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The Relationship between College Students' Purpose in Life and Risk-Taking Behavior

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THE RELATIONSHIP BETWEEN COLLEGE STUDENTS' PURPOSE IN LIFE AND RISK-TAKING BEHAVIOR

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by

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ABSTRACT

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The relationship between college students' sense of purpose in life and their self-reported risky substance use and sexual behavior was investigated. Participants from a northwestern university (N = 174) answered questions online from questionnaires measuring meaning in life, alcohol use, substance use, sexual risk behavior, and social desirability. A MANCOVA analysis was conducted. The results demonstrated no statistically significant effects. Strengths and limitations of the study as well as directions for future research and therapeutic interventions are discussed.

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CHAPTER I

INTRODUCTION

Identity development and the search for one's meaning in life are topics that generally arise in early adulthood or when young adults are attending college. Literature published by the developmental psychologist, Erikson (1968), outlines the search for personal meaning and identity in adolescents and young adults. According to Erikson, the period of adolescence is classified as the time in life between childhood and adulthood, specifically between early school life and the time a person develops specialized work. The time period of adolescence is crucial to identity development, and, according to Bronk (2014), it is not until this time in life that an individual seriously considers and commits to a life purpose.

Moreover, adolescence and emerging adulthood are when identity formation takes precedence (Erickson, 1968) and within this formation adolescents make sense of their own purpose in life. According to Erickson's definition of adolescence, college students classify as being in the adolescent stage of life because they are working towards their own identity in life and have yet to begin their specialized work.

Additionally, Frankl (1959) proposed that if one has a purpose in life, then it helps to protect against negative states and contributes to general well-being (Bronk, 2014). Purpose in life, then, can be a protective factor for health and promote overall good health. College students, in particular, are generally at the time in their lives where they tend to engage in risk-taking behaviors, many of which can be harmful.

In the over 40 years since Erickson's original publication and in the over 60 years since Frankl's publication, many research studies and articles have been published on the

topics of identity development, sense of purpose of life, and harmful risk-taking in college-aged students. Even though these areas appear to remain great topics of interest to psychological research, it is unclear the extent of the relationship between purpose in life and risky behaviors in young adults, particularly in college students.

CHAPTER II

LITERATURE OVERVIEW

Purpose in Life

According to a dictionary of psychological terms published by the American Psychological Association, one's *purpose in life* is defined as an internal sense of a goal in life or existence (VandenBos & American Psychological Association, 2007). Frankl developed *logotherapy* as an operationalization of a person's search for purpose or meaning (Frankl, 1959). Frankl described the term logotherapy as being derived from the Greek word *logos* for meaning and stated that logotherapy "focuses on the meaning of human existence as well as on man's search for such a meaning" (Frankl, 1959, p. 98-99). Since Frankl's original ideas about purpose in life were proposed in the mid-twentieth century, there has been much research based on logotherapy in order to look at individuals' meaning or purpose in life. Namely, there has been research which supports that purpose in life promotes overall health. One such study, a literature review by McKnight and Kashdan (2009), summarized findings of purpose in life from social, behavioral, biological, and cognitive articles. The authors defined purpose as a "central self-organizing life aim that organizes and stimulates goals, manages behaviors, and provides a sense of meaning." (McKnight & Kashdan, 2009, p. 242). Purpose was differentiated from religiosity and spirituality because one does not necessarily need to hold a religious faith or spiritual belief to have a sense of purpose in his or her life. One of the main findings summarized in this article is that the literature supports positive consequences of living with purpose. The authors found that purpose has direct influences on physical and mental health outcomes. The benefits of physical health

include improved immune system functioning, more physical activity, and overall healthier lifestyles. The main benefit on mental health was that purpose can act as a protective factor against negative circumstances which lead to mental health concerns.

Moreover, a study conducted by Kim, Stretcher, and Ryff (2014) investigated whether individuals with a higher level of purpose in life would be more proactive about their health by using preventative health services. A total of 7168 adults participated in this study. The results found that for those who had a higher score of purpose in life on the Purpose in Life test (PIL), they were more likely to get a cholesterol test or colonoscopy. Additionally, female participants with a higher score of purpose in life were more likely to get a mammogram or pap smear and male participants with a higher purpose in life score were more likely to get a prostate examination. The results from this study indicate that those with a clear sense of purpose in their life are more likely to be proactive about their health, which can prevent serious illnesses.

Additionally, a recent study conducted by Steger, Fitch-Martin, Donnelly, and Rickard (2015) found that meaning in life can promote positive health outcomes in college students. In this study, 571 American college students were measured via their health orientation, meaning in life, health symptoms, substance abuse, and condom attitudes. The results of the study showed that the college students who reported higher meaning in life on the Meaning In Life Questionnaire (MLQ) reported better overall physical health and reported engaging in fewer harmful health-risking behaviors. Results indicated that proactive health orientation and health information discounting accounted for some of the relationships between meaning in life and good overall physical health as well as health risking behaviors. The results from this study suggest that meaning in life

can be a protective factor against negative health outcomes and harmful risky behaviors in a college student population.

Furthermore, Welkener and Bowsher (2012) specifically investigated how college students make sense of their own meaning and purpose. Originally, Welkener and Bowsher were going to use the terms *spirituality, faith,* and *religion,* but broadened the terms to *meaning* and *purpose* because how people make sense of meaning and purpose is not always in terms of spirituality. This study was conducted through an inductive and emergent approach which focused on the stories of students. The 11 students who participated were college students in their junior and senior years. The participants were asked to define meaning and purpose in terms of their own perspectives and lives. The results of the study demonstrated that students typically conceptualize meaning and purpose as a primary motivation that is closely related with their core identity and values. Furthermore, the authors discuss that this indicates that upper-level college students start to rely more on their own sense of personalized meaning rather than outside sources for answers. Further research on whether personalized meaning and purpose in college students protect against crisis and harmful risk behaviors would be the next topic for research in this area to address.

Two further notable research studies have been conducted looking specifically at college students' sense of purpose, or meaning, in life in the last decade. DeWitz, Woolsey, and Walsh (2009) investigated Frankl's purpose in life construct and Bandura's theory of self-efficacy, defined as the level of confidence an individual has in his or her ability to successfully complete a task. The authors investigated this in 344 undergraduate college students in an introductory psychology course. The student

participants were made up of 68% female and 32% male participants, with a mean age of 19 years old. In order to measure purpose of life and self-efficacy, the participants answered items on the following self-report questionnaires: The Purpose-In-Life Test Part A, the College Self-Efficacy Inventory, the Scale of Perceived Social Self-Efficacy, the General Self-Efficacy Subscale of the Self-Efficacy Scale, and the Marlowe-Crowne Social Desirability Scale. Three forms of self-efficacy were investigated: college self-efficacy, social self-efficacy, and general (or overall) self-efficacy. Results of the study indicated that general self-efficacy in college students was the most significant predictor ($R = .638$) of purpose signified by the scores on the Purpose of Life Test. Therefore, the study suggests that college students who have higher self-efficacy have a higher sense of purpose in life. The authors stated that implications of this study indicate that improving self-efficacy or purpose in life in college students could positively influence college student retention.

Harmful Risk-Taking Behaviors in College Students

Several completed studies focus on various risk-taking behaviors in college students. *Risk-taking* is defined as engaging in a pattern of behaviors that are highly dangerous or unnecessarily risky (VandenBos & American Psychological Association, 2007). Harmful risk-taking behavior is often seen in alcohol use, substance use, and risky sexual behaviors (VandenBos & American Psychological Association, 2007). In a review article of the published literature, Cooper (2002), sought to evaluate the established associations between alcohol use and risky sexual behavior in college students. Cooper found that the literature on the topic supports that drinking is strongly correlated with college students' decisions to have sex. However, the literature review

indicated that risky sexual behavior is indiscriminate and not necessarily influenced by alcohol use. Moreover, various forms of risky sexual behavior, such as having sex with multiple partners, were inconsistently related to having sex without using protection such as a condom. This article supports the idea that there is a relationship between alcohol use and risky sexual behavior in college students, but the relationship is unclear. Although this article does not mention meaning or purpose in life, it is possible that this could be a factor which influences risky sexual behavior and risky alcohol use.

Additionally, more recent research in the area of risk-taking in college students suggests that this is a topic of growing interest. Recently, a study conducted by Mohammadpoorasl, Ghahramanloo, and Allahverdipour (2013) on risk-taking behaviors in 1837 college students in Iran endeavored to clarify the relationship between demographic characteristics, religious beliefs, and parental support in college students on the basis of subgroups of risk-taking behaviors. Results from the study found that higher levels of religiosity and familial support could prevent risk-taking behaviors in college students. Similarly, an article by Pompeo, Kooyman, and Pierce (2014) examined the psychological development and societal factors on risky behaviors such as alcohol consumption and sexual risk-taking in college-aged women. The authors reported that in accordance with existing literature, college women who have stronger interpersonal relationships show fewer signs of psychological distress. Thus, the strength of relationships can be a predictor of the risk of psychological distress. Additionally, college-aged women were found to be engaging in riskier sexual and alcohol use behaviors due to the perception that their peers are engaging in more of these behaviors. Moreover, when college-aged women drink more heavily they receive more positive

social acceptance from their male peers. These two articles emphasize the recent interest in risk-taking, particularly harmful, in college-aged students in the psychology research field.

