetherell, J. L., & Lenze, E. J. (2016). Ecological Momentary

    Assessment versus standard assessment for measuring mindfulness, depressed mood, and

    anxiety among older adults. *Journal of Psychiatric Research, 75*, 116-123.

    doi:10.1016/j.jpsychires.2016.01.011

Morgan, J., & Farsides, T. (2009). Measuring meaning in life. *Journal of Happiness Studies, 10*,

    197-214. doi:10.1007/s10902-007-9075-0

Mortier, P., Cuijpers, P., Kiekens, G., & Auerbach, R. P. (2018). The prevalence of suicidal

    thoughts and behaviours among college students: A meta-analysis. *Psychological*

    Medicine, 48(4), 554-565. doi:10.1017/S0033291717002215

Murrell, A. R., Jackson, R., Lester, E. G., & Hulsey, T. (2017). Psychological flexibility and

    resilience in parentally bereaved college students. *Journal of Death and Dying, 76*(3),

    207-226. doi:10.1177/0030222817693154

Nezlek, J. B., Newman, D. B., & Thrash, T. M. (2017). A daily diary study of relationships

    between feelings of gratitude and well-being. *The Journal of Positive Psychology, 12*(4),

    323-332. doi:10.1080/17439760.2015.1198923

Niles, A. N., Haltom, K. E., Mulvenna, C. M., Lieberman, M. D., & Stanton, A. L. (2014).

    Randomized controlled trial of expressive writing for psychological and physical health:

    The moderating role of emotional expressivity. *Anxiety, Stress, and Coping, 27*(1), 1-17.

    doi:10.1080/10615806.2013.802308

Nygren, B., Alex, L., Jonsén, E., Gustafson, Y., Norberg, A., & Lundman, B. (2005). Resilience,

    sense of coherence, purpose in life, and self-transcendence in relation to perceived

    physical and mental health among the oldest old. *Aging & Mental Health, 9*(4), 354-362.

    doi:10.1080/1360500114415

Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. A. (2006). Psychological

    resilience, positive emotions, and successful adaptation to stress in later life. *Journal of*

    Personality Psychology, 91, 730-749. doi:10.1037/0022-3514.91.4.730

Palfai, T. P., Ralston, T. E., & Wright, L. L. (2011). Understanding university student drinking in

    the context of life goal pursuits: The mediational role of enhancement motives.

    Personality and Individual Differences, 50, 169-174. doi:10.1016/j.paid.2010.09.020

Park, C. L. (2016). Meaning making in the context of disasters. *Journal of Clinical Psychology,*

    72, 1234-1246. doi:10.1002/jclp.22270

Park, C. L., & Ai, A. L. (2006). Meaning making and growth: New directions for research on

    survivors of trauma. *Journal of Loss and Trauma, 11*, 389-407.

Park, C. L., & Baumeister, R. F. (2017). Meaning in life and adjustment to daily stressors. *The*

    Journal of Positive Psychology, 12(4), 333-341. doi:10.1080/17439760.2016.1209542

Park, H. J., & Jeong, D. Y. (2016). Moderation effects of perfectionism and meaning in life on

    depression. *Personality and Individual Differences*, *98*, 25-29.

    doi:10.1016/j.paid.2016.03.073

Parks, A. (Ed.). (2014). *Positive psychology in higher education.* Abingdon, UK: Routledge.

Pearson, M. R., Brown, D. B., Bravo, A. J., & Witkiewitz, K. (2015). Staying in the moment and

    finding purpose: The associations of trait mindfulness, decentering, and purpose in life

    with depressive symptoms, anxiety symptoms, and alcohol-related problems.

    Mindfulness, 6(3), 645-653. doi:10.1007/s12671-014-0300-8

Perkins, H. W. (2002). Social norms and prevention of alcohol misuse in collegiate contexts.

    Journal of Studies on Alcohol and Drugs, Supplement, 14, 164-172.

    doi:10.15288/jsas.2002.s14.164

Perkins, H. W. (2002). Surveying the damage: A review of research on consequences of alcohol

    misuse in college populations. *Journal of Studies on Alcohol and Drugs, 14*, 91-100.

    doi:10.15288/jsas.2002.s14.91

Peter, C., Schulenberg, S. E., Buchanan, E. M., Prodinger, B., & Geyh, S. (2016). Rasch analysis

    of measurement instruments capturing psychological personal factors in persons with

    spinal cord injury. *Journal of Rehabilitative Medicine, 48*, 175-188.

    doi:10.2340/16501977-2028

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and

    classification*. New York: Oxford University Press and Washington, DC: American

    Psychological Association.

Petrou, P., Demerouti, E., Peeters, M. C. W., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior, 33,* 1120-1141. doi:10.1002/job.1783

Phillips, K. T., Phillips, M. M., Lalonde, T. L., & Prince, M. A. (2018). Does social context matter? An ecological momentary assessment study of marijuana use among college students. *Addictive Behaviors, 83*, 154-159. doi:10.1016/j.addbeh.2018.01.004

Pinheiro, J., Bates, D., DebRoy, S., Sarkar, D., & R Core Team. (2017). *nlme: Linear and Nonlinear Mixed Effects Models*. R package version 3.1-131, https://CRAN.R-project.org/package=nlme.

Pinquart, M. (2002). Creating and maintaining a purpose in life in old age: A meta-analysis. *Ageing International, 27*(2), 90-114.

Plumb, J. C., & Hayes, S. C. (2008). *An examination of personal values in depressed and non-depressed individuals*. Unpublished master's thesis, University of Nevada, Reno.

Purdon, C. (1999). Thought suppression and psychopathology. *Behaviour Research and Therapy, 37*, 1029-1054. doi:10.1016/S0005-7967(98)00200-9

Reker, G. T., Peacock, E. J., & Wong, P. T. (1987). Meaning and purpose in life and well-being: A life-span perspective. *Journal of Gerontology, 42,* 44-49. doi:10.1093/geronj/42.1.44

Runyan, J. D., & Steinke, E. G. (2015). Virtues, Ecological Momentary Assessment/intervention and smartphone technology. *Front Psychology, 6*, 481. doi:10.3389/fpsyg.2015.00481

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069-1081.

