Determinants of Depressive Symptomatology among College Students

by

Olivia Jamile Navarro

Master of Public Health, California Baptist University, 2019

Thesis Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master of Public Health

California Baptist University

August 2019

The College of Health Science

California Baptist University

Riverside, California

This is to certify that the Master's Thesis of

Olivia Jamile Navarro

has met the thesis requirements
for the degree of
Master of Public Health

Approved by:

Melissa Wigginton, DrPH
Associate Professor
Committee Chair

Marshare Penny, DrPH
Professor
Committee Member

Lindsay Fahnestock, DrPH
Assistant Professor
Committee Member

Abstract

Rates of depression among college students is on the rise across the United States, and the consequences are dire. This study aimed to determine if various lifestyle choices protected or put college students at-risk for developing depressive symptomology. This study examined the effect of four potential determinants and depressive symptomology: spirituality, social media use, residential status (on- or off-campus), and employment status among undergraduate college students. This study was conducted at a private Christian university and included 220 participants who completed a paper-based survey. A cross-sectional design from a convenience sample was used. Results of this study found a statistically significant association between fewer depressive symptomologies and "feeling deep inner peace or harmony." There was also an association found between depressive symptomology and social media use. There were no significant findings for depression and residential status or employment status.

Key Words: College students, Depression, Suicide, Protective Factors, Spirituality

Acknowledgments

I would like to, first and foremost, thank God for giving me the strength and perseverance to finish my degree. I would also like to thank all my family and friends who have continued to encourage me to meet my academic goals. A very special thank you to my mom for everything you have done for me. I would not have been able to complete my degree without your constant love, support, and help with watching Maizie. To my pops who is no longer with us, but I know is some place smiling down on me—thank you for always believing in me and cheering me on. Also, thank you to my beautiful daughter Maizie, for giving me the motivation to finish. Maizie, you will always and forever be my inspiration and motivation in life.

Thank you to all my professors who have helped me along on this journey to obtaining my Master's degree. A heartfelt thank you to Dr. Wigginton, for all of your help, support, and encouragement as my Chair and mentor—this thesis would not have been possible without you. Thank you, Dr. Penny and Dr. Fahnestock for being on my committee, allowing me to hand out my surveys to your classes, and getting me through this. Thank you, Dr. Roth, for answering my email and allowing me to distribute my surveys to your class. Lastly, I would like to thank all the students who participated in my research study and took the time to complete my survey.

Table of Contents

List of Tables

Review of Literature

Introduction

According to the National Institute of Mental Health ([NIMH] 2017), one of the most common mental health disorders in the United States is clinical depression. The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) characterizes a clinically depressive episode as a period of at least two weeks ("same 2-week period") where there is either a depressed mood or loss of pleasure or interest (American Psychiatric Association [APA], 2013). In addition, at least four other symptoms that reflect a change in functioning need to be present: problems with energy, sleep, eating, self-image, concentration, or recurrent thoughts of suicide or death (NIMH, 2017). Suicidal tendencies have been described as complex and manifest as a result of interactions among genetic, environmental, psychosocial, and psychological risk factors (Wilcox et al., 2010).

The Centers for Disease Control and Prevention ([CDC] 2018) found that between 2013 and 2016, 8.1% of American adults age 20 and older had an episode of depression within a two-week period. According to data obtained through the Blue Cross Blue Shield Health Index (2018), diagnoses of major depression has risen by 33% since 2013. Among adolescents, the rates of depression are rising higher than that of the rest of the population (Blue Cross Blue Shield, 2018).

Not only is depression on the rise among the general population, but rates of depression and other psychological problems continue to rise on college campuses across the United States (Blanco, et. al., 2008). Attending a college or university can be both an exciting and stressful period in an individual's life. There are many new challenges that arise when adapting to college life, which can put students at risk for developing depressive symptomology (Brandy, 2011). The

occurrence of depressive symptoms can oftentimes lead to negative outcomes in the life of a college student with the most significant outcome being suicide (Brandy, 2011). According to the America Psychological Association ([APA] 2011), suicide is the second leading cause of death among college students.

Although suicide is the most detrimental outcome of depression, there are many other risk factors associated with depression that have the potential to cause both short- and long-term negative outcomes among students. For example, Beck et al. (2008) identified the misuse of alcohol as a high-risk behavior among college students related to depressive symptomology. Other high-risk behaviors include smoking, eating disorders, and casual sexual encounters (Swanholm, Vosvick, & Chng, 2009).

High Risk Behaviors

Symptoms of depression consequently lead to high-risk behaviors among college students. High-risk behaviors that have been identified include smoking, eating disorders, casual sexual encounters, and the misuse of alcohol (Brady, 2011). Smoking has been identified as a high-risk behavior related to symptoms of depression (Kenney & Holahan, 2008; Schleicher et al, 2009). In a study done by Kenney and Holahan (2008), students with fewer symptoms of depression smoked an average of 27 cigarettes fewer than students who reported a higher number of depressive symptoms per week. In a cross-sectional study of college students done by Ridner (2005), it was found that current smokers showed higher rates of symptoms of depression than non-smokers.

Studies have also found a relationship between symptoms of depression and eating disorders among college women. Results of a study conducted by VanBoven and Espelage (2006) found a significant positive correlational relationship between eating disorder symptoms

and symptoms of depression. A study done by Vikers et al. (2003) found that students who scored higher on the Centers for Epidemiological Studies Depression Scale (CES-D) also had significantly higher concerns with weight as measured by the Stanford Weight Concerns Scale.

Casual sex and engaging in risky sexual behavior have been identified as another high-risk behavior among students with depressive symptomology. In a cross-sectional study on students from a large university conducted by Swanholm, Vosvick, & Chng (2009), a significant positive correlation between higher scores on the CES-D and self-reported risky sexual behavior was identified. Grello, Welsh, and Harper (2006) found in their study on undergraduate students that female students with significantly higher depressive symptoms were more likely to engage in casual sexual relationships. Those females with the highest number of depressive symptoms also had the highest number of sexual partners. These authors posited that the females with depressive symptoms might seek out sexual relationships to lower their feeling of isolation and further their feeling of self-worth by engaging in sexual encounters (Grello, Welsh, & Harper, 2006).

Lastly, the misuse of alcohol is another consequence of depressive symptomology (Beck, et al., 2008). In a study of approximately 900 students, it was found that those students who were classified as depressed reported drinking less often in social settings but more often in a context of emotional pain (Beck, et al., 2008). It was thought that these students consumed alcohol as a means to cope with stress and alleviate emotional pain (Beck, et al., 2008). In a study done by Eshbaugh (2008), it was found that there was a significant correlation between depression, loneliness, stress, and problematic drinking. Furthermore, the study found that 29% of the students reported that their alcohol consumption had negatively affected their grades (Eshbaugh, 2008).

Suicide

Suicide is by far the greatest negative outcome of depression. Results from the 2008 National College Health Assessment Survey found that 95% of college students who reported suicidal ideation also had depressive symptoms (American College Health Association [ACHA], 2009). Studies have consistently shown that depressive symptomology is a common precursor to suicidal ideation and attempts (Conner et al., 2011; Wilcox et al., 2010).

According to the 2008 National College Health Assessment, more than one in three students reported that at least once in the past year they felt so depressed that it was hard to function, and one in ten reported that they had seriously considered attempting suicide (ACHA, 2009). In their study, Garlow, Rosenberg, and Moore (2008) found that 11% of students expressed current (e.g. within the past four weeks) suicidal ideation and they found suicidal ideation to be positively associated with testing positive for depression. It has been noted that the more symptoms of depression experienced by college students the higher their risk of suicide becomes (Taliaferro, Rienzo, Pigg, Miller, & Dodd, et al., 2008).