Purpose in Life and Harmful Risky Behavior

In the existing literature, an individual's sense of personal meaning was shown to be negatively correlated with harmful risky behavior. For instance, one study conducted by Wood and Herbert (2005), with a population of 606 undergraduate students, found that those who had higher spiritual meaning scores on Pargament's Spiritual Meaning Scale (Pargament, 1999) were less likely to binge drink alcohol and smoke marijuana. These findings suggest that students who have a clearly defined sense of personal spiritual meaning are less likely to participate in risky alcohol and drug use. Therefore, it is plausible that meaning in life could have a similar relationship to risky behavior as does spiritual meaning.

Consistent with Wood and Herbert's findings, a cross-sectional study conducted by Meisel and Palfai (2015) examined whether a sense of meaning, conceptualized by long-term goals, protects against hazardous drinking in college students. A total of 156 college students between the ages of 18 and 24 who had consumed alcohol in the previous 30 days answered questions on a personal goal assessment, the Drinking Norms Rating Form, and a modified version of the Daily Drinking Questionnaire. Results of the study indicate that high levels of meaning on the goal assessment moderated heavy episodic drinking ($\beta = 0.17$) and alcohol quantity ($\beta = 0.27$). Additionally, a significant interaction was found between goal meaning and direct offers of alcohol ($\beta=$

-0.17). This indicates that direct offers of alcohol predicted heavy drinking episodes in both those with high and low goal meaning. Overall, the results of the study demonstrated that goal meaning acts as a moderator between active and passive social influences and hazardous drinking. Even though goal meaning is not the same as meaning in life, they are similar in that they both can be personal motivating factors. It can be inferred from these results that meaning in life could potentially moderate risky alcohol use.

Along with this, several studies in the literature link an increase in substance use with the decrease in purpose in life or meaning in life. One particular study, conducted by Padleford (1974), looked at the relationship between drug use and purpose in life in a high school student population. A total of 416 tenth grade students answered questions on the Purpose in Life test (PIL) and a questionnaire about drug involvement. Results from the questionnaires showed a significant negative relationship between purpose in life and drug use. Thus, drug use was found to be significantly greater for those who had a low purpose in life score compared with those who had a high purpose in life score.

In another study, conducted by Waisberg and Porter (1994), purpose in life was examined before and after completing one of two alcohol dependence treatment programs in Ontario, Canada. In this study, 131 individuals either beginning a 21 or 28-day treatment program or awaiting treatment (control) participated in the study. Individuals in the treatment groups took the PIL test before starting treatment, at the end of treatment, and three months after completing treatment. Individuals in the control group who were awaiting treatment took the PIL test at the time of consenting to participate in the study and again three weeks later. There were two different treatment programs in two

different facilities. One treatment program emphasized learning coping skills and strategies while placing little emphasis on spirituality. Conversely, the other treatment program placed greater emphasis on learning spiritual values and little emphasis on acquiring coping skills. Key findings of this study were numerous. One finding was that for individuals in the treatment groups, the average PIL score was significantly lower at the beginning of treatment compared to the end of treatment, where it was then in the normal range. Another finding was that the PIL score at the end of treatment predicted changes in health and intimate relationships reported at the three-month follow-up. Additionally, the PIL score at the end of treatment also predicted drug and alcohol use at the three-month follow-up. Overall, results from this study demonstrate that purpose in life is reduced for alcohol dependent users and purpose in life can predict later drug or alcohol use as well as health and relationship functioning.

In addition to Waisberg and Porter's findings, similar results were found in a study by Noblejas de la Flor (1997) which looked at meaning and existential frustration in individuals in a drug abuse rehabilitation program in Spain. In this study, 125 individuals participated in a drug abuse rehabilitation program and answered questions on the PIL test and a test that assesses existential frustration (or the lack of meaning), the LOGO test. Results of the study indicated that drug addiction was positively linked to existential frustration, and meaning in life increased in individuals after removing the drug abuse problem.

More recently, Martin, MacKinnon, Johnson, and Rohsenow (2011) examined whether purpose in life before completing substance abuse treatment predicted outcome after completion of the treatment program. In this study, 154 participants with cocaine

dependence completed the Revised Purpose in Life test before completing a 30-day inner city substance abuse treatment program. Findings of the study indicated that those who demonstrated a higher score on the Revised Purpose in Life test before substance abuse treatment had a better outcome for relapse and frequency of cocaine and alcohol use after completing treatment. Thus, the findings of the study imply that having a greater sense of purpose in life may help with substance use treatment and outcomes in cocaine users.

Research in other areas of risk-taking behavior and purpose of life has also been conducted with college students. For example, Kress, Newgent, Whitlock, and Mease (2015) investigated whether spirituality and religiosity, life satisfaction, and meaning in life protected against self-injury. In this large study, a total of 14,385 college students ranging in age from 18 to 61 from eight universities answered self-report questions on the Non-Suicidal Self-Injury Assessment Tool, the Multidimensional Measurement of Religiousness/Spirituality, the Satisfaction with Life Scale, and the Meaning in Life Questionnaire. Results of the study found that spirituality/religiosity ($\beta = -0.2$), life satisfaction ($\beta = -0.6$), and found meaning in life ($\beta = -0.3$), were negatively associated with nonsuicidal self-injury, suggesting that they can be protective factors against self-injury in college students. Overall, these three studies by Wood and Herbert (2005), Meisel and Palfai (2015), and Kress, Newgent, Whitlock, and Mease (2015), demonstrate that there is a relationship between the level of meaning or purpose in life and certain risk-taking behaviors in college students.

Risky behavior can be thought of in relation to impulsivity since throughout the literature impulsivity is related to risk-taking behavior. *Impulsivity* is defined as displaying behavior that has little or no forethought or consideration of the consequences

(VandenBos & American Psychological Association, 2007). Impulsivity can lead to risk-taking behavior because of the lack of forethought or contemplation of possible negative consequences. Two notable research studies have looked specifically at the relationship between impulsivity and purpose of life. For instance, findings from an experiment conducted by Burrow and Spreng (2016) in a population of 503 community adults suggest an association between purpose in life and impulsivity, where a greater sense of purpose in life is associated with lower impulsivity in a delay-discounting task, suggesting that it protects against impulsive decisions. Factors of personality, meaning, and purpose in life were assessed through self-report surveys. Impulsive behaviors were examined in a delay-discounting task, a measure of impulsivity where participants were given two choices of an amount of money that they could either get the day of the study or at a later point in time. The participants were presented options of either receiving a smaller amount that day or a larger amount at a later point in time. There were six delay trials in total, at one month, at six months, at one year, at three years, at five years, and at 10 years. If a participant chose the delayed amount (the amount given later in time) then the immediate amount was increased. These findings suggest that the greater personal sense of purpose that people showed, the less behavioral impulsivity they demonstrated in regards to delay discounting of small rewards and large rewards in the delay discounting task.

The Purpose of the Present Study

The primary purpose of the current study is to specifically examine the relationship between college students' sense of purpose in life and their self-reported behaviors concerning risky substance use and sexual behavior. Throughout the literature,

harmful risky behavior has been studied in relation to meaning or purpose in life. However, no one study has investigated the association between meaning or purpose in life and the harmful risky behaviors that are prevalent among college students: alcohol use, substance use, and sexual behavior. Additionally, the constructs chosen in past literature concerning harmful risky behavior vary between the studies. Thus, the present study seeks to investigate the association between meaning or purpose in life and the harmful risky behaviors that are prevalent among college students by looking at alcohol use, substance use, and sexual behavior. The hypothesis of this study is that those who have a higher sense of their purpose of life will report fewer harmful risky behaviors, compared with those who report a lower personal sense of their purpose in life.

CHAPTER III

METHOD

The present study is a one-way quasi-experimental design. The independent variable is meaning in life score on the Meaning in Life Questionnaire (MLQ). The dependent variables are risk-taking behavior, classified as alcohol use score, drug use score, and sexual risk score. The covariate is social desirability.

