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MEANING IN LIFE, DEPRESSION, AND ALCOHOL USE IN A COLLEGE SAMPLE

A Thesis Presented for the  
Master of Arts Degree  
in the Department of Psychology  
The University of Mississippi

Lindsay W. Schnetzer

May 2011

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## ABSTRACT

The meaning construct has been researched over the last several decades, yielding important empirical advancements in our understanding of its impact on psychological well-being. Common denominators among various definitions of meaning and life purpose are (1) an emphasis on the significance of life (2) an awareness of coherence, and (3) the fulfillment of unique purpose. Research suggests that meaning and depression are related yet distinct variables, that depression and alcohol abuse are comorbid, and that meaning and alcohol use are significantly associated. Because there is minimal research examining relations among all three variables, and because there have been inconsistent findings with regard to the impact of gender on these associations, new research is needed. The current study examined patterns of association among self-reports of perceived meaning in life, depression, and alcohol use in a sample of 268 college students (mean age of 19.1 years, 24% male, 76% White). Results of the analyses revealed that males reported significantly higher alcohol use and significantly higher problematic alcohol consumption; females and males reported similar levels of depressive symptoms; and females reported significantly higher perceived meaning. In the overall sample, perceived meaning was significantly and negatively correlated with both alcohol use ( $r = -.17$ ) and depression ( $r = -.39$ ); alcohol use was not significantly negatively correlated with depression ( $r = .09$ ). When the sample was split by gender, the strength of association among variables differed in some cases. Models to determine relative contributions of gender, depression, and meaning to variance in alcohol use were tested. Hierarchical linear and logistic regression analyses suggested that depression did not account for a significant portion of the variance in

alcohol use or problematic alcohol consumption. Adding perceived meaning to the models resulted in a marginally significant improvement, however small effect sizes suggest that such an improvement is unlikely to be clinically significant. Future research should utilize more diverse samples reporting a broader range of symptom severity and employ more rigorous experimental design. In this fashion, research may inform intervention efforts aimed at reducing problematic alcohol use for those groups in which an effect is statistically and clinically supported.

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## INTRODUCTION

### *The Meaning Construct*

Although meaning in life has been a topic of interest for centuries, it is a relatively new construct in the field of western psychology. Viktor Frankl was one of the first to emphasize the importance of meaning's relation to well-being in his seminal works *The Doctor and the Soul* (1955/1986) and *Man's Search for Meaning* (1959/1985). Since that time, the meaning construct has been frequently researched, yielding important empirical advancements in our understanding of its impact on well-being. Various definitions of meaning have been utilized, including the following: "the ontological significance of life from the perspective of the experiencing individual" (Crumbaugh & Maholick, 1964, p. 201), and "the extent to which people comprehend, make sense of, or see significance in their lives, accompanied by the degree to which they perceive themselves to have a purpose, mission, or over-arching aim in life" (Steger, Oishi, & Kashdan, 2009, p. 43).

Common denominators among definitions of meaning and life purpose are (1) an emphasis on the "worthwhileness of life" (Frankl, 1959/1985, p. 125), (2) an awareness of coherence or order, and (3) the fulfillment of unique purpose. These common denominators generally represent cognitive and motivational aspects of experiencing life. That is, experiencing life as meaningful requires making sense of life and perceiving it as significant (cognitive) as well as actually living with purpose in ways consistent with personal values (motivational). Several modern theorists (e.g., Steger, in press; Wong, 1998) have highlighted the cognitive and

motivational duality. The cognitive aspect typically includes such things as recognition of life's significance and coherence, and creating a framework through which to interpret life events. The motivational aspect typically includes living with purpose and involves a motivating force that aligns one's behavior with overarching life goals.

Although Frankl did not emphasize the terms "cognitive" and "motivational" specifically, such a conceptualization is consistent with his work. He accentuated the importance of clarifying personal values and making decisions consistently with these values. Further, he (as well as more modern theorists, such as Roy Baumeister) emphasized using values as an organizing framework for making decisions and actualizing long-term goals.

Meaning may be discovered in three ways (Frankl, 1959/1985): through experiences, creations, and attitudes. Each encompasses both cognitive and motivational aspects. Experiences may involve encountering beauty, truth, or love. These experiences foster an increased awareness and appreciation for life and also involve an active component of engaging in pursuits that matter (loving someone, for example). Creations may include products of work or personal projects. They require an understanding of their useful value and a productive contribution to the greater world. Attitudes refer to the dignified manner in which one faces unavoidable suffering. Attitudinal values are those that are actualized when we exercise our freedom to choose how we make sense of and respond to life circumstances. That is, even in the face of unavoidable suffering (circumstances over which we have no apparent choice), we have the capacity to choose how we integrate the experience within our understanding of the world, and also we may choose how to respond.

Another noteworthy point pertaining to the conceptualization of meaning and purpose is the extent to which the two concepts are distinguished. While most theorists and researchers use the terms “meaning” and “purpose” interchangeably, some suggest that the concept of “purpose” should be subsumed underneath the more general concept of meaning (Baumeister, 1991; Damon, Menon, & Bronk, 2003; Reker & Wong, 1988). That is, while “meaning” refers to a general quality of significance or worthwhileness, “purpose” refers to an intention or act directed at some specific goal. Since most research has neglected to operationalize the meaning construct in such a specific manner, the literature review that follows uses the terms interchangeably. However, in the current study, “meaning” refers to the general concept of comprehending and appreciating the significance of life, whereas “purpose” refers to a goal-oriented motivation, subsumed within the meaning construct.

While meaning has been defined and conceptualized in various ways over the years, one fact remains clear. Discovering meaning (purpose in life) has been related to many positive outcomes, regardless of who is conducting the research, how the terms are defined, or variations in the methods employed to study the construct. Meaning has been correlated with well-being (Reker, Peacock, & Wong, 1987; Scannell, Allen, & Burton, 2002; Steger, Kashdan, & Oishi, 2008; Zika & Chamberlain, 1992), life satisfaction (Chamberlain & Zika, 1988; Schulenberg, Schnetzer, & Buchanan, 2010), self-actualization (Ebersole & Humphreys, 1991), self-acceptance (Garfield, 1973; Ryff, 1989), prosocial behaviors (Shek, Ma, & Cheung, 1994), increased ability to cope with stress including bereavement recovery (Ulmer, Range, & Smith, 1991), and recovery from physical illness or injury (Hamera & Shontz, 1978; Schwartzberg, 1993; Taylor, Lichtman, & Wood, 1984; Thompson, Coker, Krause, & Henry, 2003). Alternatively, according to theory and research, the meaning construct is also negatively

correlated with such factors as general psychological distress (Schulenberg, 2004; Schulenberg, Schnetzer, et al., 2010; Schulenberg, Strack, & Buchanan, 2010), depression and anxiety (Crumbaugh & Henrion, 1988; Flannery & Flannery, 1990; Pöhlmann, Gruss, & Joraschky, 2006; Reker, 2000; Robak & Griffin, 2000; Steger, Mann, Michels, & Cooper, 2009), death anxiety (Rappaport, Fossler, Bross, & Gilden, 1993), hopelessness (Shek, 1993), suicidal ideation and suicide attempts (Lester & Badro, 1992), substance abuse (e.g., Carroll, 1993; Kinnier et al., 1994; Newcomb & Harlow, 1986; Nicholson et al., 1994; Padelford, 1974), and boredom proneness (Melton & Schulenberg, 2007; Schulenberg, Schnetzer, et al., 2010).

### *Measurement of Meaning*

Utilizing effective measures to assess meaning is crucial, yet it has been one of the more challenging hurdles for researchers. Various measures of meaning have been developed with accompanying advantages and disadvantages. These include, but are not limited to, the Purpose in Life test (PIL; Crumbaugh & Maholick, 1964, 1969), the Life Purpose Questionnaire (LPQ; Hablas & Hutzell, 1982), the Life Attitude Profile – Revised (LAP-R; Reker, 1992), the Life Regard Index (LRI; Battista & Almond, 1973), the Personal Meaning Profile (PMP; Wong, 1998), the Subjective Well-Being Scale (SWBS; Ryff, 1989), the Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006), and most recently, the Purpose in Life test – Short Form (PIL-SF; Schulenberg & Melton, 2010; Schulenberg, Schnetzer, et al., 2010). Regardless of variations across measures of meaning, correlations with positive and negative variables are relatively consistent.

A more in-depth description of the PIL is warranted since it is a widely used measure of meaning and is supported by the longest research history. The PIL was developed to measure the

extent to which a person perceives life purpose and meaning. It contains 20 items rated on a 7-point Likert-type response scale with different endpoint anchors for each item (4 = neutral). Examples of items include: “My personal existence is: (1) utterly meaningless without purpose; (7) very purposeful and meaningful” and “In achieving life goals I have: (1) made no progress whatever; (7) progressed to complete fulfillment.” Items are summed to obtain a total, with scores ranging from 20-140 and higher scores reflecting greater perceived meaning (Crumbaugh & Maholick, 1964, 1969).

While there are ample data in support of the reliability and validity of PIL scores (e.g., Hutzell, 1987, 1988; Reker, 2000; Robak & Griffin, 2000; Schulenberg, 2004; Schulenberg, Schnetzer, et al., 2010), criticisms in recent years have focused on a potentially problematic factor structure. Steger and colleagues (2006) point to the PIL’s problematic factor structure as possibly reflecting “multiple content domains” (p. 81). Indeed, factor-analytic investigations have yielded a variety of models comprising one, two, or more factors. To address criticisms, a recent empirical investigation (Schulenberg & Melton, 2010) examined various models of the PIL. Using confirmatory factor-analytic procedures, this study replicated a two-factor model developed by Morgan and Farsides (exciting life, purposeful life) in a large undergraduate student sample. Moreover, this study was able to find support for the purposeful life factor (items 3, 8, and 20) in conjunction with item 4 as a psychometrically sound short form (referred to as the PIL-SF). Another recent investigation (Schulenberg, Schnetzer, et al., 2010) revealed strong psychometric properties of the PIL-SF in a sample of university students (see Method section). Since the PIL-SF is a more streamlined, purer measure of the meaning construct, it should be better able to assess associations among meaning and other variables.