In an assessment of 26,685 students attending 40 various postsecondary institutions, it was found that 1.3% of students had attempted suicide and 6.4% had seriously contemplated suicide at least once in the past 12 months (ACHA, 2009). According to the CDC (2009), suicide accounts for approximately 1,100 student deaths each year. College students who suffer from suicidal ideation are in a unique position as they are faced with academic and social pressures distinct from their non-college attending peers (Wilcox et al., 2010). Furthermore, various psychiatric disorders first arise during young adulthood, and disorders such as depression are exacerbated by the added pressure to succeed academically and the burden of financial debt

(Wilcox et al., 2010). Given these factors, college students suffering from depression are at-risk for suicidal ideation.

Transitioning to College Life

Transitioning to college life can be an intimidating experience since some college students move far from home and most college students cope with newfound freedom, establish new romantic and platonic relationships, and are faced with increased homework and exam obligations (Tandoc, Ferrucci, & Duffy, 2015). Although many young adults find attending college to be an exciting time for intellectual and social development, many are unaware that the college years also bring about new stressors never encountered prior to attending college such as separation from family and friends, financial stress, and intensified academic demands (Brady, 2011). The transition to college life can leave students feeling stressed, lonely, anxious, confused, and inadequate, which puts students at risk for developing symptoms of depression (Brady, 2011).

For some young adults, going off to college is the first time they have been on their own. This can be stressful as they have to leave their well-established social circle and adjust to adult-life whereby they are required to be responsible for setting their own schedule, time management, social life, eating habits, and finances (London, 2010). Leaving home means leaving behind family and friends that offer support and familiarity. This separation has been identified as a stressor for college students (Alfeld-Liro & Sigelman, 1998). Sociologist Nancy Schlossberg (1998) found that many college students feel marginal and do not feel as though they matter in their new environment, which can lead to stress and ultimately feelings of depression. A study done in 2006 found that Americans now have fewer closer confidants than in

previous years; add in the transition to college life and the number of close confidants for students drops to nearly zero (McPherson, Smith-Lovin, & Brasheres, 2006).

The literature has also identified financial burden as a stressor linked to depression among college students. In the United States, tuition fees continue to rise as do student loans and student debt, while state support for higher education has declined. Tuition fees continue to increase faster than the rate of inflation (Higher Education Institute, 2007). Students obtain private loans or must work while enrolled in school. In one study, Andrews and Wilding (2004) found that financial difficulties experienced by undergraduate students influenced the development of symptoms of depression and anxiety.

Academic expectations have also been linked to stress, resulting in depressive symptomology. Watkins et al. (2011) surveyed college counselors who agreed that pressure from parents was a cause of depression, stress, and anxiety. According to the survey of college counselors, parents have elevated academic expectations of their children (Kruisselbrink-Flatt, 2013). In addition to experiencing pressure from their parents, students experience dramatically greater academic expectations from their professors compared to the expectations set by their high school teachers (Kadison & DiGeronimo, 2004). Subsequently, students who were used to receiving good grades in high school are often shocked to discover that their work was not as highly regarded by their college professors as in high school and ultimately, have difficulty developing the basic skills needed to improve their academic work (Kadison & DiGeronimo, 2004). As many as one-third of college freshmen feel overwhelmed by everything they have to do (Brown & Schiraldi, 2004). In a study by Eisenberg et al. (2013), 44.3% of respondents reported experiencing emotional difficulties that had a direct effect on their academic performance. Similar results were found from the 2005 National College Health Assessment

Survey. Data from the survey found that 46.1% of college students reported feeling so depressed that it was hard to function during the past academic school year (Taliaferro et al., 2008).

Determinants of Depression

Human behavior is influenced by a number of factors that are dependent on variances in culture, relationships, settings, and economic conditions (Jessor, Turbin, & Costa, 1998). These factors are also called "determinants" as they have the potential to determine or influence an individual's behaviors. Determinants can be either positive or negative. Depending on the determinants' effect, they are often viewed as a protective factor or a risk factor (Jessor et al., 1998).

Spirituality. Spirituality is one of the longest-standing phenomena known to mankind (Berry & York, 2011). The term spirituality is broad and has been defined by various people. Dr. Puchalski (2009), the director of the George Washington Institute for Spirituality and Health, defined it as the "aspect of humanity that refers to the way individuals seek and express meaning and purpose and the way they experience their connectedness to the moment, to self, to others, to nature, and to the significant or sacred." With that being said, the college years are a time for spiritual growth for many young adults as they begin to search for meaning in their own lives (Brady, 2011). During these years, students may begin to start questioning and examining their own thoughts and ideas pertaining to their spiritual beliefs (Bryant, Choi, & Ysauno, 2003). A review of the literature uncovered a few studies that have shown a negative correlation between higher levels of spirituality and depressive symptomology among college students (Muller & Dennis, 2007; Turner-Musa & Lipscomb, 2007). Most of the research regarding spirituality and depression, however, deals with populations other than college students (Taliaferro et al., 2009).

Spirituality continues to be an understudied variable in health-related research particularity regarding college student's mental and emotional health (Hill & Paragament, 2003). A great deal of the research measures religiosity as it pertains to church affiliation and attendance rather than spirituality (Greening & Stoppelbein, 2002). Spirituality may offer protection against depression and suicide by increasing one's capacity to uncover meaning and purpose in one's life (Taliaferro et al., 2009). Bryant and Astin (2008) found that students who struggled with spiritually experienced greater levels of mental health related symptoms, such as feeling depressed or overwhelmed.

In a large study done by the Higher Education Research Institute (2006), it was found that students with higher levels of self-reported spirituality exhibited lower levels of emotional distress and a greater capacity to deal with stress, but it did not directly address symptoms of depression. Because the studies are so few in number, it is of value to further investigate the potential for spirituality to serve as a protective factor against depressive symptomology among college students.

Work-school conflict. According to a study done by Georgetown University, approximately 14 million college students are employed while attending college (Carnevale, Smith, Melton, & Price, 2015). Further, 40% percent of undergraduate students and 76% of graduate students work a minimum of 30 hours a week, and about 25% of all students are both employed full-time and enrolled in college full-time (Carnevale et al., 2015). Markel and Frone (1998) found that students who are enrolled in college and work often face responsibilities that have the potential to interfere with their schoolwork, which results in a work-school conflict (WSC).

Both work and school require various demands on the same "finite pool of time and effort," which can lead to conflicts in the life of a student and has the potential to manifest in many, including health related, ways (Oviatt, Baumann, Bennett, & Garza, 2017). In a study done by Oviatt, Baumann, Bennett, and Garza (2017), 2,055 participants completed a web-based survey designed to measure undesirable effects of working and attending college. The study found that those who reported higher levels of WSC also reported higher levels of depressive symptomology, poorer physical health, and higher rates of substance abuse (Oviatt et al., 2017).

After reviewing the literature, it was found that there is an expansive body of research on work-family conflict with a focus on unhealthy behaviors as a consequence; however, very little research has focused on WSC. The research that has been done seems to focus on physical health rather than mental health consequences of WSC (Oviatt et al., 2017). As such, it is of worth to study whether employment status is a risk factor for developing symptoms of depression.

Commuter status. Today, students who commute have many more challenges compared to their counterparts who reside on campus. Many commuter students must juggle family life, work, and school as well as the commute. According to Horn and Berktold (1998), approximately 86% of college and university students are considered commuter students. A commuter student is defined as not living in any university-owned housing (Tenhouse, 2019). Commuter students are comprised of diverse backgrounds (Tenhouse, 2019). They encompass full-time and part-time students who live at home with their parents or live on their own. They may be married or have children, they may work full-time or part-time, and they range in age from the traditional 18 to 24 age group or to older adults (Tenhouse, 2019).

Commuter students face varied challenges because they do not reside on campus. Unlike residential students who live, eat, socialize, and study together in-residence halls, commuter

students have a hard time “fitting in” to the campus life and community (Tenhouse, 2019). They do not have as many opportunities to make friends or develop a supportive social network on campus.