Participants

All participants were recruited through the psychology department's online research database, the Sona research study system. Participants were 174 college students at a public university in the northwestern United States. Initially, 180 participants agreed to participate in the study, however, four participants did not make any responses on the questionnaires, one participant answered questions sporadically and did not complete some of the questionnaires resulting in vastly incomplete data, and one participant only answered questions on the demographics form. Out of the 174 retained participants' data, the reported age ranged from 18 to 48 (M = 21.21, SD = 5.08). The majority of participants identified as female (74%), and the rest identified as male (26%). Participants' self-identified ethnicity and race as a part of the demographics form. Participants identified as White (67.2%), Hispanic or Latino (14.4%), as more than one race (9.2%), Asian (4%), Black or African American (2.3%), Pacific Islander (1.1%), Native American (1.1%), or unknown (0.6%). Participants' class standing ranged from freshman (33%), sophomore (17.8%), junior (28.2%), senior (17.2%), graduate student (2.3%), and postbaccalaureate (1.1%).

Materials

An information page (Appendix A) was provided to participants in order to inform them about the purpose of the study, procedures, risks, and benefits of participating, and the contact information of the researchers. A demographics form was provided to participants in order to collect gender, age, race, ethnicity, and class standing of the participants.

Purpose in life, defined as an internal sense of a goal in life or existence (VandenBos & American Psychological Association, 2007), was measured through the use of the MLQ (Steger, Frazier, Oishi, & Kaler, 2006). The MLQ is a 10 item self-report questionnaire developed to assess participants' searching and presence of meaning in their life (Appendix C). The MLQ measures meaning and purpose in life through two subscales: the searching for meaning subscale and a presence of meaning subscale. Each item on the questionnaire presents a statement about meaning in life. Item answers are scored on a seven-point Likert scale ranging from *absolutely untrue* to *absolutely true* in level of agreement with each statement. The test-retest reliability of the MLQ was assessed with 82 male and female undergraduate students over the course of a year (Steger & Kadashan, 2007). Stability was found with both the MLQ presence subscale, ($r = .41$, $p < .001$), and the MLQ searching subscale, ($r = .50$, $p < .001$). Reliability was assessed in comparison with the Satisfaction With Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985) and was found to be reliable ($r = .40$, $p < .001$).

When scoring the MLQ in the present study, the numerical answer of each item was tallied. For the presence subscale items one, four, five, six, and nine were reverse scored. For the searching subscale items two, three, seven, eight, and 10 were reverse

scored. Total scores indicate that if the participant scored above 24 on both the presence and searching subscales then the participant has valued meaning and purpose and is still exploring this meaning and purpose in his or her life. A score of above 24 on the presence subscale and below 24 on the searching subscale indicates that the participant has valued meaning and purpose but not actively seeking or exploring meaning and purpose. A score of below 24 on the presence subscale but above 24 on the searching subscale indicates that the participant has not established valued meaning and purpose but is searching for meaning in his or her life. Lastly, a score of below 24 on both the presence and searching subscales indicates that the participant does not have valued purpose or meaning and is also not actively searching or seeking meaning in his or her life. For the purpose of this study, only the scores on the presence subscale were analyzed because the scope of this study is to measure the difference in an established meaning or or purpose in life instead of the act of searching for meaning or purpose in life. Participants who scored 24 and above on the presence subscale and either above or below 24 on the searching subscale were classified as having valued meaning and purpose in life. Conversely, participants who scored 24 or below on the presence subscale and either above or below 24 on the searching subscale were classified as not having valued meaning and purpose in life. The purpose of this study is measuring the existence of meaning or purpose in one's life rather than the act of searching for meaning. Therefore, the score on the searching subscale was not relevant for the purpose of this study.

Harmful risk-taking behavior, defined as engaging in a pattern of behaviors that are highly dangerous or unnecessarily risky (VandenBos & American Psychological

Association, 2007), was operationalized through measuring risky alcohol use, risky drug use, and risky sexual behavior. Alcohol use was measured through the use of the Alcohol Use Disorders Identification Test: Self-Report Version (AUDIT), a 10-item self-report alcohol risk assessment (Appendix D). The AUDIT was originally developed as the AUDIT Core, a 150-item assessment that was taken by 1888 individuals attending primary health care facilities (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Out of the AUDIT Core, 10 items were selected to assess consumption of alcohol, drinking behavior, and alcohol-related health concerns. Construct, concurrent, and discriminant validities of the 10-item AUDIT were assessed with 65 known alcoholics and 187 general medical patients (Bohn, Babor, & Kranzler, 1995). The AUDIT was compared with the MAST (Michigan Alcohol Screening Test) and the MacAndrews scales, and significant concurrent validities were found (r = .31 to r = .89). Additionally, a significant difference between nondrinkers and harmful drinkers was found through an analysis of discriminant validity.

On the AUDIT questionnaire, participants answered questions on a 5-point Likert scale, which ranged from zero to four. The total score was tallied, with the possible maximum score of 40. According to the AUDIT manual if a male participant received a score of eight or above, the participant was considered to be at risk for alcohol abuse. If a female participant received a score of seven or above then the participant was considered to be at risk for alcohol abuse. Scores of eight and below for male participants and seven and below for female participants were considered to be not at risk for alcohol abuse. Therefore, in this study, a score of eight or above for male participants and seven or

above for female participants was considered to be risky alcohol use and a score of below eight for males and below seven for females was considered to be not risky alcohol use.

Risky drug use, not including alcohol use, was measured through the use of the Drug Abuse Questionnaire (DAST-20) (Appendix E). The DAST-20 is a 20-item measurement that assesses the amount and extent of an individuals' drug use and involvement apart from alcohol use. The DAST-20 was originally developed as a 28-item self-report questionnaire. Eight items were eventually removed from the original questionnaire, resulting in the 20-item subset (Skinner, 1982). Reliability and validity data were gathered mostly on studies of the original 28-item DAST, but the original report by Skinner (1982) also included the 20 item subset. Skinner's report found that the 28-item and the 20-item versions were strongly correlated (r = .99). Moreover, Skinner (1982) found high internal consistency estimates for both versions. For instance, in a population sample of alcohol and drug users, Cronbach alpha estimates were .92 for the 28-item DAST and .95 for the DAST-20. Validity information for the original 28-item DAST were also gathered. Correlations between the total score and frequency of use for specific drugs were: cannabis (r = .55), barbiturates (r = .47), amphetamines (r = .36), non-heroin opiate (r = .35).

The DAST-20 consists of 20 yes/no questions about drug use. Participants responded to the questions and the responses were coded zero for an answer of *no* and one for an answer of *yes* except for questions four and five which were reverse scored. The coded responses were then tallied. Scoring for the DAST-20 is on a unilateral scale, so the minimum score is zero and the maximum score is 20. A score of zero indicates no involvement with drugs. A score of six or higher is considered to an indication of drug

involvement and according to Skinner can be used for case finding purposes. A score of 16 or higher is considered to indicate severe drug abuse and dependence. There are no differences in risky behavior cut-off scores based on the gender of the test taker. For the purposes of this study a score of six or higher indicated risky drug use for all participants.

Risky sexual behavior was measured through the use of the Sexual Risk Survey (SRS) (Appendix F). The SRS is a 23-item self-report questionnaire designed to measure sexual risk behavior in college students and contains five subscales: sexual risk-taking with uncommitted partners, risky sex acts, impulsive sexual behaviors, intent to engage in risky sexual behaviors, and risky anal sex acts (Turchik & Garske, 2009).

The questions were framed in a manner that prompted the participant to select a numerical response. An example of a question used is "how many partners have you engaged in sexual behavior with but not had sex with?" Scoring was conducted on a four-point scale with answer categories grouped and numerically coded. Scores for the responses were selected in concurrence with the scoring in the confirmatory validation study of the SRS by Turchik, Walsh, and Marcus (2015). For example, item responses were coded as zero for no partners, one for one to two partners, three for five to nine partners, and four for 10 or more partners. The coded responses were totaled based on each of the five subscales. The higher the total number, the higher the sexual risk of the participants.

The SRS was initially tested with 613 male and female undergraduate college students and was found to have high internal consistency and test-retest reliability (Turchik & Garske, 2009). The original SRS was comprised of a total of 37 questions taken from several different sexual behavior surveys. After completion and analysis, a

total number of 23 questions remained on the survey. The internal consistency of the total SRS which included the 23 items was .88. For the sexual risk-taking with uncommitted subscale, Cronbach's alpha was .88, for the risky sex acts subscale, Cronbach's alpha was .80, for the impulsive sexual behaviors subscale, Cronbach's alpha was .78, for the intent to engage in risky sexual behaviors subscale, Cronbach's alpha was .89, and Cronbach's alpha was .61 for the risky anal sex acts subscale. Test-retest reliability was measured after two weeks and was .93 for the total risk survey. Convergent validity was found between the total SRS score and the following scales within the instrument: sexual inhibition -.31 (men) and -.20 (women), sexual excitation .22 (men) and .31 (women), impulsive sensation seeking .29, substance use .25, and sexual desire .32.