## *Meaning and Depression*

When examining how meaning is associated with other variables, one construct of interest is depression. Meaninglessness tends to be associated with depression, both conceptually and empirically. Literature on the meaning construct is replete with explanations regarding the extent to which they are related theoretically (e.g., Baumeister, 1991; Frankl, 1959/1985, 1955/1986, 1969/1988; Seligman, Rashid, & Parks, 2006). Further, empirical research has consistently demonstrated a negative association between perceived meaning and depression scores (Briggs & Shoffner, 2006; Debats, 1990; Ellermann & Reed, 2001; Feldman & Snyder, 2005; Flannery & Flannery, 1990; Garner, Bhatia, Dean, & Byars, 2007; Lester & Badro, 1992; Phillips, 1980; Reker, 1997; Robak & Griffin, 2000; Ryff & Keyes, 1995; Steger, Oishi, et al., 2009; Taliaferro, Rienzo, Pigg, Miller, & Dodd, 2009; Wong, 1998; Zika & Chamberlain, 1992).

For example, Briggs and Shoffner (2006) examined correlations between spiritual wellness and depression in a sample of older adolescents aged 18-19 ( $N = 188$ ). The authors conceptualized spiritual wellness as consisting of four components: (1) meaning and purpose in life, (2) inner resources, (3) transcendence, and (4) positive interconnectedness. Regression analyses revealed that of the four factors, only meaning and purpose in life significantly predicted depression scores. Additionally, Mascaro and Rosen (2005, 2008) used longitudinal studies to examine the effect of meaning on reported depressive symptoms in samples of undergraduates ( $N = 191$ ;  $N = 395$ , respectively). They demonstrated that lower meaning scores (on the Spiritual Meaning Scale, the Personal Meaning Profile, and the Life Regard Index-Revised, framework subscale) predicted increases in reported depressive symptoms after two months.

Theoretically, the meaning construct is expected to be strongly related to depression, but not synonymous with, nor reducible to depression. Indeed, Frankl posited that existential despair and questioning life's meaning are not necessarily pathological, and may be part of a healthy maturational process involving "intellectual sincerity and honesty" (Frankl, 1969/1988, p. 91). An examination of surface similarities pertaining to symptom presentation reveals several overlapping potential symptoms (e.g., hopelessness, negativity). However, there are several symptoms unique to each. For example, feelings of existential alienation and accompanying anxiety and boredom may accompany lack of meaning (Frankl, 1959/1985) whereas sleep disturbance, psychomotor agitation/retardation, fatigue, feelings of worthlessness, and problems concentrating often accompany depression (American Psychiatric Association, 2000).

Based on a review of the empirical literature, depression and meaning variables are usually correlated (i.e., meaninglessness associated with depression), but not necessarily to an extent that would indicate they are the same. A study conducted by Waisberg and Starr (1999) is illustrative along these lines. They conducted a study examining depression and perceived meaning among individuals undergoing treatment for substance abuse ( $N = 146$ ). They found a  $-.70$  correlation between the Beck Depression Inventory (BDI) and PIL and reasoned that a shared variance of about 50% is within the range predicted if we consider these variables to be related but distinct. They also examined the shape of the scatter plot of PIL scores versus BDI scores and found that BDI scores were predictive of PIL scores in the middle range, but not in the extreme ranges. These results suggested that rather than a simple inverse association between meaning and depression, there is a more complex relationship.

Lester and Badro (1992) conducted another study examining depression and purpose in life as predictors in regression analyses. They found PIL scores to be useful in the prediction of

scores on indicators of current and past suicidal ideation in a sample of 120 college students. In the regression model predicting current suicidal ideation, both depression and purpose in life were significant predictors. However, in the model predicting past suicidal ideation, purpose in life, but not depression, was a significant predictor.

Critics have argued that some measures of meaning (the PIL being one example) contain items that overlap with depression. Specifically, Dyck (1987) argued that the PIL's significant correlations with measures of depression are problematic, claiming that in addition to measuring perceived meaning the PIL may be measuring depression as well. It is expected that using the short form of the PIL will avoid issues of overlapping constructs given the removal of items directly related to negative affect (Schulenberg & Melton, 2010; Schulenberg, Schnitzer, et al., 2010).

#### *Depression and Alcohol Use*

Given the complexity of the relationship between meaning and depression, one purpose of this study is to parse out the variance in a related construct – alcohol use – as a means of exploring the extent to which depression and meaning account for unique variance. Since alcohol use is related to both meaning and depression, it serves as a useful variable for this purpose.

Epidemiological data suggest that major depression and alcohol use disorders are highly comorbid (Grant et al., 2009). Among 43,093 individuals representative of the U.S. population, the rate of major depressive disorder (MDD) was 7.06% and the rate of alcohol use disorders was 8.46%. Compared to those without an alcohol use disorder, those with an alcohol use disorder were 2.3 times more likely to meet criteria for MDD. Further, empirical research consistently supports significant correlations between depression and alcohol abuse (e.g.,

Aneshensel & Huba, 1983; Deykin, Levy, & Wells, 1987; Dorus, Kennedy, Gibbons, & Ravi, 1987; Marmorstein, Iacono, & Malone, 2010; Paljärvi et al., 2009).

While many investigations have examined causality and directionality between depression and alcohol abuse, results are mixed. Some have found support for “self-medication theories” (Khantzian, 1985), whereas others have found support for “impaired functioning” theories (Vaillant & Milofsky, 1982). That is, some studies have demonstrated that depression precedes (and causes) more frequent alcohol use (e.g., Deykin et al., 1987; Henry et al., 1993), whereas others have demonstrated that alcohol use precedes (and causes) depression (e.g., Hansell & White, 1991; Marmorstein et al., 2010; Vaillant & Milofsky, 1982). Moreover, a study conducted by Newcomb, Vargas-Carmona, and Galaif (1999) found evidence for both conceptualizations. They reported longitudinal data illustrating that presence of dysphoria (in this study, referring to hopelessness and depression) at one point in time was predictive of greater alcohol use in a community sample of adults ( $N = 470$ ) four years later. Further, alcohol-related problems at one point in time increased the likelihood of psychological impairment (including anxiety and decreased perceived life meaning) four years later. For the purposes of the current study, causality will not be examined. However, it is important to note the strength and complexity of the association between these two variables.

As for college students in particular, the relationship between depression and alcohol use may be even more complex (Cranford, Eisenberg, & Serras, 2009). The 1997 and 1999 College Alcohol Studies revealed a significant association between “poor mental health” and alcohol abuse (Weitzman, 2004). However, some studies show that drinking alcohol is actually correlated with lower levels of depressed mood (Cranford et al., 2009; Harrell & Karim, 2008; Hartley, Elsabagh, & File, 2004). Seemingly, among college students, the distinction between

alcohol *consumption* and alcohol-related *problems* (e.g., academic issues, illness, trouble with authorities) is particularly important. That is, depression is significantly correlated with alcohol-related problems, but not alcohol use alone (Camatta & Nagoshi, 1995; Martens et al., 2008; Nagoshi, 1999; Patock-Peckham, Hutchinson, Cheong, & Nagoshi, 1998). Indeed, diagnoses of alcohol abuse and major depressive disorder have been shown to be significantly correlated in college samples (e.g., Deykin et al., 1987; Pauley & Hesse, 2009; Pullen, 1994).

### *Meaning and Alcohol Use*

Juxtaposed to depression, the meaning construct provides a different lens through which alcohol use may be viewed. According to Frankl (1959/1985), the search for meaning is a person's primary motivation (as opposed to, for example, Freud's "will to pleasure"). When the search for meaning is impeded, a feeling of meaninglessness may result. Consistent with the "self-medicating" theory of alcohol use, Frankl posited that in some cases this void is maladaptively filled by consuming alcohol (Frankl, 1959/1985; Schulenberg, Hutzell, Nassif, & Rogina, 2008). While doing so may alleviate emotional pain temporarily, ultimately, it is ineffective.

A more adaptive way to discover meaning, according to theory, is via one of the three methods discussed previously (i.e., creations, experiences, attitudes). Further, the individual must recognize his or her responsibility, including the freedom to make decisions consistent with personal values as well as accepting responsibility for one's choices (Crumbaugh, 1980; Frankl, 1959/1985; Newcomb & Harlow, 1986). As such, these more adaptive methods for discovering meaning are among those employed in meaning-based treatment for alcohol abuse (Crumbaugh, 1980; Crumbaugh, Wood, & Wood, 1980).

Research conducted with these variables has supported the theoretical connection between lack of meaning and alcohol use in adolescents and adults. The majority of these studies have utilized the PIL (or some variation of it) as a measure of meaning, although many studies have used other measures. Across various instruments, age groups, and levels of symptom severity, lack of meaning is typically associated with higher alcohol consumption and related problems.

To illustrate, studies utilizing community samples of adolescents have found that lower perceived life meaning is associated with more frequent alcohol use. A study examined alcohol use in 144 junior high and high school students, revealing a connection between higher perceived meaning and less alcohol use (Minehan, Newcomb, & Galaif, 2000). Further, Kinnier and colleagues (1994) examined drug use (including alcohol) in hospitalized and non-hospitalized adolescents ( $N = 161$ ). In the “normal” sample, those who more frequently used drugs reported significantly less meaning in their lives than those who used drugs less frequently. In regression analyses, purpose in life served as a strong predictor of substance use in this group, claiming 33% of the variance. These results suggested a differential relationship for varying degrees of psychological distress; that is, there were stronger relationships between the variables for “normal” versus hospitalized participants.