Saunders, J. B., Aasland, O. G., Babor, T. F., Da La Fuente, J. R., & Grant, M. (1993).
Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO
Collaborative project on early detection of persons with harmful alcohol consumption –
II. *Addiction, 88*(6), 791-804. doi: 10.1111/j.1360-0443.1993.tb02093.x

Schnetzer, L. W., Schulenberg, S. E., & Buchanan, E. M. (2012). Differential associations
among alcohol use, depression and perceived meaning in life in male and female college
students. *Journal of Substance Use, 18*(4), 311-319. doi:10.3109/14659891

Schulenberg, S. E. (2016). Disaster mental health and positive psychology – Considering the
context of natural and technological disasters: An introduction to the special issue.
Journal of Clinical Psychology, 72, 1223-1233. doi:10.1002/jclp.22409

Schulenberg, S. E., Hutzell, R. R., Nassif, C., & Rogina, J. M. (2008). Logotherapy for clinical
practice. *Psychotherapy: Theory, Research, Practice, Training, 45,* 447-463.
doi:10.1037/a0014331

Schulenberg, S. E., & Melton, A. M. (2010). A confirmatory factor-analytic evaluation of the
Purpose in Life test: Preliminary psychometric support for a replicable two-factor model.
Journal of Happiness Studies, 11(1), 95-111. doi:10.1007/s10902-008-9124-3

Schulenberg, S. E., Smith, C. V., Drescher, C. F., & Buchanan, E. M. (2016). Assessment of
meaning in adolescents receiving clinical services in Mississippi following the Deepwater
Horizon oil spill: An application of the Purpose in Life Test-Short Form (PIL-SF).
Journal of Clinical Psychology, 72, 1279-1286. doi:10.1002/jclp.22240

Shallcross, A. J., Troy, A. S., Boland, M., & Mauss, I. B. (2010). Let it be: Accepting negative
emotional experiences predicts decreased negative affect and depressive symptoms.
Behaviour Research and Therapy, 48, 921-929. doi:10.1016/j.brat.2010.05.025

Shen, J. (2015). Principles and applications of multilevel modeling in human resource management research. *Human Resource Management, 55*, 951-965. doi:10.1002/hrm.21666

Shiffman, S. (2009). Ecological Momentary Assessment (EMA) in studies of substance use. *Psychological Assessment, 21*(4), 486-497. doi:10.1037/a0017074

Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological Momentary Assessment. *Annual Review of Clinical Psychology, 4*, 1-32.

Shin, J. Y., Kim, M. S., Hwang, H., & Lee, B. Y. (2017). Effects of intrinsic motivation and informative feedback in service-learning on the development of college students' life purpose. *Journal of Moral Education, 47*(2), 159-174. doi:10.1080/03057240.2017.1419943

Shin, J. Y., Lee, Y. A., & Lee, K. H. (2005). The effects of life meaning and emotion regulation strategies on psychological well-being. *Korean Journal of Counselling and Psychotherapy, 17*, 1035-1057.

Shin, J. Y., Steger, M. F., & Henry, K. L. (2016). Self-concept clarity's role in meaning in life among American college students: A latent growth model approach. *Self and Identity, 15*(2), 206-223. doi:10.1080/15298868.2015.1111844

Skinner, B. F. (1971). *Beyond freedom and dignity*. New York: Bantam Books.

Smout, M., Davies, M., Burns, N., & Christie, A. M. (2014). Development of the Valuing Questionnaire (VQ). *Journal of Contextual Behavioral Science, 3*, 164-172. doi:10.1016/j.jcbs.2014.06.001

Spinhoven, P., Drost, J., de Rooji, M., van Hemert, A. M., & Penninx, B. W. (2014). A longitudinal study of experiential avoidance in emotional disorders. *Behavior Therapy, 45*(6), 840-850. doi:10.1016/j.beth.2014.07.001

Stefano, E. C., Hudson, D. L., Whisenhunt, B. L., Buchanan, E. M., & Latner, J. D. (2016).
Examination of body checking, body image dissatisfaction, and negative affect using
Ecological Momentary Assessment. *Eating Behaviors, 22,* 51-54.
doi:10.1016/j.eatbeh.2016.03.026

Steger, M. F., Bundick, M. J., & Yeager, D. (2014). Meaning in life. In R. J. R. Levesque (Ed.),
Encyclopedia of adolescence (pp. 1666-1677). New York: Springer Science.

Steger, M. F., Frazier, P., Oishi, S., & Kaler M. (2006). The Meaning in Life Questionnaire:
Assessing the presence of and search for meaning in life. *Journal of Counseling
Psychology, 53*, 80-93. doi:10.1037/0022-0167.53.1.80

Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels
and correlates of meaning in life from emerging adulthood to older adulthood. *The
Journal of Positive Psychology, 4*(1), 43-52. doi:10.1080/17439760802303127

Trevisan, D. A., Bass, E., Powell, K., & Eckerd, L. M. (2017). Meaning in life in college
students: Implications for college counselors. *Journal of College Counseling, 20*(1), 37-
51. doi:10.1002/jock.12057

Trull, T., & Ebner-Priemer, U. (2009). Using experience sampling methods/Ecological
Momentary Assessment (ESM/EMA) in clinical assessment and clinical research:
Introduction to the special section. *Psychological Assessment, 21*, 457-462.
doi:10.1037/a0017653

Tsai, J., Mota, N. P., Southwick, S. M., & Pietrzak, R. H. (2016). What doesn't kill you makes
you stronger: A national study of U.S. military Veterans. *Journal of Affective Disorders,
189,* 269-271. doi:10.1016/j.jad.2015.08.076

Turner, A. D., Smith, C. E., & Ong, J. C. (2017). Is purpose in life associated with less sleep
disturbance in older adults? *Sleep Science and Practice, 1*(4), 1-10.
doi: 10.1186/s41606-017-0015-6

Turton, G. M., Nauta, M. M., Wesselmann, E. D., McIntyre, M. M., & Graziano, W. G. (2018). The associations of Greek and religious organization participation with college students' social well-being and purpose. *The Journal of Psychology: Interdisciplinary and Applied, 152*(4), 179-198.

Van Tongeren, D. R., Aten, J. D., Davis, E. B., Davis, D. E., & Hook, J. N. (2018). Religion, spirituality, and meaning in the wake of disasters. In S. E. Schulenberg (Ed.), *Disaster mental health and positive psychology* (in press). Springer.

Wade, J. C., Marks, L. I., & Hetzel, R. D. (Eds.). (2015). *Positive psychology on the college campus.* Oxford, UK: Oxford University Press.

Wilson, K. G., & DuFrene, T. (2009). *Mindfulness for two: An Acceptance and Commitment Therapy approach to mindfulness in psychotherapy*. Oakland, CA: New Harbinger.

Wilson, K. G., & Murrell, A. R. (2004). *Values work in Acceptance and Commitment Therapy. Mindfulness and acceptance: Expanding the cognitive–behavioral tradition*. New York: Guilford.

Wilson, K. G., Sandoz, E. K., Flynn, M. K., Slater, R. M., & DuFrene, T. (2010). Understanding, assessing, and treating values processes in mindfulness- and acceptance-based therapies. In R. Baer (Ed.), *Assessing mindfulness and acceptance: Illuminating the processes of change* (pp. 77-106). Oakland, CA: New Harbinger.