Due to the sensitive nature of the items on the questionnaires, social desirability data were also gathered. Social desirability was measured through the Rand Corporation's Socially Desirable Response Set Five-Item Survey (SDRS-5) (Appendix G). The SDRS-5 is a 5-item social desirability measurement for which its internal consistency was assessed in two populations of 614 outpatients in a medical setting and 3053 outpatients in mental health and medical settings (Hays, Hayashi, & Stewart, 1989). Results included a Cronbach alpha reliability estimate of 0.66 for internal consistency. Test-retest reliability was also investigated and results found that in a population of 75 older adults, test-retest reliability after one month was 0.75.

Item responses on the SDRS-5 are on a 5-point Likert scale, with the answers options as *definitely true*, *mostly true*, *don't know*, *mostly false*, and *definitely false*. Participants were directed to select which answer indicates the level of agreement each

statement was for them. Individual items received a score of either one or zero. A score of one indicates an answer in direction of an extreme social desirability response. All other items are given a score of zero. The scores of answers range from zero to five. Any score above zero was considered at risk for social desirability.

After participants completed the SDRS-5, participants were shown a debriefing and referral page (Appendix H). The debriefing and referral page provided information about why the study was conducted, how the data was used, and referral services in case the participant had concerns about their answers on the questionnaires or experienced feelings of distress. At the end of this page, the participants were thanked for their participation and this marked the end of the study procedures.

Design and Procedure

Recruitment for the study and study procedures took place online. Over the course of three academic quarters, participants were recruited from the online Sona research study system and were provided with a description of the study. The online Sona research study system is available to all students taking any level of psychology course. On the study description page in Sona, participants were directed to click on a uniform resource locator (URL), which linked to the study page powered by Qualtrics. All participants were provided with an information page and were asked to clink an "I agree" button if they chose to participate in the study. Participants were reminded on the information page that they may withdraw from the study at any time without penalty. After clicking the "I agree button" on the information page, participants were asked to complete a demographics form. After the demographics form was completed, the participants then completed the MLQ, the AUDIT, the DAST-20, and the SRS

measurements. Instructions on how to complete the questionnaires were provided on each of the measurements. The order of presentation of the measurements was counterbalanced for each participant. After the participants completed the four measurements, they completed the SDRS-5 measurement. Once the SDRS-5 form was completed, the participants were given a debriefing form including referral information in case they became aware of significant risky behaviors. On the debriefing form participants were also thanked for their participation. Students were offered one and one half extra credit points for their participation as compensation for their time.

Data Analyses

Cleaning and examining. After data were collected, the results of the the MLQ, the AUDIT, the DAST-20, the SRS, and the SDRS-5 measurements were coded, scored, and tallied according to their respective scoring protocols. Data were cleaned by first examining any text responses participants entered for the questions that allowed a text response and assigning a numerical code. For example, on the demographics questionnaire if someone entered an answer such as "less than one year" to the question asking about the number of years in college, a numerical code of zero was assigned. Then, any missing data was identified and given the numerical code of 999 to indicate a missing response. A total of six participants' data was removed due to either no answers provided or too few answers for the data to be analyzed.

The remaining data were split into a *risky* group and a *not risky* group based on the scores on the AUDIT and the DAST-20. If participants scored at or above the cut-off scores on either the AUDIT or the DAST-20 then they were considered risky. If participants scored below the cut-off scores for the AUDIT and the DAST-20 then they

were considered not risky. Since the SRS does not have a cut-off score indicating risk level for the data, any degree of SRS scores of the participants was included in each group.

Analysis. Outliers and assumptions were tested on the data. Outliers were identified for the AUDIT score, DAST-20 score, SRS score, and SDRS-5 score by using the *explore* function in SPSS and looking at the extreme values that appeared outside the box plot for each of the measurements. Descriptive data were generated and the data were screened for normality using skewness and kurtosis. Normality was also tested by looking at Kolmogorov-Smirnov and Shapiro-Wilk tests as well as histograms, stem and leaf plots, and box plots. Scatter plots were generated in order to look at the linearity between the dependent variables and the covariate. In order to test homogeneity of variance and covariance, a preliminary custom MANCOVA was run. Box's test of equality of covariance matrices was used to assess homogeneity of variance-covariance matrices. Wilk's Lambda was used as a multivariate F to identify a main effect of the linear combination of the dependent variables. A test of between-subjects effects was used to determine whether or not there was an interaction effect between the MLQ presence score and the covariate, SDRS-5 score. Homogeneity of variance was screened by using the Levene's test. Outliers were removed from the data before the final analysis.

A one-way multivariate analysis of covariance (MANCOVA) was conducted in order to investigate the potential effect of meaning in life on risk-taking behavior, as operationalized by the three questionnaires which evaluated risky behavior, the AUDIT, DAST-20, and SRS. A MANCOVA test was chosen due to having several

measurements testing a unified theme of risky behavior: risky alcohol use, risky substance use, and risky sexual behavior. The independent variable was MLQ presence score. The dependent variables were AUDIT risk level, DAST-20 risk level, and the SRS. The SDRS-5 score was the covariate. Since the SDRS-5 measured the level of social desirability instead of risky behavior, it was included as a covariate in the MANCOVA analysis to see if there was a potential affect of social desirability on reported risky behavior.

CHAPTER IV

RESULTS

The present study was conducted in order to investigate the relationship between college students' sense of purpose in life and their self-reported behaviors concerning risky alcohol use, substance use, and sexual behavior. Analysis of the present study focused on the relationship of the independent variable (MLQ presence score) with the dependent variables (AUDIT score, DAST-20 score, and SRS score). The covariate (SDRS-5) was also used in order to investigate possible effects on the dependent variables. A one-way between subjects MANCOVA was performed using SPSS. Data were split into two groups: the risky group and the not risky group. Demographics breakdown for age, gender, race/ethnicity, years in college, and class standing of the two groups can be found in Table 1. Tests of normality were shown to have a value of .000 according to the Kolmogorov-Smirnov and Shapiro-Wilk tests for the risky group across the AUDIT, DAST-20, SRS, and SDRS-5 tests. For the not risky group, the AUDIT had a normality value of .001 for the AUDIT, .000 for the DAST-20, .013 for the SRS, and .000 for the SRSS-5 according to the Kolmogorov-Smirnov test of normality. According to the Shapiro-Wilk test, the AUDIT had a value of .016, the DAST a value of .000, the SRS a value of .002, and the SDRS-5 a value of .000. In the risky group, distribution was found to be in the acceptable range across the dependent variables, the AUDIT, DAST-20, SRS, and SDRS-5 scores. In the not risky group, distribution was found to be normal for the AUDIT scores and leaned towards skewed for the DAST-20, SRS, and SDRS-5 scores. Linearity was tested by plotting scatterplot matrixes and examining them in order to ensure that there was a linear relationship between the dependent variables and the

Table 1

Demographics Across Not Risky and Risky Groups

		Not Risky					Risky				
		n	Percent	Range	M	SD	n	Percent	Range	M	SD
Age				18-48	21.01	5.39			18-31	20.64	2.69
	18	27	29.0				11	18.3			
	19	26	28.0				11	18.3			
	20	13	14.0				11	18.3			
	21	6	6.5				13	21.7			
	22	6	6.5				6	10.0			
	23	4	4.3				2	3.3			
	24	1	1.1				0				
	25	1	1.1				0				
	26	1	1.1				1	1.7			
	27	2	2.2				1	1.7			
	28	0					2	3.3			
	29	1	1.1				0				
	31	0					1	1.7			
	38	2	2.2				0				
	41	2	2.2				0				

Table 1 (Continued)

		Not Risky					Risky				
		n	Percent	Range	M	SD	n	Percent	Range	M	SD
	48	1	1.1				0				
	Unknown	0					1	1.7			
Gender	Male	25	26.9				16	26.7			
	Female	68	73.1				44	73.3			
Race/Ethnicity	White	58	62.4				46	76.7			
	Hispanic/Latino	14	15.1				9	15.0			
	Asian	6	6.5				1	1.7			
	Black/African American	4	4.3				0				
	Pacific Islander	1	1.1				0				
	More than one	10	10.8				4	6.7			
Years in College		92		0-10	2.14	1.81	58		0-8	2.45	1.61
	Unknown	1					2				
Class Standing	Freshman	34	36.6				17	28.3			
	Sophomore	17	18.3				13	21.7			
	Junior	27	29.0				15	25.0			
	Senior	13	14.0				13	21.7			
	Graduate student	1	1.1				2	3.3			
	Post Baccalaureate	1	1.1				0				

independent variable. The scatterplot matrixes demonstrated stronger linearity in the risky group than in the not risky group. Levene's test of equality of error variance was also performed and the assumption was met. Means and standard deviations of the questionnaires are located in Table 2. Correlations across the groups can be seen in Table 3 and Table 4.