Further, studies utilizing samples of college students typically find similar associations between these variables. Newcomb and Harlow (1986) utilized three statements pertaining to meaning in life to investigate the relationship to substance abuse (including beer, wine, and liquor, among other drugs). The results indicated a partial mediational role of meaning in life in the relation between uncontrollable life stress and substance use in a large sample of college students. A study by Lecci, MacLean, and Croteau (2002) revealed that among 290 college

students, the pursuit of meaningful goals was associated with less frequent drinking. Likewise, distress resulting from conflict surrounding life goals was associated with coping motivations for drinking, which were predictive of alcohol-related problems (Lecci et al., 2002). Another study conducted by Palfai and Weafer (2006) found that college students ( $N = 121$ ) reporting lower meaning derived from life goals were more likely to binge drink and endorsed more alcohol-related negative consequences. In addition, Wood and Hebert (2005) examined the relationship between Pargament's Meaning Scale (PMS) and a measure of college student risk behaviors (including alcohol use). They found a significant negative correlation between these variables ( $N = 606$ ). Orcutt (1984) conducted a study involving existential boredom and the use of alcohol among college students ( $N = 103$ ). Multiple regression analyses revealed that existential boredom and lack of purpose predicted frequency of alcohol use in male students.

Additionally, studies utilizing community samples of young adults have found consistent associations between perceived life meaning and alcohol use. A longitudinal study ( $N = 470$ ) indicated that those who abused drugs (including alcohol) earlier in their lives typically experienced psychological distress and decreased purpose in life (as assessed by the PIL) four years later (Newcomb et al., 1999). Harlow, Newcomb, and Bentler (1986) sampled 722 young adults (mean age = 21.93 years), finding a significant negative correlation between purpose in life (using a variation of the PIL) and substance use (including alcohol) for females.

Moreover, studies examining clinical samples and those addicted to alcohol have indicated similar associations. Marsh, Smith, Piek, and Saunders (2003) found that compared to social drinkers ( $N = 357$ ), those in treatment for alcohol abuse ( $N = 137$ ) had significantly lower PIL scores (using a variation of the PIL). Schlesinger, Susman, and Koenigsberg (1990)

examined a group of women diagnosed with alcoholism ( $N = 30$ ), finding that they scored significantly lower on the PIL than a group of matched women without the diagnosis ( $N = 30$ ).

As discussed, a negative relationship between purpose in life and alcohol use is consistently found in the research literature. Furthermore, several studies have examined the effect of alcohol abuse *treatment* on one's perceived purpose in life. One study found that after a 30-day inpatient alcohol treatment program, patients' PIL scores increased, although mean pre- and post-program scores were within the "indecisive" range (Jacobson, Ritter, & Mueller, 1977). Crumbaugh and Carr (1979) reported a significant increase in PIL scores after inpatient alcohol treatment, as did Waisberg and Porter (1994). Waisberg and Porter reported that mean PIL scores before treatment were in the "below normal" range, whereas after treatment mean scores were in the "normal" range. Further, post-treatment PIL scores at one of the two facilities examined were predictive of alcohol use status at 3-month follow-up (Waisberg & Porter, 1994). Robinson, Cranford, Webb, and Brower (2007) examined alcohol treatment outpatients. They found that whether or not patients were involved with Alcoholics Anonymous, there were significant positive correlations between PIL scores and the absence of heavy drinking after six months in treatment.

Moreover, increases in life meaning scores have been associated with length of sobriety. In a study examining members of Alcoholics Anonymous ( $N = 100$ ), there was a significant correlation between PIL scores and length of sobriety (Carroll, 1993). Another study examining length of sobriety in persons recovering from alcoholism ( $N = 121$ ) revealed that those in long-term recovery (over 47 months) reported significantly higher PIL scores than those in short-term recovery (3-12 months; Junior, 2006).

### *Meaning, Depression, and Alcohol Use*

To summarize, the available research indicates that (1) meaning and depression are inversely related, distinct variables; (2) depression and alcohol abuse are highly comorbid; and (3) meaning and alcohol use are significantly and inversely associated. Because there is limited research examining relations among all three variables, new research will aid in elucidating the associations among them. While the intersection of these constructs has seldom been investigated empirically, there are a few particularly noteworthy exceptions. One study conducted by Harlow, Newcomb, and Bentler (1986) examined 722 late-adolescents and young adults (mean age = 21.93 years). The researchers found that while the general trends were in the same direction, perceived meaning and substance use (including both alcohol and illicit drugs) were significantly and negatively correlated for males but not for females. Further, they found that depression was significantly and positively correlated with substance use for females but not males.

Another study conducted by Kinnier and colleagues (1994) assessed substance use (including both alcohol and illicit drugs) in hospitalized and non-hospitalized adolescents ( $N = 161$ ; mean age = 15 years). In the non-hospitalized sample, those who more frequently used alcohol and drugs (combined) reported significantly more depression and less meaning in their lives than those who did so less frequently. However, when examining gender separately in this sample, the correlations between perceived meaning and substance use, and between depression and substance use, were significant for females but not for males (Kinnier et al., 1994).

### *Gender Differences in Meaning, Depression, and Alcohol Use*

With regard to gender differences in meaning scores, they are not typically found (e.g., Harlow et al., 1986; Kinnier et al., 1994; Meier & Edwards, 1974; Reker & Cousins, 1979; Steger et al., 2006). As an exception, when differences are found, it is usually women who report higher meaning scores (e.g., Harris & Standard, 2001; Mascaro & Rosen, 2008; Steger, Oishi, et al., 2009). Reasons for the occasional differences have not been the subject of systematic empirical investigation.

As for gender differences in depression scores, epidemiological data routinely suggest that women report higher rates than men both in terms of actual diagnosis as well as subclinical symptoms (Nolen-Hoeksema, 2001). Empirical studies report mixed findings, especially those involving college samples, with some reporting higher depression in females (e.g., Alfeld-Liro & Sigelman, 1998; Downing, 2006; Harlow et al., 1986; Kelly, Kelly, Brown, & Kelly, 1999; Steger, Oishi, et al., 2009), and others reporting no significant difference (e.g., Dyson & Renk, 2006; Eisenberg, Gollust, Golberstein, & Hefner, 2007; Kinnier et al., 1994; Michael, Huelsman, Gerard, Gilligan, & Gustafson, 2006). Explanations for gender differences involve genetic, neurochemical, hormonal, or psychological causes (Grigoriadis & Robinson, 2007), such as different coping skills, attributional styles, and responses to stress (Nolen-Hoeksema, 2001; Piccinelli & Wilkinson, 2000).

As for gender differences in alcohol use, research consistently reveals that males report more in terms of frequency, intensity, and alcohol-related problems (e.g., Bennett, Miller, & Woodall, 1999; Benton, Benton, & Downey, 2006; DeMartini & Carey, 2009; O'Malley & Johnston, 2002; Perkins, 2002; Shinew & Parry, 2005; Wallenstein, Pigeon, Kopans, Jacobs, &

Aseltine, 2007; Wechsler et al., 2002). For example, in a recent investigation using the Alcohol Use Disorders Identification Test (AUDIT) to explore college students' alcohol use ( $N = 462$ ), 62% of males and 45% of females scored above the cutoff for “at-risk” or harmful use (DeMartini & Carey, 2009).

According to a national survey of college students (American College Health Association, ACHA, 2009), a similar percentage of men and women report drinking within the last 30 days (males = 58.6%; females = 59.8%). However, of those who indicated they are current drinkers, 24.2% of males and 10.1% of females consumed seven or more alcoholic beverages the last time they drank, with males drinking a mean number of 6.29 and females drinking a mean number of 4.07 (ACHA, 2009). Another national survey (Slutske, 2005) indicated that 29% of male and 14% of female college students reported binge drinking on a weekly basis. Further, this survey revealed that 24% of males and 13% of females met diagnostic criteria for alcohol dependence or abuse within the previous year. Although there is some evidence of gender convergence (Wechsler & Kuo, 2000), it is generally accepted that gender differences continue to exist (Holmila & Raitasalo, 2005). Biological explanations (i.e., different body composition, metabolism) and psychological/social explanations (e.g., males' different motivations to drink as a product of different socialization processes) have been offered (Harrell & Karim, 2008; Holmila & Raitasalo, 2005).

Beyond gender differences in the variables individually, differences may exist in the associations among them. While the general trends are the same across gender (i.e., both meaninglessness and depression are associated with more problematic alcohol consumption), the strengths of the correlates of alcohol use across various studies have not been consistent. For example, for males perceived meaning has been a significant correlate in some studies (Orcutt,

1984; Padelford, 1974) while not in others (Harlow et al., 1986; Kinnier et al., 1994). Likewise, for females perceived meaning is a significant correlate in some studies (Harlow et al., 1986; Kinnier et al., 1994) and not in others (Orcutt, 1984; Padelford, 1974). For males depression is a significant correlate in some studies (Harlow et al., 1986; Newcomb et al., 1999) and not in others (Harrell & Karim, 2008; Kinnier et al., 1994). Similarly, for females depression is a significant correlate in some studies (Harrell & Karim, 2008; Kinnier et al., 1994; Newcomb et al., 1999) and not in others (Harlow et al., 1986). Although the underlying trend is such that meaninglessness and depression are associated with alcohol problems regardless of gender, because the literature contains rather inconsistent findings on the strength of these associations, it will be important to study the potential influence of gender on these variables.