Winger, J. G., Adams, R. B., & Mosher, C. E. (2015). Relations of meaning in life and sense of coherence to distress in cancer patients: A meta-analysis. *Psycho-Oncology, 25*(1), 2-10. doi:10.1002/pon.3798

Yalcin, I., & Malkoc, A. (2015). The relationship between meaning in life and subjective well-being: Forgiveness and hope as mediators. *Journal of Happiness Studies, 16*(4), 915-929. doi:10.1007/s10902-014-9540-5

Yang, C., Holden, S. M., & Carter, M. D. K. (2017). Emerging adults' social media self-presentation and identity development at college transition: Mindfulness as a moderator. *Journal of Applied Developmental Psychology, 52*, 212-221. doi:10.1016/j.appdev.2017.08.006

Yu, E. A., Chang, E. C., & Kim, J. H. J. (2016). Asian American culturally relevant values as predictors of meaning in life in Asian and European American college students: Evidence for cultural differences? *Asian American Journal of Psychology, 7*(3), 159-166. doi:10.1037/aap0000042

LIST OF APPENDICES

APPENDIX A: DEMOGRAPHICS QUESTIONNAIRE

1. With which gender do you identify?

    ____ Male

    ____ Female

    ____ Non-binary

    ____ Other

2. Age: ____

3. With which ethnicity/race do you identify?

    ____ Native American

    ____ Asian/Pacific Islander

    ____ Black/African American

    ____ Hispanic/Latino(a)

    ____ White/Caucasian

    ____ Other

    ____ Prefer not to answer

4. To what extent do you consider yourself a religious person?

    ____ Not religious at all

    ____ Slightly religious

    ____ Moderately religious

    ____ Very religious

5. With which religion do you identify, if any?

    ____ Buddhism

    ____ Christianity

    ____ Confucianism

    ____ Hinduism

    ____ Inter/non-denominational

    ____ Islam

    ____ Jainism

    ____ Judaism

    ____ Native American

    ____ Neo-Pagan

    ____ Scientology

    ____ Shintoism

    ____ Sikhism

    ____ Taoism

    ____ Zoroastrianism

    ____ No religion

    ____ Other

    ____ Do not wish to answer

6. To what extent do you consider yourself a spiritual person?

    ____ Not spiritual at all

    ____ Slightly spiritual

    ____ Moderately spiritual
    ____ Very spiritual

7. Identify which best represents your housing situation:
    ____ Dormitory
    ____ Greek Housing
    ____ Apartment/Condominium
    ____ House
    ____ Other

8. How is your housing paid for:
    ____ Scholarship
    ____ Student Loans
    ____ Outside Employment
    ____ Parents/Family
    ____ Other

9. Are you employed? (yes/no)
   How many hours per week? ____

   How stressful is this job for you?
    ____ Not stressful at all
    ____ Slightly stressful
    ____ Moderately stressful
    ____ Very stressful

   How important is this job to you?
    ____ Not important at all
    ____ Slightly important
    ____ Moderately important
    ____ Very important

10. What's the highest level of education your parent(s)/guardian(s) have achieved?
    ____ No high school
    ____ Some high school
    ____ Graduated high school
    ____ Some college, but did not graduate
    ____ Graduated with 2-year degree or technical school
    ____ Graduated with 4-year degree
    ____ Some graduate school but no graduate degree
    ____ Attained Master's degree (i.e., M.A., M.S., M.B.A., etc.)
    ____ Attained Professional or Doctoral degree (i.e., Ph.D., J.D., M.D., etc.)

11. What is your annual income?
    ____ $0 - $24,999
    ____ $25,000 - $49,999

_____ $50,000 - $74,999
_____ $75,000 - $99,999
_____ $100,000 - $124,999
_____ $125,000 - $149,999
_____ $150,000 - $174,999
_____ $175,000 - $199,999
_____ $200,000 or higher

12. Please enter your cell phone number, beginning with the area code: _____

13. Please enter your email: _____

APPENDIX B: DEPRESSION ANXIETY STRESS SCALE – 21

INSTRUCTIONS: Please read each statement and choose the number which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement. The rating scale is as follows:

0 = Did not apply to me at all

1 = Applied to me to some degree, or some of the time

2 = Applied to me to a considerable degree, or a good part of the time

3 = Applied to me very much, or most of the time

1. I found it hard to wind down. _____

2. I was aware of dryness in my mouth. _____

3. I couldn't seem to experience any positive feeling at all. _____

4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion). _____

5. I found it difficult to work up the initiative to do things. _____

6. I tended to over-react to situations. _____

7. I experienced trembling (e.g., in the hands). _____

8. I felt that I was using a lot of nervous energy. _____

9. I was worried about situations in which I might panic and make a fool of myself. _____

10. I felt that I had nothing to look forward to. _____

11. I found myself getting agitated. _____

12. I found it difficult to relax. _____

13. I felt down-hearted and blue. _____

14. I was intolerant of anything that kept me from getting on with what I was doing. _____

15. I felt I was close to panic. _____

16. I was unable to become enthusiastic about anything. _____

17. I felt I wasn't worth much as a person. _____

18. I felt that I was rather touchy. _____

19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat). _____

20. I felt scared without any good reason. _____

21. I felt that life was meaningless. _____

APPENDIX C: MEANING IN LIFE QUESTIONNAIRE – PRE AND POST VERSION

Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

1	2	3	4	5	6	7
Absolutely untrue	Mostly untrue	Somewhat untrue	Can't say True or False	Somewhat true	Mostly true	Absolutely true

1. _____I understand my life's meaning.

2. _____I am looking for something that makes my life feel meaningful.

3. _____I am always looking to find my life's purpose.

4. _____My life has a clear sense of purpose.

5. _____I have a good sense of what makes my life meaningful.

6. _____I have discovered a satisfying life purpose.

7. _____I am always searching for something that makes my life feel significant.

8. _____I am seeking a purpose or mission for my life.

9. _____My life has no clear purpose.

10.   _____I am searching for meaning in my life

APPENDIX D: MEANING IN LIFE QUESTIONNAIRE – DAILY VERSION

Please take a moment to think about what made your life feel important to you TODAY. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

1	2	3	4	5	6	7
Absolutely untrue	Mostly untrue	Somewhat untrue	Can't say True or False	Somewhat true	Mostly true	Absolutely true

1. _____Today, I understand my life's meaning.

2. _____Today, I was looking for something that makes my life feel meaningful.

3. _____Today, I was looking to find my life's purpose.

4. _____Today, my life had a clear sense of purpose.

5. _____Today, I had a good sense of what makes my life meaningful.

6. _____Today, I discovered a satisfying life purpose.

7. _____Today, I searched for something that makes my life feel significant.

8. _____Today, I searched for a purpose or mission for my life.

9. _____Today, my life had no clear purpose.

10. _____Today, I searched for meaning in my life

APPENDIX E: PURPOSE IN LIFE TEST – SHORT FORM – PRE AND POST VERSION

Directions: For each of the following statements, circle the number that would be most nearly true for you. Note that the numbers always extend from one extreme feeling to its opposite kind of feeling. "Neutral" implies no judgment either way; try to use this rating as little as possible.