Buote et al. (2007), found that resident students had more opportunities to establish close friendships compared to non-resident students. This development of closer social networks was found to have a positive effect on the students’ overall adjustment to college and resulted in lower rates of depressive symptomology. Additionally, Morris, Brooks, and May (2003) found that commuter students have substantially more time and role constraints than residential students. Due to their increased roles and responsibilities, commuter student often feel stressed and unable to meet all their obligations (Curasi & Burkhalter, 2009).

Although there are some benefits to being a residential student, there can also be some disadvantages. A study done by Lester (2013) found that those students who lived on campus had significantly higher depression scores compared to students who lived with their parents. Resident students also reported more lifetime suicidal ideation. Those living off-campus with roommates or by themselves had non-significant scores (Lester, 2013). This study, however, had several limitations. The study was done on a relatively small sample size of only 80 students who were all enrolled in a psychology course, and the male to female ratio was greatly skewed.

Newbold (2015) found that although the demographic characteristics of commuter students are reasonably understood, other factors, like stress and coping strategies, have not been thoroughly researched. Because stress has been linked to developing symptoms of depression, it is of use to investigate whether commuter students report having increased levels of depressive symptomology compared to residential students.

Social media use. Ahmad, Hussain, and Munir (2018) defined social media as an interactive media whereby users can send and receive messages, call each other, post comments, upload photos/videos, accept friends, and update personal statuses. There are several types of social media and different networking sites. Some of the more popular sites include Twitter, Instagram, MySpace, and Facebook, which is the largest social networking site with over 1.59 billion registered accounts (Ahmad, Hussain, & Munir, 2018). Social media use has been increasing among U.S. young adults; however, its association with mental health, particularly depression, remains unclear, especially among college students. Studies have shown a link between social media use and poor sleep, which consequently is known to contribute to depression (Alfano et al., 2009). A study done at the University of Glasgow found that young adults who reported being emotionally and actively involved in their digital lives self-reported higher levels of anxiety, worse sleep, and depression (Morgan & Cotten, 2003).

Various studies have found an association between social media use and symptoms of depression among young adults; however, there are conflicting findings that suggest there is no association between depression and social media use (Jelenchick, Eickhoff, & Moreno, 2013). For example, research has found an association with overall social media use and higher levels of depression (Banjanin, Dimitrijevic, & Pantic, 2015; Pantica, Todorovic, Topalovic, Bojovic-Jovic, & Ristic, 2012). Furthermore, studies continue to focus on young adults and not necessarily on college students as a population. Due to the conflicting research, it is important to further investigate the relationship between social media use and depressive symptomology among college students.

Purpose of the Study

The purpose of this study was to analyze and identify whether spirituality is a protective factor against the onset of depressive symptomology among college students and determine if certain variables are risk factors for developing symptoms of depression. With so many negative outcomes associated with depressive symptomology, it is of great importance to further investigate and examine potential protective factors and risk factors to add to the existing body of literature.

One particular aim of this study was to gain a richer understanding of how different lifestyle choices, while attending college, might protect students from developing symptoms of depression. The results of this study can be used to assist campus counseling centers with helping students learn to cope effectively with college stressors.

Research Questions

In this study there are four research questions.

Research question 1: Do students who report being more spiritual experience fewer symptoms of depression compared to those who report being less spiritual?

Research question 2: Do resident students report fewer symptoms of depression than commuter students?

Research question 3: Do unemployed students report fewer symptoms of depression than students who work either full-time or part-time?

Research question 4: Do students who spend more time on social media report greater symptoms of depression?

Hypotheses

In this study there are four hypotheses:

Hypothesis 1: Students who report being more spiritual will report fewer symptoms of depression compared to students who report being less spiritual.

Hypothesis 2: Resident students will have less symptoms of depression compared to commuter students.

Hypothesis 3: Unemployed students will report fewer symptoms of depression compared to students who work either full-time or part-time.

Hypothesis 4: Students who spend more time on social media outlets will report greater symptoms of depression than students with lower rates of social media usage.

Methods

Design

The current study uses a cross-sectional design and was conducted at private Christian university in Southern California. Primary data from a convenience sample was obtained from six different undergraduate lecture courses, and all data was collected during the fall semester of 2018.

Procedures

The principal investigator (PI) obtained permission to distribute surveys from four of ten professors who responded to an email requesting permission to distribute surveys (see Appendix A). The four professors and classes were chosen based on availability and ease of scheduling. Two professors allowed the PI to distribute surveys to two of their classes while the remaining two professors allowed the PI to distribute surveys to one of their classes. All students were read a script detailing what the study entailed and their rights as participants (see Appendix B). After providing students with information regarding the study, students were asked to sign a consent form acknowledging their willingness to participate in the study (see Appendix C). Those students who did not wish to participate were able to decline with no adverse consequences to their grade or standing at the university. If students choose not participate, they were instructed to turn their survey packet over and work on individual work. Students were informed that if they felt uncomfortable at any time, they could stop the survey or leave any answer(s) blank.

There was no compensation for participating in the study. To guarantee anonymity, participants were asked to not include their names on the survey packets. All participants were informed that some questions might elicit uncomfortable or distressing feelings, and therefore, all participants were provided with information regarding on-campus metal health services.

Information for on-campus services, including the phone number and hours of operation, were written on the class whiteboard for students to see. Participants completed a survey packet, which generally took 10-15 minutes to complete. Consent forms were collected prior to the collection of the survey packets and placed in a separate folder. Both the consent forms and the survey packets were stored in a locked safe.

Measures

The survey packet included a demographic section consisting of eight questions regarding gender, age, race/ethnicity, education level, commuter or resident status, employment status, and time spent on social media (Twitter, Instagram, Facebook, YouTube, Snapchat, other) measured in hours per day (see Appendix E). The following are examples of questions: *"What is your gender?"* and *"What is your age?"* (students were able to write in their age on the space provided). For the question regarding race/ethnicity, students were asked to circle their race/ethnicity from the following options: White (non-Hispanic), Hispanic/Latino, African American, Asian, Pacific Islander, or Other.

For the question, *"What year are you?"*, students had the option to circle: Freshman, Sophomore, Junior, or Senior. For the question, *"Are you a commuter student or resident student?"*, students were able to circle either "Commuter" or "Resident." To the question, *"Are you employed?"*, students could circle either "Yes" or "No." If students answered "Yes," they were given the option to circle either "Full-time" or "Part-time." The last question on the demographic survey asked, *"How many hours a day are you on social media outlets? (Facebook, Twitter, Snapchat, Instagram, other)."* Participants were able to circle one of the following: "Less than one hour," "1-2 hours," "3-4 hours," or "5 or more hours."

Participants then filled out the Daily Spiritual Experience Scale (DSES) and The Center for Epidemiological Studies Depression Scale (CES-D Scale). The Daily Spiritual Experiences Scale (DSES) is a 16-item self-reported scale developed to measure an individual's ordinary spiritual experiences (Underwood & Teresi, 2002) (see Appendix E). The DSES was designed to be finished in less than two minutes and measure spirituality, not specific behaviors or religious beliefs (Underwood & Teresi, 2002). Cronbach's alpha for the 16-item version has been consistently high, 0.89. Test-retest results have been reliable with a test-retest Pearson correlation of 0.85 (Underwood & Teresi, 2002). Permission to use the DSES was given by the lead survey developer, Dr. Underwood (see Appendix D).

The CES-D was developed in 1977 to provide a scale to measure depressive symptomology among the general population (Radloff, 1977). The CES-D Scale is a 20 question self-reported scale that focuses on the current level of depressive symptoms that an individual may be experiencing (Radloff, 1977). The questions on the CES-D Scale focus on measuring depressive symptomology during the past week. The CES-D is a widely used scale, and the internal consistency for the CES-D-20 ranges from 0.85 to 0.90. The test-retest reliability for the CES-D-20 ranges from 0.45 to 0.70 (Radloff, 1977).

Participants

Participants included undergraduate students from a private university in Southern California. A total of 226 student completed the survey. The sample size for this study was estimated at 220 using G*Power software (Faul, 2014).