#### *Relevance of Meaning, Depression, and Alcohol Use to College Students*

Meaning, depression, and alcohol use are each relevant to college students. Meaning has been shown to be an important construct to students (DeVogler & Ebersole, 1980; Laverty, Pringle-Nelson, Kelly, Miket, & Janzen, 2005). DeVogler and Ebersole examined possible categorizations of meaning reported by college students. They found meaning related to “relationships,” “service,” and “growth” were the top-rated categories among those surveyed. The adolescent years are important for identity formation (Damon et al., 2003; Erikson, 1968) and it is during this time that individuals deliberately search for beliefs systems upon which to base purposeful understandings and goals for themselves. Moreover, during late adolescence and the transition between adolescence and young adulthood, these issues may be particularly pertinent (Harlow et al., 1986). Steger, Oishi, and Kashdan (2009) suggested that during emerging adulthood a sense of purpose may be particularly important to foster developmental changes occurring at this time in life.

Transitioning from a relatively structured home environment to a relatively unstructured college environment is associated with potential stressors (e.g., increased responsibility for self-care, managing increased academic loads). Further, this time in life is associated with exposure to new people and different ways of life, which increases exponentially the options one must consider when constructing purposeful goals. During this stage individuals may be vulnerable to experiencing meaninglessness, and conversely, having a sense of purpose may foster resilience and adaptive functioning (Steger, Oishi, et al., 2009).

Depression is a serious issue among college students. The transition to college is often replete with stressors which have been shown to be associated with endorsement of depressive symptoms, especially in freshmen and sophomores (Alfeld-Liro & Sigelman, 1998; Dyson & Renk, 2006). Evidence suggests that mental health issues such as depression are increasing among students in postsecondary institutions (U.S. Department of Education, National Center for Education Statistics, 2005). The American College Health Association surveyed 34,208 students who were randomly sampled from 57 postsecondary institutions across the U.S. (2009). The survey indicated that nearly 30% reported feeling “so depressed it was difficult to function” in the past 12 months. Further, 9.2% of those surveyed endorsed being diagnosed or seeking treatment for depression in the past 12 months. Suicidal ideation, suicide attempts, and completed suicide serve as extreme indicators of depression. In college students, suicide is the second leading cause of death (behind unintentional injuries), with more than 1,000 suicides and approximately 24,000 suicide attempts occurring annually (Lamberg, 2006).

Alcohol abuse is also a significant problem among college students. According to a 2008 survey conducted by the Substance Abuse and Mental Health Services Administration (2009), 61% of those surveyed indicated that they were current drinkers, 40.5% engaged in binge

drinking, and 16.3% were heavy drinkers. Alcohol-related consequences among college students are also cause for concern. Empirical research consistently reveals significant correlations between frequency/amount of alcohol consumption and negative consequences (e.g., Bennett et al., 1999; Jennison, 2004; Park & Grant, 2005; Vik, Carrello, Tate, & Field, 2000). Heavy drinking on college campuses has caused a variety of problems, including physical illness, impaired academic functioning, problems with relationships, problems with authority/police, property damage, unsafe sex practices, physical fights, and injury to self or others (Vik et al., 2000). Hingson, Heeren, Winter, and Wechsler (2005) integrated information regarding alcohol-related injury and mortality among college students between 1998 and 2001. They noted that more than 500,000 injuries and approximately 70,000 alcohol-related sexual assaults were reported during that time frame. The number of alcohol-related deaths increased from approximately 1,600 in 1999 to approximately 1,700 in 2001. In addition to short-term consequences, evidence suggests a greater likelihood for long-term consequences of binge drinking in college, including alcohol dependence and abuse ten years post-graduation (Jennison, 2004).

### *Current Study*

This study seeks to examine patterns of association among self-reports of perceived meaning in life, depression, and alcohol use in a sample of college students. This study involves simplification of certain aspects of previously discussed studies (Harlow et al., 1986; Kinnier et al., 1994) in an effort to elucidate the associations among these variables. That is, it will include a purer measure of the meaning construct (an instrument not confounded with depression), and focuses on alcohol use in particular, rather than combining alcohol and illicit drug use. Since the literature is mixed to varying degrees with regards to gender differences in these variables, data

from the current study will be examined to detect potential gender differences in perceived meaning, depression, and alcohol use.

Based on the literature review, the following hypotheses are proposed: (1) Males will report higher alcohol use (a continuous variable) and more problematic alcohol consumption (a dichotomous variable). (2) Women will report higher levels of depression. (3) Gender differences in perceived meaning will be explored; however, significant differences are not anticipated. (4) Perceived meaning will be significantly and inversely correlated with alcohol use and with the presence of problematic alcohol consumption for the sample overall. Potential gender differences will be examined. (5) Perceived meaning will correlate significantly and inversely with depression severity for the sample overall. Potential gender differences will be examined. (6) Depression will correlate significantly and positively with alcohol use and with the presence of problematic alcohol consumption for the sample overall. Potential gender differences will be examined. (7) Perceived meaning and depression will each be significant predictors of alcohol use and the presence of problematic alcohol consumption. Perceived meaning will account for significant additional variance, above and beyond what is accounted for by depression. Potential gender differences will be examined.

## METHOD

### *Participants*

Participants included 276 students recruited via an online system regularly employed by The University of Mississippi's Department of Psychology as a means to sign up for experimental studies. Course credit or extra credit was awarded for participation. Of the 276 completed surveys, eight were removed due to indiscriminate response patterns (i.e., all items on more than one survey within the packet were marked with the same response), leaving a total of 268 participants with an average age of 19.1 years ( $SD = 2.0$ ). Of the 267 participants who reported gender, 65 were male (24.3%) and 202 were female (75.7%). Of the 267 respondents who reported ethnicity, 203 identified as White (76%), 46 as African American (17.2%), 6 as Hispanic (2.2%), 5 as Asian or Pacific Islander (1.9%), and 7 as "other" (2.6%). Of the 268 respondents who reported their academic classification, 173 (64%) were freshmen, 53 (20%) were sophomores, 21 (8%) were juniors, and 21 (8%) were seniors.

### *Instruments*

*Demographic Survey.* A demographic form was utilized to gather basic information. Respondents were asked to provide such information as age, gender, ethnic/racial background, and academic classification. The demographic survey is presented in Appendix A.

*Purpose in Life test – Short Form.* The Purpose in Life test – Short Form (PIL-SF; Schulenberg & Melton, 2010; Schulenberg, Schnetzer, et al., 2010) contains four items extracted

from the original, 20-item Purpose in Life test. These questions specifically assess perceived life meaning as well as purposeful goals. Possible scores range from 4 to 28, with higher scores suggestive of greater perceived meaning/purpose in life ( $M = 22.67$ ,  $SD = 3.73$ ; Schulenberg, Schnetzer, et al., 2010). A recent investigation demonstrated support for the psychometric properties of the PIL-SF using an independent sample of college students (Schulenberg, Schnetzer, et al., 2010). The internal consistency coefficient alpha for the four extracted items was .84. PIL and PIL-SF items were significantly correlated ( $r = .75$ ). The PIL-SF was correlated significantly and as expected (positively or negatively) with other measures of meaning, satisfaction with life, boredom proneness, and general psychological distress. The PIL-SF is presented in Appendix B.

*Center for Epidemiological Studies – Depression scale.* The Center for Epidemiological Studies – Depression scale (CES-D; Radloff, 1977) is a self-report measure of depressive symptoms for use in the general population. It contains 20 items rated with a Likert-type response format ranging from 0 to 3, with 0 = *rarely or none of the time* (less than 1 day per week); 3 = *most or all of the time* (5-7 days per week). Participants are asked to indicate how often they felt or behaved a certain way in the past week. There are four items which are reverse scored, then points for all items are added to obtain the total score (range = 0 to 60). Higher scores are suggestive of more depressive symptoms. In terms of cutoff scores, the generally accepted cut point is 16, however, several researchers have deemed this point an overestimation of depression (Roberts, Lewinsohn, & Seeley, 1991; Santor, Zuroff, Ramsay, Cervantes, & Palacios, 1995). Shean and Baldwin (2008) suggested a cutoff of 21 (indicating moderate depression) to maximize sensitivity and specificity in college samples, whereas Santor and colleagues warned that researchers should use caution with cutoff scores in college samples.

Some have noted that when using the CES-D with college students, it is most appropriate to view depressive symptoms along a dimension rather than using a cutoff score (e.g., Baldwin & Shean, 2006).

Radloff (1977) reported internal consistency coefficients of .85 for scores obtained from a community sample and .90 for scores obtained from a sample of psychiatric patients seeking treatment for depression. As for college student samples in particular, a recent study obtained an alpha of .89 (Shean & Baldwin, 2008). Moreover, studies consistently support the measure's specificity and predictive value for current, past, and lifetime prevalence of depressive disorders in college students (Baldwin & Shean, 2006; Shean & Baldwin, 2008). Radloff cited patterns of significant correlations with other self-report measures as evidence of validity. More specifically, CES-D scores correlate positively and significantly with the Beck Depression Inventory (Santor et al., 1995), the Symptom Checklist-90, the Raskin Rating Scale, and the Hamilton Rating Scale (Brantley, Mehan, & Thomas, 2000). The CES-D is presented in Appendix C.

*Alcohol Use Disorders Identification Test with standard drink chart (NIAAA).* The Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) is a screener for problematic alcohol consumption, available in both interview and self-report format. It was created by the World Health Organization to address deficiencies with preexisting measures of alcohol consumption such as failure to assess frequency and amount of alcohol consumed and binge drinking (Fleming, Barry, & MacDonald, 1991). The questionnaire section contains 10 items assessing frequency and amount of alcohol consumption as well as hazardous and excessive drinking behaviors (Babor et al., 2001). Additionally, the instructions utilized in the current study requested that the participant refer to the attached "standard drink chart" (NIAAA, 2005) when determining number of drinks. Participants respond

to AUDIT questions by marking an “X” in the box which depicts the frequency with which certain alcohol-related behaviors occur. Points are allotted accordingly from 0 to 4 and added to obtain a total score, with a maximum score of 40. Higher scores indicate more frequent/problematic alcohol use (Saunders, Aasland, Babor, De La Fuente, & Grant, 1993). The manual suggests a cutoff value of 8 points to maximize sensitivity and specificity with regard to hazardous drinking, defined as “alcohol consumption that increases the risk of harmful consequences for the user or others” (Babor et al., 2001, p. 5).