1. In life I have:

1	2	3	4	5	6	7
No goals or aims at all						Very clear goals and aims

2. My personal existence is:

1	2	3	4	5	6	7
Utterly meaningless without purpose						Very purposeful and meaningful

3. In achieving life goals I have:

1	2	3	4	5	6	7
Made no progress whatsoever						Progressed to complete fulfillment

4. I have discovered:

1	2	3	4	5	6	7
No mission or purpose in life						Clear-cut goals and a satisfying life purpose

APPENDIX F: PURPOSE IN LIFE TEST – SHORT FORM – DAILY VERSION

Directions: For each of the following statements, circle the number that would be most nearly true for you TODAY. Note that the numbers always extend from one extreme feeling to its opposite kind of feeling. "Neutral" implies no judgment either way; try to use this rating as little as possible.

1. Today, I had:

1	2	3	4	5	6	7
No goals or aims at all						**Very clear goals and aims**

2. Today, my personal existence was:

1	2	3	4	5	6	7
Utterly meaningless without purpose						**Very purposeful and meaningful**

3. Today, in achieving life goals I have:

1	2	3	4	5	6	7
Made no progress whatsoever						**Progressed to complete fulfillment**

4. Today, I have discovered:

1	2	3	4	5	6	7

No mission or purpose in life					Clear-cut goals and a satisfying life purpose

APPENDIX G: CLAREMONT PURPOSE SCALE – PRE AND POST VERSION

1. How clear is your sense of purpose in your life?

1	2	3	4	5
Not at all clear	A little bit clear	Somewhat clear	Quite clear	Extremely clear

2. How well do you understand what gives your life meaning?

1	2	3	4	5
Do not understand at all	Understand a little bit	Understand somewhat	Understand quite well	Understand extremely well

3. How confident are you that you have discovered a satisfying purpose for your life?

1	2	3	4	5
Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident

4. How clearly do you understand what it is that makes your life feel worthwhile?

1	2	3	4	5
Not at all clearly	A little bit clearly	Somewhat clearly	Quite clearly	Extremely clearly

5. How hard are you working to make your long-term aims a reality?

1	2	3	4	5
Not at all hard	Slightly hard	Somewhat hard	Quite hard	Extremely hard

6. How much effort are you putting into making your goals a reality?

94

1	2	3	4	5
Almost no effort	A little bit of effort	Some effort	Quite a bit of effort	A tremendous amount of effort

7. How engaged are you in carrying out the plans that you set for yourself?

1	2	3	4	5
Not at all engaged	Slightly engaged	Somewhat engaged	Quite engaged	Extremely engaged

8. What portion of your daily activities move you closer to your long-term aims?

1	2	3	4	5
None of my daily activities	A few of my daily activities	Some of my daily activities	Most of my daily activities	All of my daily activities

9. How often do you hope to leave the world better than you found it?

1	2	3	4	5
Almost never	Once in awhile	Sometimes	Frequently	Almost all the time

10. How often do you find yourself hoping that you will make a meaningful contribution to the broader world?

1	2	3	4	5
Almost never	Once in awhile	Sometimes	Frequently	Almost all the time

11. How important is it for you to make the world a better place in some way?

1	2	3	4	5
Not at all important	**Slightly important**	**Somewhat important**	**Quite important**	**Extremely important**

12. How often do you hope that the work you do positively influences others?

1	2	3	4	5
Almost never	**Once in awhile**	**Sometimes**	**Frequently**	**Almost all the time**

APPENDIX H: CLAREMONT PURPOSE SCALE – DAILY VERSION

1. Today, how clear was your sense of purpose in your life?

1	2	3	4	5
Not at all clear	A little bit clear	Somewhat clear	Quite clear	Extremely clear

2. Today, how well did you understand what gives your life meaning?

1	2	3	4	5
Do not understand at all	Understand a little bit	Understand somewhat	Understand quite well	Understand extremely well

3. Today, how confident were you that you have discovered a satisfying purpose for your life?

1	2	3	4	5
Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident

4. Today, how clearly did you understand what it is that makes your life feel worthwhile?

1	2	3	4	5
Not at all clearly	A little bit clearly	Somewhat clearly	Quite clearly	Extremely clearly

5. Today, how hard were you working to make your long-term aims a reality?

1	2	3	4	5
Not at all hard	Slightly hard	Somewhat hard	Quite hard	Extremely hard

6. Today, how much effort did you put into making your goals a reality?

1	2	3	4	5
Almost no effort	A little bit of effort	Some effort	Quite a bit of effort	A tremendous amount of effort

7. Today, how engaged were you in carrying out the plans that you set for yourself?

1	2	3	4	5
Not at all engaged	Slightly engaged	Somewhat engaged	Quite engaged	Extremely engaged

8. Today, what portion of your daily activities moved you closer to your long-term aims?

1	2	3	4	5
None of my daily activities	A few of my daily activities	Some of my daily activities	Most of my daily activities	All of my daily activities

9. Today, how often did you hope to leave the world better than you found it?

1	2	3	4	5
Almost never	Once in awhile	Sometimes	Frequently	Almost all the time

10. Today, how often did you find yourself hoping that you will make a meaningful contribution to the broader world?

1	2	3	4	5
Almost never	Once in awhile	Sometimes	Frequently	Almost all the time

11. Today, how important was it for you to make the world a better place in some way?

1	2	3	4	5
Not at all important	Slightly important	Somewhat important	Quite important	Extremely important

12. Today, how often did you hope that the work you do positively influences others?

1	2	3	4	5
Almost never	Once in awhile	Sometimes	Frequently	Almost all the time

APPENDIX I: VALUING QUESTIONNAIRE – PRE AND POST VERSION

Please read each statement carefully and indicate which best describes how much the statement was true for you DURING THE PAST WEEK, INCLUDING TODAY.

0	1	2	3	4	5	6
Not at all true						Completely true

1. I spent a lot of time thinking about the past or future, rather than being engaged in activities that mattered to me.   0 1 2 3 4 5 6

2. I was basically on "auto-pilot" most of the time.   0 1 2 3 4 5 6

3. I worked toward my goals even if I didn't feel motivated to.   0 1 2 3 4 5 6

4. I was proud about how I lived my life.   0 1 2 3 4 5 6

5. I made progress in the areas of my life I care most about.   0 1 2 3 4 5 6

6. Difficult thoughts, feelings or memories got in the way of what I really wanted to do.   0 1 2 3 4 5 6

7. I continued to get better at being the kind of person I want to be.   0 1 2 3 4 5 6

8. When things didn't go according to plan, I gave up easily.   0 1 2 3 4 5 6

9. I felt like I had a purpose in life.   0 1 2 3 4 5 6

10. It seemed like I was just "going through the motions" rather than focusing on what was important to me.   0 1 2 3 4 5 6

APPENDIX J: VALUING QUESTIONNAIRE – DAILY VERSION

Please read each statement carefully and indicate which best describes how much the statement was true for you TODAY.