Contrary to the hypothesis, there was no statistically significant difference found for the risky group for the SDRS-5 score (p = .440) and the MLQ presence score (p = .071). There was also no statistically significant difference found for the not risky group for the SDRS-5 score (p = .172) and the MLQ presence score (p = .674). The results showed no statistical significance for the MLQ presence score in the not risky group, Wilks' Λ = .960, $F(3, 87) = 1.22$, p = .307, multivariate η^2 = .04, or for the SDRS-5 in the not risky group, Wilks' Λ = .965, $F(3, 87) = 1.04$, p = .380, multivariate η^2 = .035. The results showed no statistical significance for the MLQ presence score in the risky group, Wilks' Λ = .947, $F(3, 54) = 1.01$, p = .395, multivariate η^2 = .053, or for the SDRS-5 in the risky group, Wilks' Λ = .952, $F(3, 54) = .912$, p = .441, multivariate η^2 = .048 (Table 5). Since no significance was found, no further analyses were completed.

Table 2

Means and Standard Deviations Across Measurements in Not Risky and Risky Groups

	Not risky				Risky			
	n	Range	M	SD	n	Range	M	SD
MLQ Presence	93	1-2	1.43	.50	60	1-2	1.57	.50
AUDIT	93	0-8	2.55	2.19	60	0-22	11.52	4.36
DAST-20	93	0-3	.56	.81	60	0-5	1.60	1.45
SRS	93	0-59	11.58	12.01	60	0-72	23.70	16.69
SDRS-5	93	0-5	1.20	1.32	60	0-3	.77	.81

Note. MLQ Presence = Meaning in Life Questionnaire presence subscale; AUDIT = Alcohol Use Disorders Identification Test; DAST-20 = Drug Abuse Screening Test (20 items); SRS = Sexual Risk Survey; SDRS-5 = Social Desirability Response Set (5 items).

Table 3

Correlations Between Variables in Not Risky Group

		MLQ Presence	AUDIT	DAST-20	SRS	SDRS-5
MLQ Presence	Pearson Correlation	—	-.12	-.01	.14	-.14
	Sig. (2-tailed)	—	.256	.926	.188	.195
AUDIT Score	Pearson Correlation	-.12	—	.21*	.21*	-.18
	Sig. (2-tailed)	.256	—	.043	.048	.093
DAST-20	Pearson Correlation	-.01	.21*	—	.32**	-.15
	Sig. (2-tailed)	.926	.043	—	.002	.155
SRS	Pearson Correlation	.14	.21*	.32**	—	-.10
	Sig. (2-tailed)	.188	.048	.002	—	.321

Note. *n* = 93. MLQ Presence = Meaning in Life Questionnaire presence subscale; AUDIT = Alcohol Use Disorders Identification Test; DAST-20 = Drug Abuse Screening Test (20 items); SRS = Sexual Risk Survey. *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed)

Table 4

Correlations Between Variables in Risky Group

		MLQ Presence	AUDIT	DAST-20	SRS	SDRS-5
MLQ Presence	Pearson Correlation	—	.322*	.294*	.084	-.212
	Sig. (2-tailed)	—	.012	.022	.525	.104
AUDIT	Pearson Correlation	.322*	—	.368**	.436**	-.263*
	Sig. (2-tailed)	.012	—	.004	.000	.042
DAST-20	Pearson Correlation	.294*	.368**	—	.198	-.167
	Sig. (2-tailed)	.022	.004	—	.130	.202
SRS	Pearson Correlation	.084	.436**	.198	—	-.148
	Sig. (2-tailed)	.525	.000	.130	—	.259

Note. *n* = 60. MLQ Presence = Meaning in Life Questionnaire presence subscale; AUDIT = Alcohol Use Disorders Identification Test; DAST-20 = Drug Abuse Screening Test (20 items); SRS = Sexual Risk Survey. *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

Table 5
Multivariate Analysis of Covariance (MANCOVA) Summary for Not Risky and Risky Groups

	Not risky					Risky				
	Wilk's Λ	*F*	*df*	*p*	η^2	Wilk's Λ	*F*	*df*	*p*	η^2
MLQ Presence	.960	1.22	3, 87	.307	.04	.947	1.01	3, 54	.395	.053
SDRS-5	.965	1.04	3, 87	.380	.035	.952	.912	3, 54	.441	.048

Note. MLQ Presence = Meaning in Life Questionnaire presence subscale; Social Desirability Response Set (5 items).

CHAPTER V

DISCUSSION

The present study hypothesized that college students with a higher risky behavior as determined by the AUDIT, DAST-20, and SRS measurements would have a lower purpose in life as determined by the MLQ. The results of the present study did not support the hypothesis in that there was no statistical significance shown between risky behavior and purpose in life according the the factorial MANCOVA analysis. There were, however, statistically significant correlations found which support that there is a relationship between alcohol use, substance use, and purpose in life.

Strengths

Despite no statistically significant results found, there were a number of strengths to this study. One strength of the study is that it was conducted online, which increased ease of access for participants. Participants could answer questions from their own personal computer and at a time that was convenient for them. Another strength of the study is the high retention rate of participants who completed the measurements. Out of the 180 initial participants who agreed to participate in the study, only four participants did not make any responses and two participants made too few responses to be included in the analysis. The vast majority of the participants completed all the measurements.

Furthermore, another strength of the study is that there were correlations found between between the AUDIT, DAST-20, and SRS in the not risky group (see Table 3) and strong correlations found between the AUDIT, DAST-20, and SRS in the risky group (see Table 4). This supports that there is a relationship between the three dependent variables. Moreover, the strong correlations in the risky group indicate that as the risk

increases for one risk behavior, risk increases for all (alcohol use, substance use, and sexual behavior) risky behavior.

Correlations were also found between the MLQ presence subscale and the AUDIT as well as the MLQ presence subscale and the DAST-20 at the 0.05 level in the risky group. Although correlation does not imply causation, this correlation supports the existence of some sort of relationship between presence of meaning in life and the alcohol and substance use in the risky group. This correlation is consistent with the findings of previous research looking at purpose or meaning in life and risky alcohol use and substance use in college students which (Kress, Nugent, Whitlock, & Mease, 2015; Meisel & Palfai, 2015; Wood & Herbert, 2005).

Limitations and Future Research

There were several limitations to this study. A preliminary MANCOVA analysis combining the two groups before the entire dataset was split into risky and not risky groups was conducted. The preliminary analysis indicated multicollinearity, suggesting that there were two different groups of data within the entire dataset. Because three of the questionnaires measured risk, it indicated that there were two camps of participants: those who indicated risk and those who indicated no or low risk. In light of this observation, future studies could look only at participants who scored high on the risk measurements and not include not risky participants in analysis. Additionally, in future studies, participants reporting risky behavior could be used as an inclusionary criterion and participants reporting low risky behavior could be used as an exclusionary criterion.

Another limitation of this study was the sample size. Because the total sample size of 174 was then split into two groups and then outliers were removed, 93 were left in

the not risky group and 60 in risky group. One concern with this data is that the data are very unequal with one group containing almost twice the amount of participants than the other group. Another concern with the sample size is that it jeopardizes the accuracy of the MANCOVA analysis. Ideally, the sample size would have been larger to increase power as well as the accuracy and normality of the data.

Another limitation was lack of normality within the not risky group data. Because these data showed skewness and kurtosis in the not risky group, there is an indication that the sample size of the not risky group was not large enough. In this particular study the main focus was on the risky group data, so skewness and kurtosis was not of huge concern. However, for studies that seek to compare groups of participants showing risky and not risky behaviors, sample size should be taken into consideration.

Along with the simple size, another limitation is variability. Each of the dependent variable measurements resulted in large standard deviations (see Table 2) in both the risky and the not risky groups. This indicates that the data across both groups is widely spread, and thus, less reliable. One implication of this finding is that there is too much variability in the data set. For the AUDIT in particular, the mean of the risky group is high, while the mean of the not risky group is low, suggesting that the test does measure the degree of alcohol use accordingly. However, the large standard deviation within these groups suggests that there is variability within each group. One possibility is that there are multiple levels of drinking above and below the cut-off score of the AUDIT that need to be considered. Previous studies have investigated drinking among college students and have found a strong correlation between risky drinking and sexual behavior (Cooper, 2012; Pompeo, Kooyman, & Pierce, 2014). An area for future research could

be to investigate potential correlations between the amount of drinking, categorized by degree of risk instead of binary categories of risky or not risky, and sexual risk behavior.