With regards to psychometric properties in college samples, AUDIT scores have internal consistency reliability coefficients ranging from .80 (Fleming et al., 1991) to .94 (O’Hare & Sherrer, 1999), with scores accurately detecting alcohol dependence and personal/social drinking problems in university students (Fleming et al., 1991; O’Hare, 2005; O’Hare & Sherrer, 1999; Shields, Guttmanova, & Caruso, 2004). AUDIT scores have been found to correlate .88 with the Michigan Alcoholism Screening Test (MAST) and .78 with the CAGE screener for alcohol dependence (Bohn, Babor, & Kranzler, 1995). The AUDIT is presented in Appendix D.

### *Procedures*

*Data collection.* This study was granted approval by the University’s Institutional Review Board. Data collection took place in a number of group sessions over the course of the Fall 2009 semester. Consent was obtained via written and oral means and participants were given the opportunity to have questions answered. Data collection packets were provided, including a demographics form, the PIL-SF, the CES-D, and the AUDIT, along with other measures required for the larger study of which this investigation was a part. Within packets, measures were counterbalanced to account for potential order effects.

*Data analyses.* In terms of statistical procedures, demographic frequencies were calculated, as well as means, standard deviations, minimum and maximum scores, and coefficient alphas for each of the relevant measures. *T*-tests were performed on PIL-SF scores, CES-D scores, and AUDIT scores for males versus females to detect potential gender differences. A chi-square test was used to detect potential gender difference in the presence of problematic alcohol consumption (since it is a dichotomous variable). A correlation matrix was assembled in order to examine patterns of correlation among all variables of interest, with the group as a whole as well as separately for males and females. This helped to demonstrate the influence of gender on the patterns of correlation. Point biserial correlations were used when determining associations between presence of problematic alcohol consumption and other variables. A hierarchical linear regression was conducted using (1) gender, (2) depression, and (3) perceived meaning to predict alcohol use, with (4) an interaction term entered to examine potential differential effects of meaning with regard to gender. A hierarchical logistic regression was conducted to predict presence of problematic alcohol consumption. The same sequence of predictor variables was used as in the hierarchical linear regression.

## RESULTS

### *Descriptive analyses*

Means, standard deviations, minimum and maximum scores, and coefficient alphas for each of the relevant measures were calculated. A total of 268 participants completed the PIL-SF, resulting in a mean score of 23.34 ( $SD = 3.06$ ), with scores ranging from a minimum of 13 to a maximum of 28. This mean score was nearer the high end of the range of possible scores and was comparable to that reported in the 2010 study conducted by Schulenberg, Schnetzer, and Buchanan ( $M = 22.67$ ;  $SD = 3.73$ ). For the CES-D, the mean score for 268 participants was 13.17 ( $SD = 9.41$ ) with scores ranging from 0 to 47. This mean was on the low end of the range of possible scores and was slightly lower than that reported in other studies utilizing college samples (e.g.,  $M = 17$ ; Santor et al., 1995). For the AUDIT, the mean score for 268 participants was 6.81 ( $SD = 5.81$ ) with scores ranging from 0 to 31. Compared to other studies employing college student samples, this mean was remarkably similar (e.g.,  $M = 6.32$ ; Wallenstein et al., 2007). In terms of prevalence of problematic alcohol consumption, 163 (60.8%) scored below the cutoff score of 8 points, and 105 (39.2%) scored at or higher than the cutoff value of 8 points. This prevalence rate was comparable to that reported in other studies utilizing college samples (e.g., 34% scored 8 or above; Wallenstein et al., 2007). Broken down by gender, 32 (49.2%) of the males and 72 (35.6%) of the females scored at or above the cutoff on the AUDIT (indicating problematic alcohol consumption). Means and standard deviations for each of the measures are presented in Table 1, for the total sample and separated by gender.

With regard to reliability, internal consistency coefficients (Cronbach's alphas) were .79 for the PIL-SF, .89 for the CES-D, and .85 for the AUDIT. These coefficients are considered

Table 1

*Means and Standard Deviations (N = 268)*

Variables	Overall Sample <i>N</i> = 268	Males <i>N</i> = 65	Females <i>N</i> = 202	Mean differences
Center for Epidemiological Studies - Depression Scale (CES-D)	<i>M</i> = 13.17 <i>SD</i> = 9.41	<i>M</i> = 12.28 <i>SD</i> = 7.96	<i>M</i> = 13.50 <i>SD</i> = 9.83	<i>t</i> (265) = -.913 <i>p</i> = .362
Purpose in Life test - Short Form (PIL-SF)	<i>M</i> = 23.34 <i>SD</i> = 3.06	<i>M</i> = 22.66 <i>SD</i> = 2.64	<i>M</i> = 23.55 <i>SD</i> = 3.16	<i>t</i> (265) = -2.047 <i>p</i> = .042
Alcohol Use Disorders Identification Test (AUDIT)	<i>M</i> = 6.81 <i>SD</i> = 5.81	<i>M</i> = 8.63 <i>SD</i> = 6.29	<i>M</i> = 6.22 <i>SD</i> = 5.54	<i>t</i> (265) = 2.955 <i>p</i> = .003

acceptable by a number of standards (e.g., DeVellis, 2003; Nunnally & Bernstein, 1994) and are consistent with alphas reported in previous studies (e.g., Fleming et al., 1991; O'Hare & Sherrer, 1999; Schulenberg, Schnetzer, et al., 2010; Shean & Baldwin, 2008).

### *Hypothesis testing*

The first hypothesis stated that males would report higher alcohol consumption, both in terms of severity (a continuous variable), as well as problematic alcohol consumption (a dichotomous variable). The data support this hypothesis, with males reporting significantly higher AUDIT scores (*M* = 8.63; *SD* = 6.29) than females (*M* = 6.22; *SD* = 5.54), using an independent samples *t*-test, *t* (265) = 2.96, *p* = .003, two-tailed. Further, males reported a higher rate of problematic alcohol consumption as indicated by a chi-square analysis,  $\chi^2$  (1) = 3.82, *p* = .051.

The second hypothesis predicted that females would report higher depression severity. This finding was not supported, as indicated by an independent samples *t*-test,  $t(265) = -0.913$ ,  $p = .362$ , two-tailed. Females' CES-D scores ( $M = 13.50$ ;  $SD = 9.83$ ) were not statistically different than males' scores ( $M = 12.28$ ;  $SD = 7.96$ ). Neither of these means was suggestive of clinically significant levels of depression (Shean & Baldwin, 2008).

As for gender differences in perceived meaning scores (third hypothesis), an independent samples *t*-test revealed that females ( $M = 23.55$ ;  $SD = 3.16$ ) reported significantly higher PIL-SF scores than males ( $M = 22.66$ ;  $SD = 2.64$ ),  $t(265) = -2.05$ ,  $p = .042$ , two-tailed. Although there is a statistically significant difference, scores on the PIL-SF were negatively skewed, and as such, both mean values are closer to the higher end of the range.

As for the fourth hypothesis which predicted that perceived meaning scores would be significantly and negatively correlated with alcohol use (a continuous variable) and problematic alcohol consumption (a dichotomous variable), PIL-SF scores were found to correlate significantly and negatively with AUDIT scores in the sample overall, using the Pearson product-moment correlation ( $r = -.17$ ,  $p = .006$ ). Further, PIL-SF scores were found to correlate significantly and negatively with the presence of problematic alcohol consumption as calculated using a point-biserial correlation ( $r_{pb} = -.14$ ,  $p = .022$ ). Subsequently, the dataset was split to examine correlations separately for males and females. In terms of alcohol use (continuous variable), the correlation for males was not statistically significant ( $r_a = -.18$ ,  $p = .146$ ), yet for females the correlation was statistically significant ( $r_b = -.14$ ,  $p = .047$ ). Likewise, in terms of problematic alcohol use (dichotomous variable), for males the correlation was not significant ( $r_{pb(a)} = -.16$ ,  $p = .219$ ) and for females the correlation approached significance ( $r_{pb(b)} = -.12$ ,  $p = .081$ ). It is important to note that in each case, the correlation coefficient for males was

stronger than for females, yet different sample sizes (male  $N = 65$ ; female  $N = 202$ ) rendered correlations statistically nonsignificant for males and significant for females. Fisher's r-to-z transformation (Cohen, Cohen, West, & Aiken, 2003; Lowry, 2011) was applied to the data to compare males' and females' correlation coefficients with regard to both alcohol use (continuous variable) and problematic alcohol use (dichotomous variable). In each case, results failed to reject the null hypothesis that the pair of correlations estimate the same population correlation value ( $z = -0.28$ ;  $p = .780$ , two-tailed). In other words, these analyses did not indicate the presence of gender differences with regard to the association between meaning and alcohol use.

As for the fifth hypothesis, perceived meaning scores were expected to correlate significantly and inversely with depression severity. This expectation was met for the sample overall, ( $r = -.39$ ,  $p < .001$ ), however, when the dataset was split by gender, the correlation was not significant for males ( $r_a = -.10$ ,  $p = .450$ ), yet remained significant for females ( $r_b = -.47$ ,  $p < .001$ ). Fisher's r-to-z transformation (Cohen et al., 2003; Lowry, 2011) was applied to the data to compare males' and females' correlation coefficients with regard to meaning and depression. This analysis rejected the null hypothesis that the pair of correlations estimate the same population correlation value ( $z = 2.82$ ;  $p = .005$ , two-tailed). In other words, while there is a strong correlation for females, the correlation for males is weak if it exists at all.