Independent Variables

Spirituality was measured using the Daily Spiritual Experience Scale (DSES). The DSES is a 16-item self-reported questionnaire, designed to measure spiritual experiences. The first 15

items are rated on a 6-point Likert scale as follows: “many times a day,” “every day,” “most days,” “some days,” “once in a while,” and “never or almost never.” Item 16 is rated on a 4-point Likert scale with the following options: “not at all close,” “somewhat close,” “very close,” and “as close as possible” (Underwood, 2006). There is no cutoff score for the instrument; however, individuals with lower scores are thought to be demonstrating a greater number of spiritual experiences (Underwood, 2006).

The DSES is scored by totaling the scores for each of the items. Although there is no cutoff score for the instrument, individuals with lower scores are considered to be demonstrating a higher number of spiritual experiences. For the purpose of this study, and as suggested by Dr. Underwood, mean scores were used rather than total scores. This allowed the PI to examine individual items thought to be more predictive of greater spirituality. All items, with the exception of question 16, were scored as follows: “1 = Many times a day,” “2 = Every day,” “3 = Most days,” “4 = Some days,” “5 = Once in a while,” and “6 = Never or almost never.” Question 16 which asked, *“In general how close do you feel to God?”*, was scored as: “0 = Not at all,” “1 = Somewhat close,” “2 = Very close,” and “3= As close as possible.” For the purposes of this study only questions (1) *“I feel God’s presence.”*; (4) *“I find strength in my religion or spirituality”*; (5) *“I find comfort in my religion or spirituality”*; (6) *“I feel deep inner peace or harmony”*; (7) *“I ask God’s help in the midst of daily activities”*; (9) *“I feel God’s love for me directly”*; and (16) *“In general how close do you feel to God?”* were analyzed. Questions 1, 4, 5, 6, 7, 9, and 16 were chosen and analyzed as they were thought to be the most reflective of an individual’s spirituality. Items 1, 4, 5, 6, 7, and 9 were collapsed and recoded so that a score of 1-3 = 1 (Many times a day; Every day, Most days) and 4-6 = 2 (Some days, Once in a while, Never or almost never). Question 16 was collapsed and recoded so that 1-2 = 1 (Not at all, Somewhat

close) and 3-4 = 2 (Very Close, As close as possible). Scores were collapsed so that a Chi-Square test could be run. A Cronback's alpha showed an internal validity of .835 for the seven items tested.

A participant's resident status was measured using the demographic questionnaire item *"Are you a commuter student or resident student?"* Responses included "Commuter" or "Resident."

A participant's employment status was measured with the single item, *"Are you employed?"*, with the response of "Yes" or "No." This led to the follow-up question, *"If you are employed, are you fulltime or part-time?"*, the responses included the option of "Full-time" or "Part-time."

Social media use was measured using a single item measure, *"How many hours a day are you on social media outlets? (Facebook, Twitter, Snapchat, Instagram, other)."* Response options included: "Less than one hour," "1-2 hours," "3-4 hours," and "5 or more hours." In order to use a Chi-Square Test of Independence to analyze the question, *"Do students who spend more time on social media report more symptoms of depression?"*, the responses were collapsed to create a dichotomous variable. Thus, "Less than 1 hour" and "1-2 hours" was recoded to 1 and "3-4 hours" and "5 or more hours" was recoded to 2.

Dependent Variable

Depressive symptomology was measured using the 20-item Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). Scores are summed and range from 0 to 60, and higher scores indicate greater frequency and number of depressive symptoms. Participants scored their level of agreement with each of the 20 items on a 4-point Likert scale, which was rated on a scale as follows: "Rarely or none of the time," "Some or a little of the time,"

"Occasionally or a moderate amount of time," and "Most or all of the time" (Radloff, 1977). (See Appendix E for complete survey packet.) Once data was double entered and checked, it went through a recoding process to reflect the CES-D scoring guidelines so that a value of 0, 1, 2 or 3 was assigned to an answer depending on if a question was worded negatively or positively (Radloff, 1977).

For the CES-D scale, data was recoded to "1 = 0," "2 = 1," "3 = 2," "4 = 3" for items 1-3, 5-7, 9-11, 13-15, 17-20. The scoring was as follows: "0 = Rarely or none of the time (less than one day)," "1 = Some or a little of the time (1-2 days)," "2 = Occasionally or a moderate amount of time (3 -4 days)," and "3 = Most or 4 all of the time (5-7 days)." Items 4, 8, 12, and 16 were worded positively and as such were reversed scored: "0 = Most or all of the time (5-7 days)," "1 = Occasionally or a moderate amount of time," "2 = Some or a little of the time (1-2 days)," and "3 = Rarely or none of the time (less than 1 day)." The CES-D is scored by totaling the scores for each of the items. Radloff (1977) concluded that a score of 16 or more is indicative of depressive symptomology.

Data Analysis

All survey responses were manually entered into IBM SPSS Statistics for Windows, Version 25.0. Data was reviewed and entered twice to check for errors. Data analysis was performed using IBM SPSS 25 statistics software. Demographic data was expressed in frequencies. All research questions were analyzed using a Chi-Square Test of Independence. For the seven items analyzed on the DSES, a Bonferroni Correction was administered and resulted in a *P* value of .007. For all other variables, commuter status, employment status and social media use, a *P* value of .05 was used.

Results

Demographic characteristics of the sample population (N = 220) are displayed in Table 1. The study included 54 men 18-56 years old (M age = 21; SD = 5.49) and 166 women, 18-31 years old (M age = 19; SD = 2.25). White (non-Hispanic) students made up 42.7% of the sample, followed by 37.3% who reported being Hispanic/Latino. Freshman accounted for 40.0% of the population followed by juniors who accounted for 20.9% of the sample. Resident students living on-campus made up 54.5% of students in the study, and 45.5% of students commuted to school. Fifty-four-point five percent of students reported being employed with 49.5% of them working part-time. Regarding social media use, 41.8% reported using social media 1-2 hours a day followed by 36.8% using social media at least 3-4 hours a day. This study found that approximately 48% of students were experiencing symptoms of depression.

Findings

The current study aimed to answer several research questions. To answer these questions, data was analyzed using Chi-Square Tests of Independence to look at the relationships between variables.

Spirituality. The first research question was, *"Do students who report being more spiritual experience fewer symptoms of depression compared to those who report being less spiritual?"* To answer this question, seven items were analyzed from the DSES to determine if any of the variables were associated with lower rates of depressive symptomology. Of the seven items analyzed, one of the variables resulted in significant relationships. There was a significant association for the statement, *"I feel deep inner peace or harmony."* There was a significant association between feeling inner peace and harmony and having fewer symptoms of depression ($\chi^2(1) = 20.58$, $p = .000$). Those who reported feeling *"deep inner peace or harmony"* were

nearly four times more likely to not experience symptoms of depression (OR: 3.99, 95% CIs [2.17, 7.38]). Six of the seven items were found not to be significant: *"I feel God's love for me, directly"* ($\chi^2(1) = 6.49$, p = .011); *"I feel God's presence"* ($\chi^2(1) = 2.57$, p = .109); *"I find strength in my religion or spirituality"* ($\chi^2(1) = 3.15$, p = .076); *"I find comfort in my religion or spirituality"* ($\chi^2(1) = 2.78$, p = .096); and *"I ask for God's help in the midst of daily activities"* ($\chi^2(1) = 3.63$, p = .057). The last question analyzed was *"In general how close do you feel to God?"*, and there was no significant finding ($\chi^2(1) = 1.93$, p = .165). (See Table 2.)

It was hypothesized that students who reported being more spiritual would report fewer symptoms of depression. After analyzing seven items individually, it was found that only one of the seven questions had significant associations between reported higher levels of spirituality and fewer reported depressive symptoms.