0	1	2	3	4	5	6
Not at all true						**Completely true**

1. Today, I spent a lot of time thinking about the past or future, rather than being engaged in activities that mattered to me. 　　0　1　2　3　4　5　6

2. Today, I was basically on "auto-pilot" most of the time. 　　0　1　2　3　4　5　6

3. Today, I worked toward my goals even if I didn't feel motivated to. 　　0　1　2　3　4　5　6

4. Today, I was proud about how I lived my life. 　　0　1　2　3　4　5　6

5. Today, I made progress in the areas of my life I care most about. 　　0　1　2　3　4　5　6

6. Today, difficult thoughts, feelings or memories got in the way of what I really wanted to do. 　　0　1　2　3　4　5　6

7. Today, I continued to get better at being the kind of person I want to be. 　　0　1　2　3　4　5　6

8. Today, when things didn't go according to plan, I gave up easily. 　　0　1　2　3　4　5　6

9. Today, I felt like I had a purpose in life. 　　0　1　2　3　4　5　6

10. Today, it seemed like I was just "going through the motions" rather than focusing on what was important to me. 　　0　1　2　3　4　5　6

APPENDIX K: ACCEPTANCE AND ACTION QUESTIONNAIRE II – PRE AND POST

VERSION

Below you will find a list of statements. Please indicate how true each statement is for you using the scale below to make your choice.

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

1. My painful experiences and memories make it difficult for me to live a life that I would value.

2. I'm afraid of my feelings.

3. I worry about not being able to control my worries and feelings.

4. My painful memories prevent me from having a fulfilling life.

5. Emotions cause problems in my life.

6. It seems like most people are handling their lives better than I am.

7. Worries get in the way of my success.

APPENDIX L: ACCEPTANCE AND ACTION QUESTIONNAIRE II – DAILY VERSION

Below you will find a list of statements. Please indicate how true each statement was for you TODAY using the scale below to make your choice.

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

1. Today, my painful experiences and memories made it difficult for me to live a life that I would value.

2. Today, I was afraid of my feelings.

3. Today, I worried about not being able to control my worries and feelings.

4. Today, my painful memories prevented me from having a fulfilling life.

5. Today, emotions caused problems in my life.

6. Today, It seemed like most people were handling their lives better than I am.

7. Today, worries got in the way of my success.

APPENDIX M: ALCOHOL USE DISORDERS IDENTIFICATION TEST

Select the appropriate answer.

1. How often do you have a drink containing alcohol?
   (0) Never (Skip to Questions 9-10)
   (1) Monthly or less
   (2) 2 to 4 times a month
   (3) 2 to 3 times a week
   (4) 4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   (0) 1 or 2
   (1) 3 or 4
   (2) 5 or 6
   (3) 7, 8, or 9
   (4) 10 or more

3. How often do you have six or more drinks on one occasion?
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

6. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly

(4) Daily or almost daily

7. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?
    (0) Never
    (1) Less than monthly
    (2) Monthly
    (3) Weekly
    (4) Daily or almost daily

8. How often during the last year have you had a feeling of guilt or remorse after drinking?
    (0) Never
    (1) Less than monthly
    (2) Monthly
    (3) Weekly
    (4) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?
    (0) No
    (2) Yes, but not in the last year
    (4) Yes, during the last year

10. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?
    (0) No
    (2) Yes, but not in the last year
    (4) Yes, during the last year

LIST OF TABLES

Table 1.

Correlation Matrix of Depression, Anxiety, Stress Scale – 21, Meaning in Life Questionnaire – Presence, Purpose in Life Test – Short Form, Valuing Questionnaire – Progress, Valuing Questionnaire – Obstruction, Acceptance and Action Questionnaire – II, and the Alcohol Use Disorders Identification Test (*N* = 73)

Measures	1	2	3	4	5	6	7	8
1 Depression	-							
2 Anxiety	.75**	-						
3 Stress	.73**	.66**	-					
4 Meaning	-.36**	-.34**	-.27*	-				
5 Purpose in Life	-.14	-.02	-.10	.60**	-			
6 Values Progress	-.25*	-.20	-.17	.71**	.62**	-		
7 Values Obstruction	.34**	.25*	.27*	-.13	.00	-.19	-	
8 Avoidance	.48**	.31**	.38**	-.32**	-.09	-.23*	.54**	-
9 Alcohol Use	.01	.03	-.16	.04	.00	-.03	.13	-.06

Note: * indicates $p \leq .05$; * indicates $p \leq .01$. Correlations presented here are from baseline variables, not daily, adapted measures

Table 2.

Correlation Matrix of the Following Adapted Measures: Meaning in Life Questionnaire –
Presence, Purpose in Life Test – Short Form, Valuing Questionnaire – Progress, Valuing
Questionnaire – Obstruction, Acceptance and Action Questionnaire – II

Measures	1	2	3	4	5
1 Presence of Meaning	-				
2 Purpose in Life	.74	-			
3 Values Progress	.65	.73	-		
4 Values Obstruction	-.32	-.27	-.20	-	
5 Avoidance	-.30	-.33	-.21	.67	-

Note: all ps < .001. Correlations presented here are the average daily measures across all participants.

Table 3.

MLM Analyses – Meaning, Purpose, and Experiential Avoidance Predicting Values Progression

	AIC	BIC	logLik	ΔlogLik	*p*
Fixed Intercept	5367.42	5376.42	-2681.71		
Random Intercept	4910.84	4924.84	-2452.42	229.29	<.001
M, P, & EA	4645.72	4673.71	-2316.86	135.56	<.001

Note. Models were compared sequentially to the one below it. *Note:* M = Meaning, P = Purpose, & EA = Experiential Avoidance.

Table 4.

MLM Analyses – Meaning, Purpose, and Experiential Avoidance Predicting Values Obstruction

	AIC	BIC	logLik	ΔlogLik	*p*
Fixed Intercept	5354.23	5363.56	-2675.12		
Random Intercept	4889.31	4903.30	-2441.65	233.47	<.001
M, P, & EA	4640.84	4668.82	-2314.42	127.23	<.001

Note. Models were compared sequentially to the one below it. *Note:* M = Meaning, P = Purpose, & EA = Experiential Avoidance.

Table 5.

MLM Analyses – Claremont Purpose Scale Constructs Predicting Values Progression

	AIC	BIC	logLik	ΔlogLik	*p*
Fixed Intercept	5391.54	5400.88	-2693.77		
Random Intercept	4932.73	4946.74	-2463.36	230.41	<.001
M, GO, & BTS	4605.60	4633.61	-2296.80	166.56	<.001

Note. Models were compared sequentially to the one below it. *Note:* M = Meaningfulness, GO = Goal Orientation, & BTS = Beyond the Self.

Table 6.

MLM Analyses – Claremont Purpose Scale Constructs Predicting Values Obstruction

	AIC	BIC	logLik	ΔlogLik	*p*
Fixed Intercept	5383.31	5392.65	-2689.66		
Random Intercept	4910.50	4924.51	-2452.25	237.41	<.001
M, GO, & BTS	4890.40	4918.42	-2439.20	13.05	<.001

Note. Models were compared sequentially to the one below it. *Note:* M = Meaningfulness, GO = Goal Orientation, & BTS = Beyond the Self.