The SRS data also resulted in very large standard deviations. This is not altogether unsurprising in that since there were no cut-off scores indicating risk level for the SRS, any SRS score was included in either the risky or not risky groups. Thus, the SRS data in both the risky and not risky groups indicate extreme variability. Future research could be conducted on whether or not there is a cut-off score for the SRS or determining if there are certain items from the SRS that indicate a higher risk than others. The SRS contain five subscales: sexual risk-taking with uncommitted partners, risky sex acts, impulsive sexual behaviors, intent to engage in risky sexual behaviors, and risky anal sex acts. Perhaps not all of these subscales measure risk identically. For instance, intent to engage in risky sexual behaviors could be seen as measuring a different aspect of sexual behavior than committing risky sexual acts, as the other subscales measure.

Along with this, one limitation is the scoring of the data. Both the AUDIT and the DAST-20 measurements had the capacity to be scored as categorical data or as interval data. Both of the questionnaires had a cut-off score for what is considered to be risky and what is not considered risky as was indicated in their respective scoring manuals and articles that the higher the total score, the riskier the behavior. However, the SRS was different than the AUDIT and the DAST-20 in that there were no cut-off scores for what is considered risky and not risky. Instead, data can be scored by using the five factors or the total score of the SRS interpreted as interval data, with the higher the response the riskier the sexual behavior. When comparing this to the AUDIT and the DAST-20, the SRS is more subjective in what can be considered potentially harmful

risky behavior. Additionally, this increases error and heterogeneity in the risky group and thus limits the statistical power.

Other limitations of this study concern external validity. Participants in this study were made up of only students from a public northwestern university. Because this study focused on risk-taking behavior and purpose in life, it would be beneficial to have recruited participants from various colleges across the country in order to increase the population validity of the study. By only recruiting participants from one university in the northwestern United States, the participants are limited to a single university and thus the results may not generalize to other college populations. A related concern is that of ecological validity. College students are the focus population in this study but the data is limited to one area of the country and to that of a public university. It is possible that personal meaning is influenced by cultural factors such as spirituality/religious beliefs, familial values, and socio-economic standing. Therefore, in order to obtain a more complete dataset of personal meaning in different type of colleges or universities (community, private, and public), recruiting participants from a variety of higher education settings throughout the country would ensure stronger ecological validity. In addition, future studies investigating this topic may consider using logic regression as a nonparametric procedure.

Conclusion

In conclusion, although there were no statistically significant results from the MANCOVA analysis, the correlations between the presence of meaning in life and alcohol use and substance use behavior in the risky group are consistent with previous research looking at purpose in life and risky behavior in college students. Implications

from the findings are such that may help future similar research studies in their design and data analysis. This discussion will also assist future studies that wish to investigate the relationship between risk-taking behavior and purpose in life in college students in determining potential limitations of the study. Overall, this topic remains one that could benefit college counselors and professors who wish to address risk-taking behavior in college students and develop strategies to increase students' personal sense of meaning or purpose in life.

REFERENCES

Bohn, M. J., Babor, T. F., & Kranzler, H. R. (1995). The alcohol use disorders identification test (AUDIT): Validation of a screening instrument for use in medical settings. *Journal of Studies On Alcohol*, *56*(4), 423-432. doi: 10.15288/jsa.1995.56.423

Bronk, K. C. (2014). *Purpose in life: A critical component of optimal youth development*. New York: Springer.

Burrow, A. L. & Spreng, R. N. (2016). Waiting with purpose: A reliable but small association between purpose in life and impulsivity. *Personality and Individual Differences, 90,* 187-189. doi:10.1016/j.paid.2015.11.010

Cooper, L. M. (2002). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol, 14,* 101-117. doi: 10.15288/jsas.2002.s14.101

DeWitz, S. J., Woolsey, M. L., & Walsh, W. B. (2009). College student retention: An exploration of the relationship between self-efficacy beliefs and purpose in life among college students. *Journal of College Student Development*, *50*(1), 19-34. doi: 10.1353/csd.0.0049

Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49,* 71–75. doi: 10.1207/s15327752jpa4901_13

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Frankl, V. E. (1959). *Man's search for meaning: An introduction to logotherapy.* Boston: Beacon Press.

Hays, R., Hayashi, T., & Stewart, A. (1989). A five-item measure of socially desirable response set. *Educational and Psychological Measurement, 49*(3), 629-636. doi: 10.1177/001316448904900315

Kim, E., Stretcher, V., & Ryff, C. (2014). Purpose in life and use of preventative health care services. *Proceedings of the National Academy of Sciences of the United States of America, 111*(46), 16331-16336. doi: 10.1073/pnas.1414826111

Kress, V. E., Newgent, R. A., Whitlock, J., & Mease, L. (2015). Spirituality/religiosity, life satisfaction, and life meaning as protective factors for nonsuicidal self-injury in college students. *Journal of College Counseling*, *18*(2), 160-174. doi:10.1002/jocc.12012

Martin, R.A., MacKinnon, S., Johnson, J., & Rohsenow, D.J. (2011). Purpose in life predicts treatment outcome among adult cocaine abusers in treatment. *Journal of Substance Abuse*, *40*(2), 183-188. doi:10.1016/jsat.2010.10.002

McKnight, P.E. & Kashdan, T.B (2009). Purpose in life as a system that creates and sustains health and well-being: An integrative, testable, theory. *Review of General Psychology, 13*(3), 242-251. doi: 10.1037/a0017152

Meisel, S. N. & Palfai, T. P. (2015). Meaning in life goal pursuit moderates the effects of social influences on college student drinking. *Journal of Applied Social Psychology*, *45*(10), 561-567. doi:10.1111/jasp.12319

Mohammadpoorasl, A., Ghahramanloo, A. A., & Allahverdipour, H. (2013). Risk-taking behaviors and subgrouping of college students: A latent class analysis. *American Journal of Men's Health*, *7*(6), 475-481. doi:10.1177/1557988313483540

Noblejas de la Flor, M. A. (1997). Meaning levels and drug-abuse therapy: An empirical study. In *International Forum for Logotherapy* (Vol. 20, pp. 46-52). Viktor Frankl Institute of Logotherapy.

Padleford, B.L. (1974). Relationship between drug involvement and purpose in life. *Journal of Clinical Psychology, 30*(3), 303-305. doi: 10.1002/1097-4679(197407)30:3<303::AID-JCLP2270300323>3.0.CO;2-2

Pargament, K. L. (1999). Meaning. In The Fetzer Institute, *Multidimensional measurements of religiousness/spirituality for use in health research: A report of the Fetzer Institute/ National Institute on Aging group* (pp. 19-24). Kalamazoo, MI: Fetzer Institute.

Pompeo, A. M., Kooyman, L., & Pierce, G. (2014). Counseling college women: The interplay of psychological development, social factors, alcohol, and sexual risk-taking. *Adultspan Journal, 13*(1), 15-29. doi:10.1002/j.2161-0029.2014.00023.x

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

Skinner, H. (1982). The drug abuse screening test. *Addictive Behaviors, 7*(4), 363-371. doi: 10.1016/0306-4603(82)90005-3

Steger, M.F., Fitch-Martin, A.R., Donnelly, J., & Rickard, K.M (2015). Meaning in life and health: Proactive health orientation links meaning in life to health variables

among American undergraduates. *Journal of Happiness Studies, 16,* 538-597. doi: 10.1007/s10902-014-9523-6

Steger, M.F., Frazier, O., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Pscyhology, 53*(1), 80-93. doi: 10.1037/0022-0167.53.1.80

Steger, M.F. & Kadashan, T. (2007). Stability and specificity of meaning in life and life satisfaction over one year. *Journal of Happiness Studies, 8,* 161-179. doi: 10.1007/s10902-006-9011-8

Turchik, J. & Garske, A. (2009). Measurement of sexual risk taking among college students. *Archives of Sexual Behavior*, *38*(6), 936-948. doi: 10.1007/s10508-008-9388-z

Turchik, J. A., Walsh, K., & Marcus, D. K. (2015). Confirmatory validation of the factor structure and reliability of the Sexual Risk Survey in a large multiuniversity sample of U.S. students. *International Journal of Sexual Health*, *27*(2), 93-105. doi:10.1080/19317611.2014.944295

VandenBos, G. & American Psychological Association. (2007). *APA dictionary of psychology* (1st ed.). Washington, DC: American Psychological Association.

Waisberg, J.L. & Porter, J. E. (1994). Purpose in life and outcome of treatment for alcohol dependence. *British Journal of Treatment of Clinical Psychology. 33*(1). 49-63. doi: 10.111/j.2044-8260.1994.tb01093.x

Welkener, M. & Bowsher, A. (2012). Soul-building: Students' perspectives on meaning, purpose, and the college experience. *Journal of College and Character, 13*(3), 1-11. doi: 10.1515/jcc-2012-1881

Wood, R. J. & Herbert, E. (2005). The relationship between spiritual meaning and purpose and drug and alcohol use among college students. *American Journal of Health Studies*, 20(1/2), 72-79. doi: 10.1016/0376-8716(82)90044-8

APPENDIXES

Appendix A

Information Page for College Students' Purpose in Life and Risk Taking Behavior

Please read the following information about this research study and click the "I accept" button at the bottom of your screen if you are interested in participating.