Commuter status. The second research question was, *"Do resident students report fewer symptoms of depression than commuter students?"* It was hypothesized that resident students would report fewer symptoms of depression. Based on a Chi-Square Test of Independence, no significant relationship existed between being a resident student or a commuter student and reporting fewer symptoms of depression ($\chi^2(1) = .330$, p = .570). (See Table 4.)

Employment status. The third research question was, *"Do unemployed students report fewer symptoms of depression than students who work either fulltime or part-time?"* It was hypothesized that students who were unemployed would report fewer symptoms of depression. Based on a Chi-Square Test of Independence, no significant relationship was found ($\chi^2(1) = .037$, p = .847). (See Table 5.)

Social media use. The last research question was, *"Do students who spend more time on social media report more symptoms of depression?"* Based on data analysis, a significant

association between social media use and depressive symptoms was found ($\chi^2(1) = 4.79$, $p < .030$). It was hypothesized that students who spent more time on social media would report higher rates of depressive symptomology. The results of the study support the hypothesis in that those who reported being on social media less than three hours reported significantly less symptoms of depression compared to students who were on social media more than three hours (see Table 3). In fact, students who reported being on social media less than three hours were almost two times less likely to experience symptoms of depression (OR: 1.87, 95% CIs, [1.07, 3.29]).

Discussion

In this study, a cross-sectional, paper-based survey was utilized to determine whether four determinants acted as risk factors or provided protection against symptoms of depression among undergraduate students at a private Christian university. Considering that the rates of depression among college students continues to rise across campuses in the United States, it is of great importance to understand and continue to investigate potential factors that may have the ability to prevent the onset of depressive symptomology among this population.

Summary of Major Findings

The first aim of this study was to determine if students who reported being more spiritual report fewer symptoms of depression compared to those who report being less spiritual. Seven items from the Daily Spiritual Experience survey were used to answer this question. The seven items selected were considered to be most likely to represent deep spiritual feelings. Of the seven items analyzed, only one questions demonstrated a significant inverse relationship. The first significant relationship was for the statement, *"I feel deep inner peace or harmony."* There was a significant inverse relationship between feeling inner peace or harmony and having fewer symptoms of depression.

Despite only one of the seven items being significant, the importance of spirituality should not be overlooked when examining depression among college students. This study, as with other studies, supports the notion that spirituality can play an important role in protecting students from developing symptoms of depression. Previous research has found that spiritualty may offer protection against depression and suicide by enabling young people to find purpose and meaning in their lives (Taliaferro et al., 2009). The current findings of this study suggest that spirituality has the potential to promote mental health and well-being.

Several studies have found significant associations between spirituality and depressive symptoms among college students. For example, Bryant and Astin, (2008) found that spiritual struggles were positively associated with being depressed, feeling overwhelmed, feeling anxious and being stressed. In addition, studies done by Muller and Dennis (2007) and Turner-Musa and Lipscomb (2007) found negative correlations between higher levels of spirituality and depressive symptoms among college students. Spirituality continues to be an understudied factor in the lives of young people especially when data has shown spiritual well-being to enhance an individual's ability to find meaning in his or her life even under stress (Taliaferro et al., 2009).

This study did not find any significant association between having fewer symptoms of depression and living on-campus or commuting to campus. An explanation of this finding could be that the study only looked at students who lived on-campus and those who commuted; it did not examine feelings of social support or duration of commute. Prior studies have found that students who lived with their parents reported fewer symptoms of depression compared to those who lived on-campus (Lester, 2003). It could be that students who commute might continue to maintain a strong social networks and resident students might have opportunities to develop new social networks on-campus.

The third research question examined whether unemployed students report fewer symptoms of depression compared to students who work either full-time or part-time. This question did not result in a significant finding. However, the current study only examined whether a student worked or did not work. Other factors were not accounted for such as if being unemployed was a choice or not. Also, this study did not account for actual hours worked or analyze student's attitudes towards being employed or unemployed. In a study done by Oviatt et al. (2017) it was found that students who reported higher work-school conflict also reported

greater symptoms of depression. Although the current study did not yield any significant results, it is of value to continue examining the relationship between WSC and psychological well-being among college students.

The fourth research question explored whether students who spent more time on social media reported greater symptoms of depression compared to those who spent less time on social media. This study did find a significant association between higher rates of reported social media use and higher rates of depressive symptomology among college students. It is unknown whether increased social media use often results in depressive symptomology or whether those who are already displaying symptoms of depression use social media more frequently. Social media use and depression among college students should continue to be studied as most research focuses on other populations. It is also important for further research to identify the direction of the association between depression and social media use. A better understanding of depression and social media use will assist counseling centers to find and adapt new ways to educate students on how to practice better and healthier social media habits.

Public Health Implications

The rates of depression among the general population, as well as college students, continues to increase (Blanco et al., 2008). Depression is a serious and potentially life-threatening mental health disorder. It continues to be a disabling and prevalent condition that warrants public health concern in the United States (McLaughlin, 2011). Depression has many public health implications that affect the population medically, economically, and socially. This study aimed to analyze factors that might prevent college students from developing symptoms of depression. Although depression is very well studied and researched, there seems to be more

emphasis on treatment rather than prevention (McLaughlin, 2011). This study, and others like it, are important for investigating determinants that might influence depressive symptomology.

There are many high-risk behaviors, as well as chronic medical conditions, frequently associated with depression, including asthma, diabetes, and arthritis (Jacob, 2012). According to Jacob (2012), mental health disorders contribute to approximately 13% of the global burden of disease. Depression is projected to be the largest contributor to mental health disorders by 2030 (Jacob, 2012). In the United States, the financial impact of this burden is significant with mental disorders anticipated to cost approximately one-third of the estimated $47 trillion spent on all non-communicable diseases (Jacob, 2012).

There are also social consequences of depression. For example, poverty has been linked to depression, and there is a consistent relationship between low education and depression (Patel & Kleinman, 2003). By far the most detrimental and serious negative outcome associated with depressive symptoms is suicide. The American College Health Association (2014) reports that as many as 8.6% of college students have considered suicide within the past 12 months with as many as 1.4% of these students acting on their suicidal thoughts and attempting suicide in the past year. For this reason, it is vital to the public health community continue to study and investigate ways to prevent and identify depression among college students before they reach drastic measures.

Study Limitations

This study, as with all studies, has inherent methodological limitations. The participants of this study were obtained by means of a convenience sample, and surveys took place at a private Christian university, which might have resulted in limited variability among participants. Therefore, it is not representative of college students nor can the findings be generalized to other

groups or populations. In addition, this study utilized a cross-sectional design that did not allow the investigator to determine causality, and because it was based on participant self-reporting, there could have been inaccurate reporting from students. Furthermore, it is possible that the limited findings in this study are a result of analyzing only seven items on the DSES (Underwood & Teresi, 2002). Lastly, this study was conducted in the fall of 2018 when classes had just begun. It could be that students were not yet experiencing symptoms of depression because they had not been faced with end of the year stressors.

Conclusion

Attending college can be an exciting time for students as they embark on their journey into adulthood. It can also be a stressful period in their lives as they learn to cope with and deal with new stressors and new problems never experienced or encountered before. College campuses and universities are in a unique position to help identify when students are displaying problematic issues regarding their mental health. It is essential that campus counseling centers have the necessary resources to assist students with balancing college life and their mental well-being. It is important that campuses develop programs to target specific student populations that may be more at-risk for developing symptoms of depression. The results of this study should further steer counseling centers to take a comprehensive and holistic approach to dealing with depression on campus.

References

Ahmad, N., Hussain, S., & Munir, N. (2018). Social Networking and Depression among University Students. *Pakistan Journal of Medical Research*, *57*.

Alfano, C. A., Zakem, A. H., Costa, N. M., Taylor, L.K., & Weems, C. F. (2009). Sleep problems and their relation to cognitive factors, anxiety, and depressive symptoms in children and adolescents. *Depression & Anxiety*, 26(6), 503-512.