The sixth hypothesis stated that depression scores would correlate significantly and positively with alcohol use (a continuous variable) and with the presence of problematic alcohol consumption (a dichotomous variable) for the sample overall. Results from the correlation analyses do not support this hypothesis in terms of alcohol use ( $r = .09$ ,  $p = .135$ ) or problematic alcohol consumption ( $r_{pb} = .05$ ,  $p = .440$ ). Similarly, when examined separately for males and females, the correlations remained nonsignificant in each case. Fisher's r-to-z transformations

(Cohen et al., 2003; Lowry, 2011) revealed no significant differences among correlations ( $z = -0.48$ ;  $p = .631$ , two-tailed). Correlations are presented in Tables 2 and 3.

Table 2

*Correlation Matrix for Total Sample (N = 268)*

Measure	1	2	3	4
1 CES-D	--	-.39**	.09	.05
2 PIL-SF		--	-.17**	-.14*
3 AUDIT CONT			--	.84**
4 AUDIT DICH				--

*Note.* CES-D= Center for Epidemiological Studies – Depression Scale, PIL-SF = Purpose in Life test – Short Form, AUDIT CONT = Alcohol Use Disorders Identification Test (continuous variable), AUDIT DICH = Alcohol Use Disorders Identification Test (dichotomous variable).

\*Correlation is significant at the .05 level (2-tailed)

\*\*Correlation is significant at the .01 level (2-tailed)

Table 3

*Correlation Matrix for Males (N = 65) and Females (N = 202)*

Measure	1	2	3	4
1 CES-D	--	-.10	.05	.00
2 PIL-SF	-.47**	--	-.18	-.16
3 AUDIT CONT	.12	-.14*	--	.85**
4 AUDIT DICH	.08	-.12	.83**	--

*Note.* Correlations for male participants are presented above the diagonal and correlations for female participants are presented below the diagonal. CES-D= Center for Epidemiological Studies – Depression Scale, PIL-SF = Purpose in Life test – Short Form, AUDIT CONT = Alcohol Use Disorders Identification Test (continuous variable), AUDIT DICH = Alcohol Use Disorders Identification Test (dichotomous variable).

\*Correlation is significant at the .05 level (2-tailed)

\*\*Correlation is significant at the .01 level (2-tailed)

Finally, the data did not meet the expectation of the seventh hypothesis which predicted that perceived meaning and depression would each be significant predictors of alcohol use (a continuous variable) and problematic alcohol consumption (a dichotomous variable). Prior to statistical analyses, one multivariate outlier was removed using indices from Mahalanobis distance, Cook's values, and leverage because of its values exceeding cutoffs as well as large

influence on slopes (Tabachnick & Fidell, 2007). With regard to potential problems involving multicollinearity, although two predictor variables were significantly correlated (PIL-SF and CES-D,  $r = -.39, p < .001$ ), this correlation does not approach an exceedingly high level. Further, tolerance and variance inflation factor (VIF) values were well within accepted standards (Tabachnick & Fidell, 2007).

Hierarchical linear regression was conducted to predict alcohol use scores and results are presented in Table 4. Gender was entered in the first step, the CES-D was entered in the second step, the PIL-SF was entered in the third step, and an interaction term including gender and the PIL-SF was entered in the fourth step. This sequence was selected to control for the effects of gender on alcohol use scores, and to determine if depression and perceived meaning (respectively) would account for additional variance. Then, the interaction term was entered to explore potential differential effects of meaning with regard to gender. Although depression was not found to correlate significantly with the dependent variable, it was entered into the equation as originally conceptualized since other studies (e.g., Newcomb et al., 1999) found this to be an important variable, and also to determine its place among the other variables entered. The first model containing only gender as a predictor of alcohol use accounted for 3.2% ( $R^2 = .032$ ) of the variance and was statistically significant,  $F(1,265) = 8.73, p < .001$ . When depression was added to the prediction of alcohol use in step 2, this accounted for an additional 1.1% of the variance,  $\Delta F(1,264) = 2.94, p = .088$ . The addition of depression into this equation did not reliably increase  $R^2$ . After step 3, with perceived meaning added to the model, an additional 1.3% of the variance was accounted for,  $\Delta F(1,263) = 3.63, p = .058$ . The addition of perceived meaning to the equation approached significance. Addition of the interaction term in the last step accounted

for a mere 0.2% additional variance in the dependent variable. This step did not reliably improve prediction,  $\Delta F(1,262) = .602, p = .439$ .

Table 4

*Hierarchical Linear Regression Predicting Alcohol Use (N = 267)*

Variable	B	SE B	$\beta$	Sig.
Step 1				
Gender	-1.208	.409	-.179	.003
Constant	7.427	.409		.001
Step 2				
Gender	-1.247	.408	-.184	.002
Depression	.064	.037	.103	.088
Constant	6.603	.630		.001
Step 3				
Gender	-1.122	.411	-.166	.007
Depression	.033	.041	.053	.417
Meaning	-.239	.125	-.126	.058
Constant	12.517	3.167		.001
Step 4				
Gender	-1.068	.417	-.158	.011
Depression	.038	.041	.061	.356
Meaning	-.307	.153	-.161	.046
Gender*Meaning	.117	.151	.061	.439
Constant	13.972	3.683		.001

Hierarchical logistic regression was conducted to predict problematic alcohol consumption (a dichotomous variable) with the same sequence of predictor variables used in the hierarchical linear regression. Results are presented in Table 5. The model including gender approached significance,  $\chi^2 (1) = 3.76, p = .052$ , correctly classifying 61% of the cases. For the model including gender and depression, 153/163 (93.9%) of those who did not report engaging in problematic alcohol consumption were correctly classified; 10/104 (9.6%) of those who did report engaging in problematic alcohol consumption were correctly classified. The overall success rate for this model was 61% (which is the same as the model that included only gender) and was not significant  $\chi^2 (2) = 4.70, p = .095$ . In this case, the depression variable alone did not produce a significant increase,  $\chi^2 (1) = .938, p = .333$ . The model including gender, depression, and meaning was significant,  $\chi^2 (3) = 8.24, p = .041$ . Of those who did not report engaging in problematic alcohol consumption, 148/163 (90.8%) were correctly classified; of those who did report engaging in problematic alcohol consumption, 20/104 (19.2%) were correctly classified. While the overall success rate for this model increased to 62.9%, this appears to be an insubstantial increase. Although addition of the meaning variable resulted in an improvement of 10% in classifying those reporting problematic alcohol consumption, the meaning variable alone produced only a marginally significant increase,  $\chi^2 (1) = 3.55, p = .060$ . Adding the interaction term to the model in the fourth step did not result in a significant increase in prediction,  $\chi^2 (1) = 0.16, p = .690$ , and caused the overall model to be in the marginally significant range,  $\chi^2 (4) = 8.40, p = .078$ .

Table 5

*Hierarchical Logistic Regression Predicting Problematic Alcohol Consumption (N = 267)*

Variable	<i>B</i>	<i>SE B</i>	<i>Exp(B)</i>	<i>Sig.</i>
Step 1				
Gender	.560	.288	1.751	.052
Constant	-.591	.147	.554	.001
Step 2				
Gender	.578	.290	1.783	.046
Depression	.013	.013	1.013	.332
Constant	-.768	.236	.464	.001
Step 3				
Gender	.496	.294	1.642	.092
Depression	.002	.015	1.002	.898
Meaning	-.086	.046	.918	.062
Constant	1.394	1.178	4.030	.237
Step 4				
Gender	.474	.300	1.607	.114
Depression	.003	.015	1.003	.848
Meaning	-.098	.056	.906	.079
Gender*Meaning	.022	.055	1.022	.691
Constant	1.672	1.379	5.325	.225

## DISCUSSION

The current study examined associations among depression, perceived meaning, and alcohol use in a college sample. Its aim was to address inconsistent findings with regard to these variables by utilizing measures expected to assess more precisely the variables of interest. That is, although the CES-D was employed because it has been widely used for the purposes of measuring depression in the general population, the PIL-SF was employed to avoid issues of content overlap with the depression measure. Likewise, the AUDIT was chosen because it is a screener for both alcohol consumption and problematic alcohol use. Previous studies have employed less psychometrically sound instruments (i.e., requiring an indication of frequency of use on a list) assessing an array of substances rather than alcohol use alone. Further, whereas such studies examined only frequency of use, the current study made a distinction between those who can be considered to engage in problematic alcohol consumption versus those who do not.

The measures employed to test these hypotheses met psychometric requirements. Mean scores on these measures were comparable to those obtained in other studies with the exception of CES-D scores which were lower than other college samples. In terms of the PIL-SF, the scores were negatively skewed, but this is not surprising given that this is not a clinical sample (clinical samples tend to have lower perceived meaning scores than non-clinical samples; e.g., Kinnier et al., 1994). With regard to the AUDIT, scores were relatively normally distributed and matched other college samples in terms of mean scores and distributions. Collectively,

participants in the current sample reported minimal depression, high perceived meaning, and moderately high (yet typical for college student samples) alcohol use.

### *Hypothesis testing*

Expectations regarding the first hypothesis were met in that males reported significantly higher alcohol use scores and a significantly higher percentage met or exceeded the cutoff for problematic alcohol consumption. These findings are consistent with recent national surveys administered to college students (e.g., ACHA, 2009; Slutske, 2005) as well as previous research (Bennett, Miller, & Woodall, 1999; Benton, Benton, & Downey, 2006; DeMartini & Carey, 2009; O'Malley & Johnston, 2002; Perkins, 2002; Shinew & Parry, 2005; Wallenstein et al., 2007; Wechsler et al., 2002).

Expectations regarding the second hypothesis were not met in that females and males reported similar levels of depression. Although there was no statistically significant difference, the mean score for females was 13.50 ( $SD = 9.83$ ) whereas for males the mean score was 12.28 ( $SD = 7.96$ ) which is a trend in the expected direction. As previous studies have reported mixed results, a lack of gender difference found in the current sample is consistent with Dyson and Renk (2006); Eisenberg et al. (2007); Kinnier et al. (1994); and Michael et al. (2006). As noted, mean depression scores in the current sample are below those reported in other college samples (e.g., Santor et al., 1995).