The following study is being done to evaluate college students' personal perspectives of meaning and their self-reported risk-taking behaviors concerning alcohol use, drug use and sexual behavior.

You must be 18 years or older to participate in this survey and a student at Central Washington University.

This web-based study will take approximately 30 minutes to complete. If you agree to participate in this study, you will be asked to read and answer 74 questions about purpose and meaning in your life, drug use, alcohol use, sexual behavior and questions about your gender, age, race, ethnicity, GPA, and class standing. Some of the questions you will be asked are personal in nature and may cause feelings of discomfort. Examples of such questions include "have you participated in illegal activity due to drug use," "how many times have you had anal sex," and "how many times have you engaged in anal penetration by a hand without protection?"

Your decision to participate is strictly voluntary and involves the risk of feelings of discomfort or embarrassment around answering personal questions about yourself. In order to manage these feelings, you may choose not to answer any question that you do not wish to. Declining to participate in this study will involve no penalty to you and you may withdraw from the study at any time without penalty.

If you submit answers to questions, your responses are recorded without any personal identifiers, so your responses are completely anonymous, meaning your name will not be linked to your answers to any questions. We hope to gather approximately 200 responses. Data will be stored on a secure server and can only be accessed by the research team.

Reasonable and appropriate safeguards have been used in the creation of the web-based survey to maximize the confidentiality and security of your responses; however, when using information technology, it is never possible to guarantee complete privacy. Since this study is conducted online, we ask that you answer questions in a private setting where you will not be observed by others.

If you have any concerns with your participation on the Sona system or extra credit granting you may contact the Sona administrator at researcheradministrator@cwu.edu. If you have technical difficulties or issues accessing the study site you may contact the

CWU Information Services help desk by email at servicedesk@cwu.edu or by phone at (509) 963-2001.

You may also contact the CWU Human Protections Administrator if you have questions about your rights as a participant or if you think you have not been treated fairly. The HSRC office number is (509) 963-3115.

If you have any questions about the research study, you may call the principal investigator, Anna Church at (831) 252-3363 or Dr. Schwartz at (509) 963-3661.

Please click “I accept” if you are 18 years or older and wish to participate.

Appendix B

Demographics

Please answer the following questions by selecting your answer or typing in your answer in the space provided:

1. What is your age? (type in answer) _____
2. What is your gender? (type in answer) _____
3. Which best describes your race/ ethnicity? (type in answer) _____
4. How many years have you attended college? (type in answer) _____
5. Which is your class standing? Please select the number that corresponds with your class standing as indicated here:

   1 = Freshman

   2 = Sophomore

   3 = Junior

   4 = Senior

   5 = Graduate student

   6 = Postbaccalaureate
6. How did you learn about this study?

   1 = Sona

   2 = C-Port

Appendix C

MLQ

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

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
1	2	3	4	5	6	7

1. I understand my life's meaning.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
2. I am looking for something that makes my life feel meaningful.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
3. I am always looking to find my life's purpose.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
4. My life has a clear sense of purpose.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
5. I have a good sense of what makes my life meaningful.

   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
6. I have discovered a satisfying life purpose.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
7. I am always searching for something that makes my life feel significant.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
8. I am seeking a purpose or mission for my life.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
9. My life has no clear purpose.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
10. I am searching for meaning in my life.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6

g. 7

Appendix D

The Alcohol Use Disorders Identification Test: Self-Report Version

Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Indicate the response that best describes your answer to each question.

1. How often do you have a drink containing alcohol?
    a. 0 = Never
    b. 1 = Monthly or less
    c. 2 = 2-4 times a month
    d. 3 = 2-3 times a week
    e. 4 = 4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
    a. 0 = 1 or 2
    b. 1 = 3 or 4
    c. 2 = 5 or 6
    d. 3 = 7 to 9
    e. 4 = 10 or more
3. How often do you have six or more drinks on one occasion?
    a. 0 = Never
    b. 1 = Less than monthly
    c. 2 = Monthly
    d. 3 = Weekly
    e. 4 = Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?
    a. 0 = Never
    b. 1 = Less than monthly
    c. 2 = Monthly
    d. 3 = Weekly
    e. 4 = 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?
    a. 0 = Never
    b. 1 = Less than monthly
    c. 2 = Monthly
    d. 3 = Weekly
    e. 4 = 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?
    a. 0 = Never
    b. 1 = Less than monthly
    c. 2 = Monthly
    d. 3 = Weekly

    e. 4 = Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?
    a. 0 = Never
    b. 1 = Less than monthly
    c. 2 = Monthly
    d. 3 = Weekly
    e. 4 = 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?
    a. 0 = Never
    b. 1 = Less than monthly
    c. 2 = Monthly
    d. 3 = Weekly
    e. 4 = Daily or almost daily
9. Have you or someone else been injured because of your drinking?
    a. 0 = No
    b. 2 = Yes, but not it the last year
    c. 4 = 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?
    a. 0 = No
    b. 2 = Yes, but not it the last year
    c. 4 = Yes, during the last year

Appendix E

DRUG ABUSE QUESTIONNAIRE (DAST-20)

The following questions concern information about your potential involvement with drugs not including alcoholic beverages during the past 12 months. Carefully read each statement and decide if your answer is "Yes" or "No". Then, indicate the appropriate response. In the statements "drug abuse" refers to (1) the use of prescribed or over the counter drugs in excess of the directions and (2) any non-medical use of drugs. The various classes of drugs may include: cannabis (e.g. marijuana, hash), solvents, tranquillizers (e.g. Valium), barbiturates, cocaine, stimulants (e.g. speed), hallucinogens (e.g. LSD) or narcotics (e.g. heroin). Remember that the questions **do not** include alcoholic beverages.

Please answer every question. If you have difficulty with a statement, then choose the response that is mostly right.

These questions refer to the past 12 months.

1. Have you used drugs other than those required for medical reasons?
   a. Yes
   b. No
2. Have you abused prescription drugs?
   a. Yes
   b. No
3. Do you abuse more than one drug at a time?
   a. Yes
   b. No
4. Can you get through the week without using drugs?
   a. Yes
   b. No
5. Are you always able to stop using drugs when you want to?
   a. Yes
   b. No
6. Have you had "blackouts" or "flashbacks" as a result or drug use?
   a. Yes
   b. No
7. Do you ever feel bad or guilty about your drug use?
   a. Yes
   b. No
8. Does your spouse (or parents) ever complain about your involvement with drugs?
   a. Yes
   b. No
9. Has drug abuse created problems between you and your spouse or your parents?

a. Yes
b. No

10. Have you lost friends because of your use of drugs?
    a. Yes
    b. No
11. Have you neglected your family because of your use of drugs?
    a. Yes
    b. No
12. Have you been in trouble at work (or school) because of drug abuse?
    a. Yes
    b. No
13. Have you lost your job because of drug abuse?
    a. Yes
    b. No
14. Have you gotten into fights when under the influence of drugs?
    a. Yes
    b. No
15. Have you engaged in illegal activities in order to obtain drugs?
    a. Yes
    b. No
16. Have you been arrested for possession of illegal drugs?
    a. Yes
    b. No
17. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?
    a. Yes
    b. No
18. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding, etc.)?
    a. Yes
    b. No
19. Have you gone to anyone for help for drug problem?
    a. Yes
    b. No
20. Have you been involved in a treatment program specifically related to drug use?
    a. Yes
    b. No

Appendix F

Sexual Risk Survey (SRS)

Instructions: Please read the following statements and record the number that is true for you over the past 6 months for each question on the blank. If you do not know for sure how many times a behavior took place, try to estimate the number as close as you can. Thinking about the average number of times the behavior happened per week or per month might make it easier to estimate an accurate number, especially if the behavior happened fairly regularly. If you've had multiple partners, try to think about how long you were with each partner, the number of sexual encounters you had with each, and try to get an accurate estimate of the total number of each behavior. If the question does not apply to you or you have never engaged in the behavior in the question, put a ''0'' as your answer. Please do not leave items blank. Remember that in the following questions ''sex'' includes oral, anal, and vaginal sex and that ''sexual behavior'' includes passionate kissing, making out, fondling, petting, oral-to-anal stimulation, and hand-to-genital stimulation. Refer to the Glossary for any words you are not sure about. Please consider only the last 6 months when answering and please be honest.

Glossary

Below is a list of terms used in the SRS. You are not required to read this, and the definitions may be offensive to some people. However, the definitions may be helpful in answering some of the questions.

Analingus: Oral to anal stimulation, where a person stimulates another person's anal region with one's mouth/tongue (a.k.a. "rimming" or "butt/ass licking").