American College Health Association. (2014). *National college health assessment II: Undergraduate students reference group executive summary, Spring 2014*. Retrieved from http://www.acha-ncha.org/docs/ACHA-NCHA-II_ReferenceGroup_ExecutiveSummary_Spring2014.pdf

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*. Arlington, VA: American Psychiatric Pub.

American Psychological Association. (2011, September). The crisis on campus. Retrieved from https://www.apa.org/monitor/2011/09/crisis-campus

Assari, S. (2018). Multiplicative Effects of Social and Psychological Risk Factors on College Students' Suicidal Behaviors. *Brain Sciences*, *8*(5), 91. doi:10.3390/brainsci8050091

Banjanin, N., Banjanin, N., Dimitrijevic, I., & Pantic, I. (2015). Relationship between internet use and depression: Focus on physiological mood oscillations, social networking and online addictive behavior. *Computers in Human Behavior*, *43*, 308-312. doi:10.1016/j.chb.2014.11.013

BASC3. (2013). Major Depressive Disorder. Retrieved from https://images.pearsonclinical.com/images/assets/basc-3/basc3resources/DSM5_DiagnosticCriteria_MajorDepressiveDisorder.pdf

Beck, K. H., Arria, A. M., Calderia, K. M., Vincent, K. B., O'Grady, K. E., & Wish, E.D. (2008). Social context of drinking and alcohol problems among college students. *American Journal of Health Behavior, 32*(4), 420-430.

Berry, D. M., & York, K. (2011). Depression and religiosity and/or spirituality in college: A longitudinal survey of students in the USA. *Nursing & Health Sciences*, *13*(1), 76-83. doi:10.1111/j.1442-2018.2011.00584.x

Blanco, C., Okuda, M., Wright, C., Hasin, D. S., Grant, B. F., Liu, S., & Olfson, M. (2008). Mental health of college students and their non-college-attending peers. *Archives of General Psychiatry, 65*(12), 1429-1437.

Blue Cross Blue Shield. (2018, May). Major Depression: The Impact on Overall Health | Blue Cross Blue Shield. Retrieved from https://www.bcbs.com/the-health-of-america/reports/major-depression-the-impact-overall-health

Brandy, J. M. (2011). Depression in Freshman College Students. Retrieved from https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1176&context=luc_diss

Brown, S. L. & Schiraldi, G. R. (2004). Reducing subclinical symptoms of anxiety and depression: A comparison of two college courses. American Journal of Health Education, 35(3), 158-164.

Bryant, A. N., Choi, J. Y., & Yasuno, M. (2003). Understanding the religious and spiritual dimensions of students' lives in the first year of college. *Journal of College Student Development*, 44(6), 723-745.

Bryant, A.N. & Astin, H.S. (2008). The correlates of spiritual struggle during the college years. *Journal of Higher Education*, *79*, 1–27. doi:10.1353/jhe.2008.0000 [CrossRef]

Buote, V. M., Pancer, S. M., Pratt, M. W., Adams, G., Birnie-Lefcovitch, S., Polivy, J., & Wintre, M. G. (2007). The Importance of Friends. *Journal of Adolescent Research*, *22*(6), 665-689. doi:10.1177/0743558407306344

Centers For Disease Control and Prevention. (2009). Suicide and Self-Inflicted Injury. Centers for Disease Control and Prevention, Washington D.C.

Centers For Disease Control And Prevention. (2018). Prevalence of Depression Among Adults Aged 20 and Over: United States, 2013–2016. Retrieved from https://www.cdc.gov/nchs/products/databriefs/db303.htm

Channabasavanna SM, Sriram TG, Kumar K. Results from the Bangalore Centre. In: Ustun TB, Sartorius N, editors. Mental illness in general health care: An International study. Chichester: John Wiley & Sons; 1995. pp. 79–98.

Conner, K.R., Gunzler D., Tang W., Tu X.M., Maisto S.A. (2011). Test of a clinical model of drinking and suicidal risk Alcoholism: Clinical and Experimental Research, 35 (1), pp. 60-68, 10.1111/j.1530-0277.2010.01322.x

Curasi, C.F., Burkhalter, J. N. (2009). An examination of the motivation of business university students. *Business Education Digest*, 18, 1-18.

Eisenberg, D., Hunt, J., & Speer, N. (2013). Mental Health in American Colleges and Universities. *The Journal of Nervous and Mental Disease, 201*(1), 60-67. doi:10.1097/nmd.0b013e31827ab077

Faul, F. (2014). G*Power 3.1 Universitat Kiel, Germany Nasiri-Amiri, F., Tehrani, F., Simbar, M., Montazeri, A.,

Garlow SJ, Rosenberg J, Moore JD. (2008). Depression, desperation, and suicidal ideation in college students: Results from the American Foundation for Suicidal Screening Project at Emory University. Depression and Anxiety. 25:482–488.I

Greening, L., & Stoppelbein, L. (2002). Religiosity, Attributional Style, and Social Support as Psychosocial Buffers for African American and White Adolescents? Perceived Risk for Suicide. *Suicide and Life-Threatening Behavior*, *32*(4), 404-417. doi:10.1521/suli.32.4.404.22333

Horn, Laura J., and Berktold, Jennifer. 1998. *Profile of Undergraduates in U.S. Postsecondary Education Institutions: 1995-96.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education (NCES 98-084).

Jacob, K. S. (2012). Depression: a major public health problem in need of a multi-sectoral response. *The Indian Journal of Medical Research*, *136*(4), 537-539. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3516018/

Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2013). "Facebook Depression?" Social Networking Site Use and Depression in Older Adolescents. *Journal of Adolescent Health*, *52*(1), 128-130. doi:10.1016/j.jadohealth.2012.05.008

Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Risk and Protection in Successful Outcomes Among Disadvantaged Adolescents. *Applied Developmental Science*, *2*(4), 194-208. doi:10.1207/s1532480xads0204_3

Kisch J., Leino EV., Silverman, MM., (2005). Aspects of suicidal behavior, depression, and treatment in college students: results from the Spring 2000 National College Health Assessment Survey. *Suicide Life Threat Behav. 35: 3-13.*

Kruisselbrink-Flatt, A. (2013). A Suffering Generation: Six Factors Contributing to the Mental Health Crisis in North American Higher Education. *College Quarterly*, *16*(1), 17. Retrieved from http://www.collegequarterly.ca

Lester, D. (2013). Depression and Suicidal Ideation in College Students: A Preliminary Study of Campus Variables. *Psychological Reports*, *112*(1), 106-108. doi:10.2466/12.02.10.pr0.112.1.106-108

London, R. (2010). Going Off to College. Retrieved from https://www.psychologytoday.com/us/blog/two-minute-shrink/201005/going-college

Mackenzie, S., Wiegel, J. R., Mundt, M., Brown, D., Saewyc, E., Heiligenstein, E., Fleming, M. (2011). Depression and suicide ideation among college students accessing campus health care. American Journal of Orthopsychiatry, 81(1), 101-107. Doi:10.111/j.1939-0025.2010.01077.x

McLaughlin K. A. (2011). The public health impact of major depression: a call for interdisciplinary prevention efforts. *Prevention science : the official journal of the Society for Prevention Research*, *12*(4), 361–371. doi:10.1007/s11121-011-0231-8

Morgan, C., & Cotten, S. R. (2003). The Relationship between Internet Activities and Depressive Symptoms in a Sample of College Freshmen. *CyberPsychology & Behavior*, *6*(2), 133-142. doi:10.1089/109493103321640329

Morris, E. A., Brooks, P.R., & May, J. L. (2003). The relationship between achievement goal orientation and coping style. *College Student Journal,* 37(1), 3-8.

Muller, S. M., & Dennis, D. L. (2007). Life change and spirituality among a college student cohort. *Journal of American College Health, 56*(1), 55-59.