Table 7.

Correlation Matrix of Claremont Purpose Scale – Meaningfulness, Claremont Purpose Scale – Goal Orientation, Claremont Purpose Scale – Beyond the Self, Purpose in Life Test – Short Form, and Meaning in Life Questionnaire – Presence (N = 73)

Measures	1	2	3	4	5
1 Meaningfulness	-				
2 Goal Orientation	.57**	-			
3 Beyond the Self	.39**	.55**	-		
4 Purpose in Life	.72**	.56**	.47**	-	
5 Presence of Meaning	.67**	.48**	.40**	.60**	-

Note: * indicates $p \leq .05$; ** indicates $p \leq .01$

VITA

Jeffrey Michael Pavlacic
(Revised March 2019)

jpavlaci@go.olemiss.edu

Education

Doctor of Philosophy, Clinical Psychology (APA-Accredited)   Anticipated Degree Date: Aug 2023
The University of Mississippi; Oxford, MS
Dissertation: TBD
Chair: Stefan Schulenberg, Ph.D.

Graduate Interdisciplinary Program in Applied Statistics   Awarded in conjunction with Ph.D.
The University of Mississippi; Oxford, MS

Master of Arts, Clinical Psychology (APA-Accredited)   Date of Graduation: May 2019
The University of Mississippi; Oxford, MS
Thesis: *Meaning, Purpose, and Experiential Avoidance as Predictors of Valued Behavior: An Application of Ecological Momentary Assessment*
Chair: Stefan Schulenberg, Ph.D.
Defended: March, 2019

Bachelor of Science in Psychology, Summa Cum Laude   Date of Graduation: May 2017
Missouri State University (MSU); Springfield, MO
Honors Thesis: *The Effects of Expressive Writing on Risky Health Behaviors, Avoidance, and Valued Living.*
Chair: Ann Rost, Ph.D.

Peer-Reviewed Publications

Pavlacic, J. M., Buchanan, E. M., Maxwell, N. P., Hopke, T., & Schulenberg, S. E. (in press). A meta-analysis of expressive writing on posttraumatic stress, posttraumatic growth, and quality of life. *Review of General Psychology.*

Buchanan, E. M., Foreman, R. E., Johnson, B., **Pavlacic, J. M.,** Swadley, R., & Schulenberg, S. E. (2018). Does the delivery matter? Examining randomization at the item level. *Behaviormetrika, 45*(2), 295-316.

Pavlacic, J. M., Harvey, S., Culp, M., Cathey, C. L., & Buchanan, E. M. (2018). A historical perspective of undergraduate learning assistants at Missouri State University. *Modern Psychological Studies, 23*(2), 1-18.

Liberto, A. K., **Pavlacic, J. M.,** & Schulenberg, S. E. (2018). The Great Atlanta Fire (1917). In D. H. McElreath, D. A. Doss, R. Nations, J. M. Van Slyke, C. J. Jensen, B. R. Russo, R. C. Tesiero, S. E. Schulenberg, L. S. McElreath, A. Wellman, & A. M. Lindsley, *Disasters that shaped emergency management: Case studies for the homeland security/emergency management professional* (pp. 135-140). Dubuque, IA: Kendall Hunt.

Pavlacic, J. M., Gawlik, E. A., & Schulenberg, S. E. (2018). The 1995 Chicago Heat Wave. In D. H. McElreath, D. A. Doss, R. Nations, J. M. Van Slyke, C. J. Jensen, B. R. Russo, R. C. Tesiero, S. E. Schulenberg, L. S. McElreath, A. Wellman, & A. M. Lindsley, *Disasters that shaped emergency management: Case studies for the homeland security/emergency management professional* (pp. 53-59). Dubuque, IA: Kendall Hunt.

Weber, M. C., **Pavlacic, J. M.,** Gawlik, E. A., Schulenberg, S. E., & Buchanan, E. M. (revise and resubmit at *Traumatology*). Modeling resilience, meaning in life, posttraumatic growth, and disaster preparedness with two samples of tornado survivors.

Boullion, G. Q., **Pavlacic, J. M.,** Schulenberg, S. E., Steger, M. F., & Buchanan, E. M. (under review at *Journal of Happiness Studies*). Meaning, social support, and resilience predict posttraumatic growth among survivors of the August 2016 Louisiana flooding.

Finkelstein-Fox, L., **Pavlacic, J. M.,** Schulenberg, S. E., Buchanan, E. M., & Park, C. L. (under review at *Journal of Positive Psychology*). Valued living in daily experiences: Relations with meaning, mindfulness, psychological flexibility, and stressors.

Pavlacic, J. M., Kellum, K. K., & Schulenberg, S. E. (in preparation). Restorative justice and behavior analysis: Incorporating restorative justice practices within an organizational context.

Pavlacic, J. M., Dixon, L. J., & Schulenberg, S. E. (in preparation). Examining the temporal associations between nightly alcohol use and next day valued living: A daily diary study.

Pavlacic, J. M. (in preparation). A systematic review of trajectories following combat-related trauma.

Buchanan, E. M., **Pavlacic, J. M.,** Herr, D., Johnson, B. J., Myers, H., & Swadley, R. (in preparation). The effect of item randomization on scale psychometrics.

Presentations and Symposia

Pavlacic, J. M., Dixon, L. J., & Schulenberg, S. E. (November, 2019). Examining the temporal associations between nightly alcohol use and following-day valued living: A daily diary study. Poster submitted to the 53rd Annual Convention of the Association for Behavioral and Cognitive Therapies, Atlanta, GA.

Finkelstein-Fox, L., **Pavlacic, J. M.,** Schulenberg, S. E., Buchanan, E. M., & Park, C. L. (2019, May). Daily Stressors and Values Adherence: Protective Effects of Coping and Emotion Regulation Resources. In C. L. Park, Chair, *Integrating Perspectives on Stress Processes: The Overlapping*

and Unique Roles of Coping and Emotion Regulation. Symposium accepted at the 31st Annual Convention of the Association for Psychological Science, Washington, D. C.

Pavlacic, J. M., Kellum, K. K., & Schulenberg, S. E. (2019, May). Restorative justice within the context of professional organizations; Is RJ the way? In E. K. Sandoz, Discussant, *Behavior Analysis and Restorative Justice: Birds of a Feather?* Symposium accepted at the 45th Annual Convention of the Association for Applied Behavior Analysis International, Chicago, Illinois.

Gawlik, E. A., **Pavlacic, J. M.,** & Schulenberg, S. E. (2018, April). Responding to Hurricane Harvey: A preliminary investigation into correlates of Posttraumatic Stress Disorder symptoms. Poster presented at the 5th annual University of Mississippi Psychology Research Day, Oxford, MS.