Anal Sex: Penis to anus stimulation, where a man's penis penetrates another person's anus (a.k.a. "butt/ass sex").

Birth Control/Protection against pregnancy: Methods used to prevent pregnancy, such as taking birth control pills, Norplant implants, birth control patches, condoms, diaphragms, contraceptive sponges, withdrawing before ejaculation, etc. Note: Only latex and polyurethane condoms will also effectively protect against STIs.

Condom: A male condom is a sheath (usually made of latex) that is placed on the outside of the penis and covers the entire shaft of the penis during sexual relations to help protect against pregnancy and STIs. A female condom is a soft flexible tube (usually made of polyurethane) that is inserted into the vagina before sex to protect against pregnancy and STIs. Note: Only latex & polyurethane condoms offer adequate protection against STIs.

Cunnilingus: Oral sex on a woman, using one's mouth to stimulate a woman's genitals (a.k.a. "eating a woman out" or "going down on a woman")

Dental dam (or "adequate protection"): A thin piece of latex that can be placed between the mouth and the vagina during oral sex on a woman to help prevent STIs, or placed between the mouth and anal region during oral to anal sex (analingus) to prevent STIs and bacterial infections. Although purchased dental dams are the most reliable, they can also be self-made by cutting a large square from a latex condom (people often use flavored condoms for this) or by using a square of plastic wrap as long as there are no holes in the material and the covering adequately covers the genital region. These self-made dental dams are considered "adequate protection" in this study.

Fellatio: Oral sex on a man, using one's mouth to stimulate a man's penis (a.k.a. "blow job" or "giving head")

Hooking up: Engaged in sexual behavior (such as making out/fondling) or sex with someone, usually outside of a relationship.

IV drugs: Intravenous drugs that are injected into the body using a needle and a syringe,

drugs that you can "shoot up" such as heroin.

Oral Sex: Mouth to genital stimulation, using one's mouth to stimulate or touch the genitals of a man or a woman (a.k.a. fellatio, cunnilingus, "blow jobs," or "going down on someone").

Sex: Includes oral, anal, and vaginal sex.

Sexual behavior: Includes passionate kissing, fondling, petting, oral-to-anal stimulation and hand-to genital stimulation (includes "making out," "dry sex/humping," "fingering," analingus, "rimming," or "handjobs").

Sexual partner: A person with whom you have had sex (oral, anal, or vaginal).

STI: Stands for a sexually transmitted infection, a disease that can be given to someone through oral, genital and/or anal sex. Some STIs may also be gotten through oral to anal contact and hand to genital contact. STIs include herpes, trichomonas, chlamydia, syphilis, gonorrhea, vaginitis, genital warts, pubic lice, hepatitis B, and HIV infection which leads to AIDS.

Vaginal sex: Sexual intercourse where a man's penis penetrates a woman's vagina, this is the only type of sex that can directly result in pregnancy. Please note that rear- entry intercourse, such as "doggy-style" sex, is considered vaginal sex as long as the penis is penetrating the vagina and not the anal region.

In the past six months:

1. How many partners have you engaged in sexual behavior with but not had sex with?

   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10 or more
2. How many times have you left a social event with someone you just met?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10 or more
3. How many times have you ‘‘hooked up’’ but not had sex with someone you didn’t know or didn’t know well?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10 or more
4. How many times have you gone out to bars/parties/social events with the intent of ‘‘hooking up’’ and engaging in sexual behavior but not having sex with someone?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7

   i. 8
   j. 9
   k. 10 or more
5. How many times have you gone out to bars/parties/social events with the intent of ‘‘hooking up’’ and having sex with someone?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10 or more
6. How many times have you had an unexpected and unanticipated sexual experience?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10 or more
7. How many times have you had a sexual encounter you engaged in willingly but later regretted?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10 or more

For the next set of questions, follow the same direction as before. However, for questions 8–23, if you have never had sex (oral, anal or vaginal), please put a ‘‘0’’ as your answer.

8. How many partners have you had sex with?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
9. How many times have you had vaginal intercourse without a latex or polyurethane condom? Note: Include times when you have used a lambskin or membrane condom.
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
10. How many times have you had vaginal intercourse without protection against pregnancy?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
11. How many times have you given or received fellatio (oral sex on a man) without a condom?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4

f. 5
g. 6
h. 7
i. 8
j. 9
k. 10 or more

12. How many times have you given or received cunnilingus (oral sex on a woman) without a dental dam or ‘‘adequate protection’’ (please see definition of dental dam for what is considered adequate protection)?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
13. How many times have you had anal sex without a condom?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
14. How many times have you or your partner engaged in anal penetration by a hand (‘‘fisting’’) or other object without a latex glove or condom followed by unprotected anal sex?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more

15. How many times have you given or received analingus (oral stimulation of the anal region, ‘‘rimming’’) without a dental dam or ‘‘adequate protection’’(please see definition of dental dam for what is considered adequate protection)?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
16. How many people have you had sex with that you know but are not involved in any sort of relationship with (i.e., ‘‘friends with benefits’’, ‘‘fuck buddies’’)?
    l. 0
    m. 1
    n. 2
    o. 3
    p. 4
    q. 5
    r. 6
    s. 7
    t. 8
    u. 9
    v. 10 or more
17. How many times have you had sex with someone you don’t know well or just met?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
18. How many times have you or your partner used alcohol or drugs before or during sex?
    a. 0
    b. 1
    c. 2
    d. 3

e. 4
f. 5
g. 6
h. 7
i. 8
j. 9
k. 10 or more

19. How many times have you had sex with a new partner before discussing sexual history, IV drug use, disease status and other current sexual partners?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
20. How many times (that you know of) have you had sex with someone who has had many sexual partners?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
21. How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STIs/HIV?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more

22. How many partners have you had sex with that you didn't trust?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more
23. How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10 or more

Appendix G

SDRS-5 Instructions and Items

Listed below are a few statements about your relationships with others.

How much is <u>each</u> statement TRUE or FALSE for you? Please answer according to the scale below:

Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
1	2	3	4	5

1. I am always courteous even to people who are disagreeable.
    a. Definitely True
    b. Mostly True
    c. Don't Know
    d. Mostly False
    e. Definitely False
2. There have been occasions when I took advantage of someone.
    a. Definitely True
    b. Mostly True
    c. Don't Know
    d. Mostly False
    e. Definitely False
3. I sometimes try to get even rather than forgive and forget.
    a. Definitely True
    b. Mostly True
    c. Don't Know
    d. Mostly False
    e. Definitely False
4. I sometimes feel resentful when I don't get my way.
    a. Definitely True
    b. Mostly True
    c. Don't Know
    d. Mostly False
    e. Definitely False
5. No matter who I'm talking to, I'm always a good listener.
    a. Definitely True
    b. Mostly True
    c. Don't Know
    d. Mostly False
    e. Definitely False

Appendix H

Debriefing and Referral Page

This purpose of this study was to investigate the relationship between meaning in life and risk taking behavior. The goal of this study was to determine to what extent, if any, the degree of meaning in life a person has prevents harmful risk taking behavior, measured by risky alcohol use, drug use, and sexual behavior. Meaning and purpose in life was measured by your degree of agreement with statements such as "my life has a clear purpose." Risky alcohol and drug use was measured by your answer to questions such as "how often do you have an alcoholic drink," and "have you used drugs other than those required for medical purposes?" Risky sexual behavior was measured by your answers to questions such as how many times have you had a sexual encounter you engaged in willingly but then regretted later?"

All of the participants in this study were asked to complete a series of questionnaires amounting to a total of 74 questions, to the best of their ability and knowledge. The answers from the questionnaires will be scored and tallied. Risk taking scores will be compared with meaning in life score to determine the extent of the relationship.

If you are currently experiencing any level of distress or have concerns about the answers you provided on any of the questionnaires, CWU offers free counseling to students at the Student Medical and Counseling Clinic:

400 E. University Way
Ellensburg, WA 98926-7585
(on the corner of 11th and Poplar street)
(509) 963-1391

Additionally, if you are concerned about risky behavior and would like more information about steps to take to minimize alcohol, drug, or sexual risk, the CWU Wellness Center provides support and education to promote positive health behaviors:

CWU Wellness Center
SURC, Room 139
Wellness@cwu.edu
(509) 963-3213

We encourage you to take advantage of these services if you are currently experiencing distress or are concerned about risky behaviors.

If you have any further questions regarding this research study or would like information on reviewing the group results of this study, please contact Anna Church at churcha@cwu.edu or Dr. Schwartz at schwartz@cwu.edu. If you have any concerns

regarding your treatment as a participant, please contact the CWU HSRC at 509-963-3115 or HSRC@CWU.edu.

Thank you for your participation. Research would not be possible without willing participants.

To ensure your confidentiality and privacy please close your browser when you have completed your participation.

Thank you!

Appendix I

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