National Institute of Mental Health. (2017). NIMH » Major Depression. Retrieved from https://www.nimh.nih.gov/health/statistics/major-depression.shtml

Nelson, D., Misra, K., Sype, G. E., & Mackie, W. (2016). An Analysis Of The Relationship Between Distance From Campus And Gpa Of Commuter Students. *Journal of International Education Research (JIER)*, *12*(1), 37. doi:10.19030/jier.v12i1.9565

Newbold, J. J. (2015). Lifestyle Challenges for Commuter Students. *New Directions for Student Services*, *2015*(150), 79-86. doi:10.1002/ss.20129

Pantica, I., Todorovic, A., Topalovic, J., Bojovic-Jovic, D., & Ristic, S. (2012). Association Between Online Social Networking And Depression in High School Students: Behavioral Physiology Viewpoint. *Psychiatria Danubina*, *24*(1), 90-93.

Patel V, Kleinman A. Poverty and common mental disorders in developing countries. Bull World Health Organ. 2003;81:609–15

Pulchaski, C., Ferrell, B., Virani, R., Otis-Green, S., et al. (2009) Improving the quality of spiritual care as a dimension of palliative care: The report of the consensus conference. *Journal of Palliative Medicine*, 12:886-904.

Radloff, L. S. (1977). The CES-D Scale:A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Reid, G., Holt, M., Bowman, C., Espelage, D., & Green, J. (2016). Perceived Social Support and Mental Health among First-Year College Students with Histories of Bullying Victimization. Journal Of Child & Family Studies, 25(11), 3331-3341. doi:10.1007/s10826-016-0477-7

Schlossberg, N. K. (1998). Marginality and mattering: Key issues in building community. In D. C. Roberts (ED.), *Designing campus activities to foster a sense of community* (pp. 5-15). San Francisco: Jossey-Bass.

Suicide Prevention, Awareness, and Support. (n.d.). College Student Suicide at Suicide.org! College Student Suicide at Suicide.org! College Student Suicide at Suicide.org! Retrieved from http://www.suicide.org/college-student-suicide.html

Swanholm, E., Vosvick, M., & Chng, C. (2009). Pessimism, trauma, risky sex: Covariates of depression in college students. *American Journal of Health Behavior, 33*(3), 309-318.

Taliaferro, L. A., Rienzo, B. A., Pigg, R. M., Miller, M. D., & Dodd, V. J. (2009). Spiritual Well-Being and Suicidal Ideation Among College Students. *Journal of American College Health*, *58*(1), 83-90. doi:10.3200/jach.58.1.83-90

Tandoc, E. C., Ferrucci, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is facebooking depressing? *Computers in Human Behavior*, *43*, 139-146. doi:10.1016/j.chb.2014.10.053

Tenhouse, A.M., (2019). Commuter Students - Commuter Student Challenges - Campus, Time, College, and University - StateUniversity.com http://education.stateuniversity.com/pages/1875/Commuter-Students.html#ixzz5X9LHO5HB

The National Institute of Mental Health (NIMH), Major Depression. (n.d.). Retrieved from https://www.nimh.nih.gov/health/statistics/major-depression.shtml

Turner-Musa, J., & Lipscomb, L. (2007). Spirituality and social support on health behaviors of African American undergraduates. *American Journal of Health Behavior*, 31(5), 495-501.

Underwood, L. G. (2006). Ordinary spiritual experience: Qualitative research, interpretive guidelines, and population distribution for the daily spiritual experiences scale. Archive for the Psychology of Religion, 28(1), 181-218

Underwood, L. G., & Teresi, J. A. (2002). The daily spiritual experiences scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. *Annals of Behavioral Medicine, 24*(1), 22-33.

Wilcox, H. C., Arria, A. M., Caldeira, K. M., Vincent, K. B., Pinchevsky, G. M., & O'Grady, K. E. (2010). Prevalence and predictors of persistent suicide ideation, plans, and attempts during college. *Journal of Affective Disorders*, *127*(1-3), 287-294. doi:10.1016/j.jad.2010.04.017

Appendix A: Request to Distribute Surveys

To: Professor ( )
Re: Consent to recruit from your (class)

Hello (Professor),

I am writing you to request permission to distribute a survey to your students on Date/Time, to assist me with my thesis project for the obtainment of my Masters in Public Health degree. If there is a better date and time for you please let me know and I will make myself available. The study deals with trying to identify protective factors against symptoms of depression. The survey will consist of a demographics portion, the Daily Spiritual Experience survey and the Center for Epidemiological Studies Depression Scale (CES).

The entire process should take approximately 15 minutes of class time to complete. Feel free to ask any questions. Below is the information for my Full Board approval.

Thank you for your consideration in this request.

Olivia J. Navarro

Appendix B: Recruitment Script

Hello class, and thank you Professor (_____) for allowing me to be here today. My name is Olivia Navarro and I am a graduate student working on my master's degree in Public Health, here at CBU. I am here today to request your participation in my research study. My research deals with identifying variables that may protect students against symptoms of depression. I will be passing out a consent form that I will need you to read and if you choose to participate, I will need you to date, print and sign your name. If you do choose to participate, I will collect your consent form and you will then fill out the survey packet.

In the packet you will fill out a demographics portion, a survey called The Daily Spiritual Experience Scale and the Centers for Epidemiological Studies Depression Scale. It should take approximately 5-10 minutes of your class time. Your participation is completely voluntary, and you can choose to not participate. If you do not wish to participate in the study, you may simply turn over your packet and work on individual work. Your decision to participate or not participate will have no impact on your grade or standing. If at any time you wish to withdraw from the study, you may without any negative consequences. If you do not feel comfortable answering a question, you may leave it blank. This study is not meant to diagnose, it will be used as a tool to potentially identify protective factors against symptoms of depression. Please do not write your name on your survey packet.

If you have questions you can ask them now or if you would prefer to ask a question in private, you can reach myself at, Oliviajamile.navarro@calbaptist.edu or my thesis chair, Melissa Wigginton at, mwigginton@calbaptist.edu . If you feel like you need to talk to someone you also have the Counseling Center available to you at (951) 689-1120, Monday – Thursday 8am to 8pm and Fridays from 8am to 6pm.

Thank you.

Appendix C: Consent Form

Consent Form

You are being asked to participate in a survey conducted by Olivia J. Navarro, Master of Public Health student in the Department of Public Health Sciences at California Baptist University, under the supervision of Dr. Melissa Wigginton. The Institutional Review Board at CBU has reviewed and approved this study.

Purpose of the Study: The purpose of this study is analyze and evaluate variables that can potentially be protective factors against symptoms of depression among college students.

Participation: You are being asked to complete a survey that asks questions regarding your demographics, level of spirituality and a survey which will measure whether or not you have depressive symptoms. This study is not meant to diagnose participants. The survey will take approximately 5-10 minutes of class time to complete. The survey will be submitted anonymously, there will be no way to connect the student's identity to the surveys. Please do not write your name on the survey booklet. Participation in this study is completely voluntary and you may withdraw from this study at any time. You are not required to answer any questions that you do not feel comfortable answering.

Risks and Benefits: A potential risk of completing this survey is that you may feel anxious or uncomfortable about certain questions asked of you during this survey. If at any time you feel uncomfortable, you may stop the survey. After the survey if you have any questions you can contact Olivia J. Navarro the (PI), or Dr. Wigginton. You may also contact the CBU Counseling Center at (951) 689-1120, Monday – Thursday 8am to 8pm and Fridays from 8am to 6pm. By participating in this survey you will help provide important data regarding potential protective factors against depressive symptomology. Information obtained can potentially help students who are suffering from symptoms of depression.

Compensation: There are no incentives for participating in this study.

Voluntary Participation: Your participation in this study is completely voluntary. Your decision to participate in this study will not impact your grade or current or future standing at CBU. You may stop at any time without any negative consequences.