Pavlacic, J. M., Schulenberg, S. E., Buchanan, E. M., & Boullion, G. Q. (2018, April). Predicting mindfulness behaviors from values progression using ecological momentary assessment. Data Blitz talk presented at the 5th annual University of Mississippi Psychology Research Day, Oxford, MS.

Weber, M. C., Gawlik, E. A., March, K. E., **Pavlacic, J. M.,** Schulenberg, S. E., & Buchanan, E. M. (2018, April). Gender differences in resilience, meaning, and purpose using factor-analytic techniques and scale scores. Perspectives talk presented at ResilienceCon, Nashville, Tennessee.

Pavlacic, J. M., Buchanan, E. M., & Schulenberg, S. E. (2018, May). A meta-analysis of expressive writing on posttraumatic stress. Poster presented at the 44th Annual Convention of the Association for Applied Behavioral Analysis International, San Diego, California.

Pavlacic, J. M., Buchanan, E. M., & Rost, A. (2017, April). A meta-analysis of expressive writing on quality of life and posttraumatic growth. Poster presented to the Undergraduate Student Research Poster Competition at the Annual Convention of the Southwestern Psychological Association, San Antonio, TX.

Harvey, S., **Pavlacic, J. M.,** & Sparks, J. (2017, April). Impact of relationship priming on self-esteem and self-concept. Poster presented at the Undergraduate Student Research Poster Competition at the Annual Convention of the Southwestern Psychological Association, San Antonio, TX. Poster presented at the Annual Great Plains Students' Psychology Convention and awarded first place for the undergraduate poster session, Social and Developmental category.

Weber, M. C., **Pavlacic, J. M.,** Schulenberg, S. E., & Buchanan, E. M. (2017, July). Meaning, self-efficacy, and posttraumatic growth in university students: A study of tornado impact and survivor resilience. Poster presented at the 5th World Congress on Positive Psychology, The International Positive Psychology Association, Montreal, Québec, Canada.

Weber, M. C., **Pavlacic, J. M.,** Schulenberg, S. E., & Buchanan, E. M. (2017, July). Meaning, self-efficacy, and posttraumatic growth in university faculty and staff: A study of tornado impact and survivor resilience. Poster presented at the 5th World Congress on Positive Psychology, The International Positive Psychology Association, Montreal, Québec, Canada.

Pavlacic, J. M., Fallone, M. D., & Rost, A. (2016, May). Effects of expressive writing on psychological distress in a substance abuse population. Poster presented at the Annual Convention of the Missouri Psychological Association, Columbia MO.

Chen, S. J., Battles, J., **Pavlacic, J. M.,** Stephens-Cantu, H.A., & Hudson, D. L. (2016, May). The

relationship between body dissatisfaction and intent to engage in dieting behaviors. Poster presented at the Annual Convention of the Missouri Psychological Association, Columbia, MO.

Pavlacic, J. M., Battles, J. A., Rost, A., & Fallone, M. D. (2016, April). Effects of expressive writing on risky health behaviors, experiential avoidance, and valued living. Poster presented at the Annual Convention of the Southwestern Psychological Association, Dallas, TX.

Chen, S. C., Stephens-Cantu, H. A., **Pavlacic, J. M.,** Hudson, D. L., & Whisenhunt, B. L. (2016, April). Investigation into the relationship among mood, body dissatisfaction, and weight concern. Poster presented at the Annual Convention of the Southwestern Psychological Association, Dallas, TX.

Pavlacic J. M., Culp, M., & Harvey, S. (2015, November). Using undergraduate learning assistants to personalize the large class size. Experiential presentation presented at the Missouri Undergraduate Psychology Conference, St. Louis, MO. Awarded first place for Applied Learning Paper, Session 1 category.

Bennett, B. L., Smith, J. M., Barnes, J.A., **Pavlacic, J. M.,** Whisenhunt, B. L., & Hudson, D. L. (2015, November). Thin-ideal internalization as a mediator on the relationship between body-checking and body dissatisfaction. Poster presented at the 49th Annual Convention of the Association for Behavioral and Cognitive Therapies, Chicago, IL.

Barnes, J. A., Chen, S., Logan, K., **Pavlacic, J. M.,** Hudson, D. L., & Whisenhunt, B. L. (2015, April). Body shame predicting body image avoidance when controlling for body dissatisfaction. Poster presented at the Annual Convention of the Southwestern Psychological Association, Wichita, KS.

Bennett, B. L., Chen, S., Logan, K., **Pavlacic, J. M.,** Goldstein, C. M., Whisenhunt, B., & Hudson, D. L. (2015, April). Examination of risky health behaviors as predictors of acceptance of cosmetic surgery. Poster presented at the Annual Convention of the Southwestern Psychological Association, Wichita, KS.

Research Positions

Clinical Disaster Research Center (UM – CDRC) | Graduate Research Assistant
Department of Psychology, University of Mississippi   **August, 2017 – Present**
Supervisor: Dr. Stefan Schulenberg
- Conduct projects and publish papers/book chapters related to the traumatic effects of disasters and trauma more generally.
- Supervise undergraduate research assistants as a graduate research assistant.

Deciphering Outrageous Observations and Modeling Lab | Research Assistant
Department of Psychology, Missouri State University   **April, 2016 – Present**
Supervisor: Dr. Erin Buchanan
- Analyze data using Item Response Theory and factor-analytic techniques.
- Conduct a meta-analysis examining the efficacy of expressive writing interventions on quality of life, posttraumatic growth, and traumatic stress. Publish manuscript.
- Publish a paper related to effects of item randomization on scale psychometrics.

ACT and Health Psychology Lab | Undergraduate Research Assistant

Department of Psychology, Missouri State University   **January, 2015 – May, 2017**
Supervisor: Dr. Ann Rost
- Assisted with Acceptance and Commitment Therapy (ACT) projects in combination with meditation techniques and yoga.
- Distributed participant packets at Crossfit sites, monitored completion of questionnaires.
- Conducted undergraduate Honors thesis with underlying ACT theory in conjunction with this lab.

Eating Disorder and Body Image Lab | Undergraduate Research Assistant
Department of Psychology, Missouri State University   **September, 2014 – May, 2017**
Supervisors: Dr. Danae Hudson and Dr. Brooke Whisenhunt
- Assisted with body dissatisfaction, thin-ideal internalization, body image avoidance, and weight concern projects.
- Presented studies including thin-ideal internalization as a mediator, body shame predicting body image avoidance, risky health behaviors and their relationship with the acceptance of cosmetic surgery, and body dissatisfaction in bodybuilders.
- Organized and analyzed data, conducted literature reviews, and prepared poster presentations.

LOGOS – A Journal of Undergraduate Research | Associate Editor/Peer Reviewer
Honors College, Missouri State University   **January, 2016 – May, 2017**
Supervisor: Hana Landgrebe, M.A
- Supervised peer reviewers and made revision/publication recommendations to the chief editor.
- Reviewed submissions and made revision/publication recommendations to the associate editors.