With regard to the third hypothesis, females reported significantly higher perceived meaning. Although statistically significant, a difference in means of less than one point is unlikely to be clinically or practically significant. Since existing literature is mixed with respect to differences in meaning scores on the PIL long form as well as other measures of meaning (e.g.,

Mascaro & Rosen, 2008; Steger et al., 2006; Steger, Oishi, et al., 2009), these results are not considered to be inconsistent with previous findings. It is important to note that both values are at the higher end of the range of possible scores, suggesting that participants perceive their lives as having meaning.

The fourth hypothesis correctly predicted that perceived meaning scores would be significantly and negatively correlated with alcohol use and problematic alcohol consumption for the sample overall. This lends support to the idea that those who experience higher perceived meaning and engage in purposeful goals tend to report more moderate drinking behaviors and experience fewer alcohol-related negative consequences. When the sample was split by gender, however, a less clear pattern emerged. That is, for females, meaning was significantly correlated with alcohol use ( $r = -.14$ ;  $p = .047$ ) and approached significance with regard to problematic alcohol consumption ( $r_{pb} = -.12$ ;  $p = .081$ ). For males the correlation between meaning and alcohol use was not significant ( $r = -.18$ ;  $p = .146$ ). Likewise the correlation between meaning and problematic alcohol consumption was not significant ( $r_{pb} = -.16$ ;  $p = .219$ ). Therefore, although correlations were significant in the sample overall, when the dataset was split, it appears that the decrease in sample size may have rendered small overall associations (correlation coefficients:  $r = -.17$ ;  $r_{pb} = -.14$  respectively) statistically nonsignificant in some cases. It is important to note that statistical significance and coefficients are comparable to those reported in two studies reviewed previously (i.e., Harlow et al., 1986; Kinnier et al., 1994). That is, in the study conducted by Harlow and colleagues, the correlation coefficient for males was  $-.11$  (not significant) and for females was  $-.10$  (significant). In the study conducted by Kinnier and colleagues the correlation coefficient for males was  $-.18$  (not significant) and for females was  $-.28$  (significant). Unfortunately, comparisons between males and females are limited in the

current study due to fewer male participants. Regardless, there appears to be a complex relation among these variables that may be revealed with stricter methodological standards (see *Directions for research* section).

As predicted by the fifth hypothesis, perceived meaning scores correlated significantly and inversely with depression severity for the sample overall ( $r = -.39; p < .001$ ). Such results suggest that those perceiving their lives to be meaningful tend to report fewer depressive symptoms. Referring to the literature, it appears that this sample's correlation coefficient (overall) is similar compared to previous studies. For example, Steger Oishi, and Kashdan (2009) studied a sample of 18-24 year olds ( $N = 626$ ), finding that the Presence scale of the Meaning in Life Questionnaire correlated significantly with the CES-D ( $r = -.53; p < .001$ ). Further, Briggs and Shoffner (2006) studied a sample of older adolescents (age 18-19), finding that the 4-item meaning/purpose in life subscale of the Spirituality Assessment Scale was significantly correlated with the CES-D ( $r = -.37; p < .001$ ). However, broken down by gender, results from the current study are not consistent with previous findings in that the correlation remained significant for females ( $r = -.47; p < .001$ ) but not for males ( $r = -.10; p = .450$ ). In one such example utilizing the long form of the PIL, Kinnier and colleagues (1994) found a correlation of  $-.73$  ( $p < .001$ ) for males and  $-.63$  ( $p < .001$ ) for females in a sample including 161 adolescent high school students and psychiatric patients (mean age approximately 15 years). In another study employing the long form of the PIL, Harlow and colleagues (1986) reported a correlation of  $-.65$  ( $p < .001$ ) for males and  $-.64$  ( $p < .001$ ) for females in a sample of 722 young adults (mean age approximately 22 years). Compared to studies which have utilized the long form of the PIL, the PIL-SF would be expected to correlate less strongly since items directly pertaining to depressive symptoms were removed. However, the lack of association between meaning and

depression for males is unusual. Male participants in the current study reported a mean depression score of 12.3 ( $SD = 8$ ), a value which is substantially smaller than 21, the suggested cutoff for moderate depression in college students (Shean & Baldwin, 2008). Perhaps the lack of reported depressive symptoms, in males particularly, affected potential associations between depression and meaning.

As for the sixth hypothesis, results did not meet the expectation that depression scores would correlate significantly and positively with alcohol use ( $r = .09, p = .135$ ) and with the presence of problematic alcohol consumption ( $r_{pb} = .05, p = .440$ ) for the sample overall. As reviewed previously, although the majority of studies have found a significant positive association between depression and general alcohol use, exceptions showed that drinking alcohol can be correlated with lower levels of depressed mood in college samples (Cranford et al., 2009; Harrell & Karim, 2008; Hartley et al., 2004). For the current data, the trend was in the hypothesized direction but not significantly so. Additionally, previous studies have reported that depression is typically significantly correlated with alcohol-related problems, but not alcohol use alone (Camatta & Nagoshi, 1995; Martens et al., 2008; Nagoshi, 1999; Patock-Peckham et al., 1998). This was not the case with the current data since neither alcohol use nor problematic alcohol consumption was significantly correlated with depression. Correlations between depression and alcohol use were not significant when the sample was broken down by gender either. As reviewed previously, the literature was mixed with regard to gender differences in the association between depression and substance use; while the majority of studies found a positive association for both genders, there were some exceptions. That is, the current findings are consistent with studies reporting no significant association between depression and alcohol use among males (Harrell & Karim, 2008; Kinnier et al., 1994). Likewise, current findings are

consistent with the study conducted by Harlow and colleagues (1986) in which no significant association between the variables was reported among females. Taken as a whole, current results failed to support the hypothesis that depression and alcohol use/abuse were significantly associated. Perhaps there is something unique about the college environment that renders correlations between depression and alcohol use nonsignificant. That is, while depression may be related to increased alcohol consumption for high schoolers and adults, perhaps the college environment reinforces high levels of problematic drinking so as to minimize the contribution that depressive symptoms have on alcohol-related behaviors. If there is an association that was not adequately detected by the current method, it may have been due to inadequate power or the possibility that the current sample was not representative of college students in general (with regard to depressive symptoms, for example).

With regard to the final hypothesis, depression did not emerge as a significant predictor of alcohol use or problematic alcohol consumption whereas the contribution of the meaning variable was less conclusive. In the case of predicting alcohol consumption as a continuous variable, depression was not a significant predictor but the addition of meaning approached statistical significance. Regardless, an improvement of 1.3% is unlikely to be clinically significant. Adding the interaction term (gender \* meaning) actually caused the model to be nonsignificant, suggesting that in the current sample, there are not differential effects of meaning for males versus females in the prediction of alcohol use. In the case of predicting problematic alcohol consumption as a dichotomous variable, depression did not reliably increase the predictive power of the model. Further, although the model including gender, depression, and meaning was significant, this is unlikely to be clinically significant given such small effect sizes (Nagelkerke  $R^2 = .041$ ; Nagelkerke, 1991). Again, addition of the interaction term (gender \*

meaning) resulted in a marginally significant model, however the interaction term alone was not contributing significant predictive power. Taken together, in this sample of college students, depression did not appear to be a particularly important variable with regard to alcohol use. Results regarding the importance of perceived meaning were less conclusive – in some cases it appeared to be related to alcohol use, but the extent to which this variable is clinically useful remains to be determined.

### *Limitations*

The current study contains a number of limitations which warrant discussion, the first of which involves the restricted range on the measures employed. The dependent variable, alcohol use, was measured using a screening tool with a possible range of scores from 0 to 40. As such, the full complexity of alcohol use may not have been adequately tapped with this measure. The measure of perceived meaning and purpose was a 4-item short form of a widely researched measure, with scores ranging from 4 to 28. Scores on this measure were skewed such that scores were clustered nearer the maximum possible score. As such, the sample may not have reported a wide enough range of perceived meaning as evident by the scores reported, and thus meaning's associations with other variables may have been limited. The measure of depression that was utilized had a broader range of possible scores (0 to 60), however the mean score for the current sample was lower than that for other college and community samples. Again, this lack of variability may have limited possible associations among variables.

Another limitation involves issues with external validity. That is, the sample included primarily Caucasian females approximately 19 years old who were currently enrolled in a psychology class at The University of Mississippi. Since this sample is limited in terms of

diversity (age, gender, race/ethnicity, geographical region), generalizing these findings to other populations should be done only with due caution. The imbalance of males and females, in particular, was not ideal and may have limited results. Further, the representativeness of the current sample may have been restricted by the fact that a large proportion of the sample participated toward the end of the semester, resulting in an imbalanced distribution over the course of data collection and a potentially biased sample. For example, it is possible that those who participated nearer the beginning of the semester were more conscientious and thus paid closer attention to the questions and their own responses. Additionally, perhaps those who waited until the end of the semester to participate were experiencing less severe depressive symptoms as a group, potentially limiting the variance in depression scores and affecting the associations among depression and other variables. Overall, these potential sampling biases may have impacted results such that the obtained data are not a reflection of a representative college sample.

Additionally, although confidentiality was explained prior to each data collection session, participants may have felt concerned about anonymity given the content of the AUDIT in particular. The mean age of this sample was 19 years, which is below the legal drinking age. Thus, participants may have underreported their drinking habits. As a result, inaccurate reporting could have limited current findings.

Finally, because the current study employed a correlational design, causation cannot be inferred. For example, although perceived meaning was found to be significantly negatively related to alcohol use and problematic alcohol consumption, a correlational design does not imply that a lack of meaning causes one to engage in more problematic drinking behaviors; nor does it imply that experiencing alcohol-related problems causes a decreased sense of meaning in

life. In fact, it could be the case that another, related variable is a causative factor with regard to both meaning and alcohol use. The purpose of the current study was to determine the strength of associations among these variables, and therefore determining causality was outside its scope.