Confidentiality: All data collected is anonymous, your identity will not be connected to your survey responses**.** In order to preserve the confidentiality of your responses, please DO NOT WRITE YOUR NAME ANYWHERE ON THE SURVEY. Only the PI and the faculty advisor will view your responses. Data collected will be stored in a secure location. If you have any questions about the study you may ask them now or you may contact the (PI) Olivia J. Navarro at oliviajamile.navarro@calbaptist.edu , or Dr. Wigginton (Thesis Chair) at (951) 552-8537 or mwigginton@calbaptist.edu .

If you have questions regarding your rights as a research participant, please contact the IRB, the committee that reviewed this research to ensure participant welfare, IRB@calbaptist.edu

I understand the above information and have had all of my questions about participation in this study answered. My signature below indicates my consent to participate in this research study.

Participant's Signature: _____ Date: _____
Participant's Printed Name: _____

Appendix D: Permission To Use DSES

You have my permission to use the Daily Spiritual Experience Scale for non-profit use if you return the attached registration form to me and agree to the terms of use.

I have written a book on the scale designed for personal and professional use, *Spiritual Connection in Daily Life: 16 Little Questions That Can Make a Big Difference,* and it has been published in paperback.
Information on it can be found at www.lynnunderwood.com/book
I think it would be helpful in your work with the scale. It is not expensive, and is on Amazon and in bookstores. In 2016 an international ebook is now available on Amazon international sites.

There was a recent public radio interview on the scale
http://www.abc.net.au/radionational/programs/spiritofthings/are-you-spiritually-connected/8376242
You might find it of interest.

Best wishes to you in your life and in your work,

Lynn Underwood PhD
Senior Research Associate
Inamori International Center for Ethics,
Case Western Reserve University

Appendix E: Survey Packet

Demographics Survey

1. What is your gender?
    - Male
    - Female
2. What is your age? _____
3. What is your race/ethnicity?
    - White (non-Hispanic)
    - Hispanic/Latino
    - African American
    - Asian
    - Pacific Islander
    - Other
4. What year are you?
    - Freshman
    - Sophomore
    - Junior
    - Senior
5. Are you a commuter student or resident student?
    - Commuter
    - Resident
6. Are you employed?

- Yes
- No

7. If you are employed, are you fulltime or part-time?
    - Fulltime
    - Part-time
8. How many hours a day are you on social media outlets? (Facebook, Twitter, Snapchat, Instagram, other)
    - Less than one hour
    - 1-2 hours
    - 3-4 hours
    - 5 or more hours

DAILY SPIRITUAL EXPERIENCE SCALE

The list that follows includes items you may or may not experience. Please consider how often you directly have this experience, and try to disregard whether you feel you should or should not have these experiences. A number of items use the word 'God.' If this word is not a comfortable one for you, please substitute another word which calls to mind the divine or holy for you.

	Many times a day	Every day	Most days	Some days	Once in a while	Never or almost never
A1. I feel God's presence.						
A2. I experience a connection to all of life.						
A3. During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.						
A4. I find strength in my religion or spirituality.						
A5. I find comfort in my religion or spirituality.						
A6. I feel deep inner peace or harmony.						
A7. I ask for God's help in the midst of daily activities.						
A8. I feel guided by God in the midst of daily activities.						
A9. I feel God's love for me, directly.						
A10. I feel God's love for me, through others.						
A11. I am spiritually touched by the beauty of creation.						
A12. I feel thankful for my blessings.						
A13. I feel a selfless caring for others.						

A14. I accept others even when they do things I think are wrong.						
A15. I desire to be closer to God or in union with the divine.						

	Not at all	Somewhat close	Very close	As close as possible
AA1. In general, how close do you feel to God?				

 Underwood, LG. 2006. Ordinary Spiritual Experience: Qualitative Research, Interpretive Guidelines, and Population Distribution for the Daily Spiritual Experience Scale. Archive for the Psychology of Religion/Archiv für Religionspsychologie, 28:1 181-218.

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

During the past week.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
B1. I was bothered by things that usually don't bother me.				
B2. I did not feel like eating; my appetite was poor.				
B3. I felt that I could not shake off the blues even with help from my family or friends.				
B4. I felt I was just as good as other people.				
B5. I had trouble keeping my mind on what I was doing.				
B6. I felt depressed.				
B7. I felt that everything I did was an effort.				
B8. I felt hopeful about the future.				
B9. I thought my life had been a failure.				
B10. I felt fearful.				
B11. My sleep was restless.				
B12. I was happy.				
B13. I talked less than usual.				
B14. I felt lonely.				

B15. People were unfriendly.				
B16. I enjoyed life.				
B17. I had crying spells.				
B18. I felt sad.				
B19. I felt that people dislike me.				
B20. I could not get “going”.				

Appendix F: Tables

Table 1
Demographic Description of Population

Variable	n	%
Gender		
Male	54	24.5
Female	166	75.5
Age		
18-21	177	80.5
22-26	30	13.7
27-56	8	3.8
Missing	5	2.3
Race/Ethnicity		
White	94	42.7
Hispanic	82	37.3
African American	14	6.4
Asian	12	5.5
Pacific Islander	2	.9
Other	16	7.3
Year		
Freshman	88	40.0
Sophomore	43	19.5
Junior	46	20.9
Senior	42	19.1
Commuter	100	45.5
Resident	120	54.5
Employed	120	54.5
Yes	96	43.6
No		
Hours on Social Media		
Less than one hour	20	9.1
1-2 hours	92	41.8
3-4 hours	81	36.8
5 or more hours	26	11.8

Note. n = 220

Table 2

Chi-Square Table of DSES and Depressive Symptomology

	Depressive Symptoms						
	Less than 16	16+	X^2	df	*p*	*OR*	95% CI
"I feel deep inner peace or harmony"							
Many/Every/Most Days	79	42	20.57	1	.000	3.997	[2.166, 7.377]
Some/Once in awhile/Never	24	51					
"I feel God's love for me directly"							
Many/Every/Most Days	82	58	6.48	1	.011	2.249	[1.197, 4.225]
Some/Once in awhile/Never	22	35					
"I feel God's presence"							
Many/Every/Most Days	76	58	2.57	1	.109	1.627	[.896, 2.954
Some/Once in awhile/Never	29	36					
"I find strength in my religion or spirituality"							
Many/Every/Most Days	86	67	3.15	1	.076	1.824	[.935, 3.558]
Some/Once in awhile/Never	19	27					
"I find comfort in my religion or spirituality"							
Many/Every/Most Days	91	73	2.77	1	.096	1.870	[.889, 3.931]
Some/Once in awhile/Never	14	21					
"I ask for God's help in the midst of daily activities"							
Many/Every/Most Days	80	60	3.63	1	.057	1.813	[.980, 3.355]
Some/Once in awhile/Never	25	34					
"In general, how close do you feel to God?"							
Not at all/Somewhat close	89	85	1.93	1	.165	.393	[.101, 1.530]
Very close/As close as possible	8	3					

Note. $n = 220$, $P = .007$

Table 3
Chi-Square Table of Social Media Use and Depressive Symptomology

	Depressive Symptoms						
	Less than 16	16+	X^2	df	*p*	*OR*	95% CI
"How many hours a day are you on social media outlets"							
Less than one hour/1-2 hours	61	40	4.79	1	.03	1.90	[1.07, 3.30]
3-4 hours/5 or more hours	44	54					

Note. $n = 220$, $P = .05$

Table 4

Chi-Square Table of Commuter/Resident Status and Depressive Symptomology

	Depressive Symptoms						
	Less than 16	16+	X^2	df	*p*	*OR*	95% CI
"Are you a commuter student or resident student?"							
Commuter	46	45	.330	1	.566	.849	[.485, 1.485]
Resident	59	49					

Note. $n = 220$, $P = .05$

Table 5

Chi-Square Table of Employment Status and Depressive Symptomology

	Depressive Symptoms						
	Less than 16	16+	X^2	df	*p*	*OR*	95% CI
"Are you employed?"							
Yes	59	52	.037	1	.847	1.06	[.600, 1.861]
No	44	41					

Note. $n = 220$, $P = .05$