Departmental Distinction of Honors in Psychology | Undergraduate Honors Thesis
Department of Psychology, Missouri State University   **September, 2015 – May, 2016**
Supervisors: Dr. Melissa Fallone and Dr. Ann Rost
- Investigated expressive writing with underlying foundations in ACT and effects on risky health behaviors, experiential avoidance, valued living, and substance use.
- Examined effects of the same expressive writing intervention on psychological distress within a substance use population at Cox Hospital Center for Addictions as a revised study.
- Collected/analyzed data, wrote manuscript, submitted for publication, and completed twelve credit hours of additional coursework for research design and preparation. Submitted project as Honors Undergraduate Thesis.

Psychology Undergraduate Research Assistant
Department of Psychology, Missouri State University   **January, 2015 – July, 2016**
Supervisor: Dr. Christie Cathey
- Prepared an oral presentation on shrinking the large introductory class with the use of Undergraduate Learning Assistants.
- Published manuscript on shrinking the large introductory class using undergraduate learning assistants.

Clinical Positions/Practica

Mental Health Therapist   **July, 2018 – Present**
The Baddour Center, Senatobia, Mississippi
Clinical Supervisor: Josh Fulwiler, Ph.D.

- Provide individual behavior therapy for adults with intellectual disabilities and various forms of cognitive impairment, with a caseload of 5-9 clients at a time.
- Lead social skills group for lower-functioning residents.
- Conduct dementia screener and Tardive Dyskinesia assessments.

Graduate Therapist   **May, 2018 – Present**
Psychological Services Center, University of Mississippi
Clinical Supervisors: Stefan Schulenberg, Ph.D., Scott Gustafson, Ph.D.
- Provide evidence-based individual psychotherapy (e.g. Cognitive Behavioral Therapy, Dialectical Behavior Therapy) to an adult community sample with a wide range of diagnoses.
- Conduct structured clinical interviews (e.g. Mini International Neuropsychiatric Interview) and conceptualize cases prior to commencing therapy.

Undergraduate Practicum
Spring, 2016
Cox Hospital Center for Addictions, Springfield, MO
Clinical Supervisor: Tressa Moyle, LCSW
- Participated in intake/assessment activities, treatment planning, case management, community support work, psychoeducation, recreation therapy, social and life skills training, individual/group/family therapy, and discharge planning.
- Worked on a multidisciplinary team including addictions counselors, social workers, community support workers, case managers, nurses, psychologists, psychiatrists, and various support staff.

Mentored Ad-Hoc Reviewing

International Journal of Disaster Risk Reduction
PLOS ONE
Psychological Trauma: Theory, Research, Practice, and Policy
Psychological Reports
Professional Psychology: Research and Practice
Applied Research in Quality of Life
American Journal of Orthopsychiatry
Journal of Clinical Psychology
Professional Psychology: Research and Practice

Teaching Experience

Teaching Assistant   **January, 2017 – May, 2017**
Advanced Psychological Statistics (PSY 527), Missouri State University
Supervisor: Dr. Erin Buchanan
- Served as a resource for students learning advanced statistical techniques in R, such as factor analysis, multilevel modeling, analysis of covariance, etc.

Undergraduate Learning Assistant (ULA)   **September, 2015 – May, 2016**
Introductory Psychology (PSY 121), Missouri State University
Supervisors: Dr. Sarah McNew and Dr. Ann Rost
- Attended all lectures and assisted with passing out materials and recorded attendance.
- Assisted with the proctoring of exams and responded to student emails.

- Held four 50-minute study sessions with students in preparation for each of the four exams.

Leadership Experience

President   **December, 2016 – December, 2017**
Tau Kappa Epsilon Fraternity, Missouri State University
- Served as the Beta Omega chapter's chief officer and mediated between campus and chapter members.
- Supervised other executive board members.
- Received training in conflict resolution and management through a Restorative Justice perspective.

Parade Coordinator   **May, 2015 – October, 2015**
Homecoming Committee, Missouri State University
- Planned MSU's annual homecoming parade.
- Organized different types of entries and planned the judging process.

Vice President   **December, 2015 – December, 2016**
Tau Kappa Epsilon Fraternity, Missouri State University
- Coordinated committees for programming and philanthropic activities.
- Assigned chapter members to chair positions and organized service, philanthropy, and fundraising events.

Work Experience

Student Orientation Leader
Summer, 2016
New Student & Family Programs, Missouri State University
Supervisors: Joe Morris and Priscilla Childress
- Served as a student orientation, advisement, and registration leader.
- Helped acclimate students/families to Missouri State University, registered students for first-semester courses.

University Ambassador   **Spring, 2015 – Fall, 2016**
Office of Admissions, Missouri State University
Supervisor: Sean Kliethermes
- Promoted Missouri State University to prospective students with extensive tours and assisted with large-scale events for students and their family members.

Campus Visit Coordinator
Summer, 2015
Office of Admissions, Missouri State University
Supervisor: Sean Kliethermes
- Organized prospective students' campus visits and scheduled academic department appointments.
- Assisted with student check-in and other organizational duties.

Sales Associate   **March, 2014 – December, 2014**
Missouri State Bookstore; Springfield, MO

Supervisor: Ray Presnell
- Informed customers about Apple products in a detailed manner.
- Completed Apple Certification Training as an Apple Product Professional.

Head Lifeguard/Lifeguard   **May, 2013 – Summer, 2014**
Midwest Pool Management, St. Louis, MO
- Performed first aid and completed necessary reports for injured patrons as needed.
- Ensured patron safety.
- Supervised lifeguards as a head lifeguard.

Grill Master   **May, 2012 – August, 2012**
Culvers Restaurant, St. Louis, MO

Relevant Training

Data Analysis
Proficient in R, JASP, and SPSS – Basic statistics, ANOVA/MANOVA/ANCOVA/MANCOVA/Regression
EFA/CFA/Structural Equation Modeling/ MTTM/Multilevel Modeling/Data Screening

Educational Training at *Missouri State University; Springfield, MO*
FERPA Training	**Spring, 2016**
HIPPA Training	**Spring, 2016**
SHARP (Sexual Harassment/Assault Response & Prevention Training)	**Spring, 2016**
CITI Training	**Fall, 2014**
Title IX Training	**Spring, 2016**
Preventing Discrimination and Harassment	**Spring, 2016**
HAVEN (Helping Advocates for Violence Ending Now)	**Spring, 2016**
Green Dot (sexual assault prevention) Training	**Spring, 2016**

Professional Memberships & Awards

Graduate Research Assistantship	**Fall, 2017 – Present**
Applied Behavior Analysis International	**Fall, 2017 – Present**
Psi Chi	**Spring, 2015 – Present**
Southwestern Psychological Association	**Fall, 2015 – Fall, 2017**
Great Plains Conference – 1st place poster presentation	**Spring, 2017**
Maxwell Research Award at Missouri State University	**Spring, 2015, Spring, 2016**
Missouri Undergraduate Psychology Conference – 1st place oral presentation	**Spring, 2015**

References

References available upon request.