### *Directions for research*

Future research may focus on meaning, depression, and alcohol use in a more representative sample of college students, with a broader range of ages, a more balanced number of males and females, and include individuals from different areas across the country. For an even broader sample, it would be worthwhile to obtain data from students seeking services at university counseling centers who may present with higher depression, more frequent alcohol-related problems, and less perceived meaning in life. Further, adult community and clinical samples may be additional sources, perhaps including those residing in inpatient or rehabilitation facilities.

If the resulting correlations suggest potentially clinically significant associations among variables, more rigorous methodology would be warranted to determine if perceiving life as meaningful/possessing purposeful life goals may be a protective factor against problematic drinking behaviors. Research may incorporate measures which are less limited in range than those employed in the current study, and may also include assessment techniques beyond mere self-report, including informant-reports or behavioral indicators (e.g., volunteer activity as a purposeful goal) to more thoroughly measure these constructs. Additional regression analyses may be incorporated which include more predictor variables to account for variance in alcohol use scores. That is, in addition to examining the relative contributions of depression and perceived meaning, variables such as family history of substance use (Brown, Tate, Vik, Haas, &

Aarons, 1999) and peer influence (Talbot et al., 2008) may be incorporated to obtain a fuller representation of the variables involved, and to better inform future treatment efforts.

An example of a controlled experimental design would be to examine group differences in outcome and treatment satisfaction for separate treatment groups; that is, one group may receive treatment involving an existing efficacious treatment for alcohol abuse (treatment as usual) while a separate group may receive this treatment with a supplemental meaning-based component to determine if generating purposeful goals yields clinically significant improvement.

### *Conclusions*

The current study served to expand upon existing literature regarding the roles of perceived meaning and depression in college student alcohol use. Given the prevalence of problematic drinking by college students, it is an important area of study to determine which variables are most useful to target with regard to interventions. If future investigations solidify lack of meaning as an important predictor of problematic alcohol use, incorporating meaning-related interventions within treatment would be warranted. At this point, more research with strictly controlled experimental design is needed to determine the value of meaning-based interventions for alcohol abuse.

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## APPENDICES

Appendix A

Demographic Survey

Age: \_\_\_\_\_

Gender (please circle one):            Male            Female

Ethnic/Racial Background (please describe): \_\_\_\_\_

College Major: \_\_\_\_\_

College Minor: \_\_\_\_\_

Current GPA: \_\_\_\_\_

Classification (please circle one):

Freshman    Sophomore    Junior    Senior    Other \_\_\_\_\_

Comments: \_\_\_\_\_

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## Appendix B

### The Purpose in Life test – Short Form (PIL-SF)

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			(neutral)			very clear goals and aims

2. My personal existence is:

1	2	3	4	5	6	7
utterly meaningless without purpose			(neutral)			very purposeful and meaningful

3. In achieving life goals I have:

1	2	3	4	5	6	7
made no progress whatsoever			(neutral)			progressed to complete fulfillment

4. I have discovered:

1	2	3	4	5	6	7
no mission or purpose in life			(neutral)			clear-cut goals and a satisfying life purpose



## Appendix C

### The Center for Epidemiological Studies – Depression Scale (CES-D)

Using the scale below, indicate the number which best describes how often you felt or behaved this way – DURING THE PAST WEEK.

- 1 = Rarely or none of the time (less than 1 day)
- 2 = Some or a little of the time (1-2 days)
- 3 = Occasionally or a moderate amount of time (3-4 days)
- 4 = Most or all of the time (5-7 days)

#### **During the Past Week:**

- \_\_\_ 1. I was bothered by things that usually don't bother me.
- \_\_\_ 2. I did not feel like eating; my appetite was poor.
- \_\_\_ 3. I felt that I could not shake off the blues even with help from my family or friends.
- \_\_\_ 4. I felt that I was just as good as other people.
- \_\_\_ 5. I had trouble keeping my mind on what I was doing.
- \_\_\_ 6. I felt depressed.
- \_\_\_ 7. I felt that everything I did was an effort.
- \_\_\_ 8. I felt hopeful about the future.
- \_\_\_ 9. I thought my life had been a failure.
- \_\_\_ 10. I felt fearful.
- \_\_\_ 11. My sleep was restless.
- \_\_\_ 12. I was happy.
- \_\_\_ 13. I talked less than usual.
- \_\_\_ 14. I felt lonely.
- \_\_\_ 15. People were unfriendly.
- \_\_\_ 16. I enjoyed life.
- \_\_\_ 17. I had crying spells.
- \_\_\_ 18. I felt sad.
- \_\_\_ 19. I felt that people disliked me.
- \_\_\_ 20. I could not get "going."



## Appendix D

### Alcohol Use Disorders Identification Test (AUDIT)

Place an X in one box that best describes your answer to each question. Please refer to the “standard drink” chart when determining number of drinks.

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	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?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year

STANDARD DRINK EQUIVALENTS	APPROXIMATE NUMBER OF STANDARD DRINKS IN:
<b>BEER or COOLER</b>	
<p><b>12 oz.</b></p> 	<ul style="list-style-type: none"> <li>• 12 oz. = 1</li> <li>• 16 oz. = 1.3</li> <li>• 22 oz. = 2</li> <li>• 40 oz. = 3.3</li> </ul>
<b>MALT LIQUOR</b>	
<p><b>8-9 oz.</b></p> 	<ul style="list-style-type: none"> <li>• 12 oz. = 1.5</li> <li>• 16 oz. = 2</li> <li>• 22 oz. = 2.5</li> <li>• 40 oz. = 4.5</li> </ul>
<b>TABLE WINE</b>	
<p><b>5 oz.</b></p> 	<ul style="list-style-type: none"> <li>• a 25 oz. bottle = 5</li> </ul>
<b>80-proof SPIRITS (hard liquor)</b>	
<p><b>1.5 oz.</b></p> 	<ul style="list-style-type: none"> <li>• a mixed drink = 1 or more*</li> <li>• a pint (16 oz.) = 11</li> <li>• a fifth (25 oz.) = 17</li> </ul> <p>*Note: one mixed drink can contain from one to three or more standard drinks.</p>

## VITA

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### **Education:**

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### **Awards:**

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Diamond Scholar, merit-based scholarship, 2001-2003  
Hackman Scholar, merit-based award granted for research assistance, 2002  
John and Lillian Wolfe Graduate Student Achievement Award, 2011  
University of Mississippi Liberal Arts Graduate Student Achievement Award, 2011

### **Professional Experience:**

Research Assistant, Franklin & Marshall College, May – August 2002. Duties: research, data entry, statistical analysis, oral presentation of research study

Tutor, Lancaster, PA, June – December 2002. Duties: tutoring a child diagnosed with autism in behavioral skills; documentation/assessment and statistical analysis of progress; assisted with modification of program accordingly

Teaching Assistant, Franklin & Marshall College, September – December 2002. Duties: collaboration on course syllabus; preparation of class materials; preparation and administration of lectures; grading papers and exams; tutoring students in class material and writing skills

Research Assistant, University of Mississippi, August 2008 – May 2009. Duties: collecting and entering data; supervising undergraduate research team members; assisting with article reviews

Therapist, University of Mississippi Psychological Services Center, July 2009 – present. Duties: providing individual therapy to students and community members; participation in supervision team

Teaching Assistant, University of Mississippi, August 2009 – May 2010. Duties: preparing lecture slides and sample assessment reports; observing and providing feedback to

students regarding assessment administration performance; providing feedback to students regarding assessment reports; editing student psychometric review papers

Intern, North Mississippi Regional Center, June 2010 – present. Duties: conducting assessments and writing reports for Diagnostic Services department and Psychology department; consultation with clients and families including education on diagnoses and explanation of service eligibility; co-lead group therapy; providing individual therapy; conducting functional assessments for problematic client behavior and writing behavior programs to address these problems; managing data collection and data entry for research project

### **Peer-reviewed Publications:**

Penn, M. L., & **Wilson, L. A.** (2003). Mind, Medicine, and Metaphysics: Reflections on the Reclamation of the Human Spirit. *American Journal of Psychotherapy*, 57, 18-31.

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### **Other Publications:**

**Schnitzer, L. W.** (2009). Movies of interest to logotherapists. *The International Forum for Logotherapy*, 32(1), 50-52.

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### **Presentations:**

Young, J. N., Luebbe, A., Trent, L. R., **Schnitzer, L. W.** (2009, March). Motivational Interviewing: The basics. Motivational Interviewing workshop, Jackson, MS.

**Schnitzer, L. W.**, Schulenberg, S. E., Winters, M. R., & Hutzell, R. R. (2009, June). Meaning-centered couples therapy: Logotherapy and intimate relationships. Seventeenth World Congress on Viktor Frankl's Logotherapy, Dallas, TX.

**Schnitzer, L. W.**, Luchkiw, T. K., & Schulenberg, S. E. (2009, June). The Diving Bell and the Butterfly: Viewing and discussing a movie of interest to logotherapists. Seventeenth World Congress on Viktor Frankl's Logotherapy, Dallas, TX.

**Schnitzer, L. W.**, Schulenberg, S. E., & Buchanan, E. M. (2010, August). The Purpose in Life test – Short Form (PIL-SF): Development and psychometric support. American Psychological Association 118<sup>th</sup> Annual Convention, San Diego, CA.

Berkout, O. V., **Schnitzer, L. W.**, Heiden, L., Hight, T. L., Damon, J. D., Young, J. N. (2010, November). Relationship between loneliness and psychopathology in a large sample of children and adolescents. Association for Behavioral and Cognitive Therapies 44<sup>th</sup> Annual Convention, San Francisco, CA.

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