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Spirituality, Sexual Orientation, and Mental Health Among College Students

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Dedication

This thesis is dedicated to all those who are living with depression and anxiety disorders. My experiences with major depressive disorder (recurrent, severe), generalized anxiety disorder, and social anxiety disorder are what drove me to this area of research. Trying to understand my own sadness and pain led me to try to understand others', and then to look for ways to help. To everyone who gets up and faces the crushing darkness or the crippling panic, or both, every day for one more day: this work is for you, it is for me, it is for all of us.

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Abstract

The purpose of this study was to determine whether sexual orientation and spiritual practice affect depression and anxiety symptoms among non-heterosexual college students. Participants (n=11) were non-heterosexual college students between the ages of 18 and 26 recruited from the University of Central Oklahoma's Student Alliance For Equality. The sample size was eleven students. Data were collected using the *Brief Multidimensional Measure of Religiousness/Spirituality*, the *Beck Depression Inventory II*, and the *Beck Anxiety Inventory.* The independent variable of spiritual practice divided participants into two groups: those with an active spiritual practice and those with no active spiritual practice. Two independent *t* tests were conducted with the dependent variables depression and anxiety. Statistical analysis found no statistically significant differences in mean scores, and small effect sizes, for depression ($p = .832$, $d = .315$) and anxiety ($p = .736$, $d = .241$) by spiritual practice. These findings highlight the need for further research with consistent use of reliable and valid survey instruments.

Chapter One: Introduction and Background

In the United States, as of 2014, an estimated 43.6 million adults have a clinically diagnosable mental illness (National Institute of Mental Health, 2016b). The National Alliance on Mental Illness (NAMI) breaks this down to one in five Americans (NAMI, 2016a). Treatment rates for adults with any mental health disorder are only at 41% nationwide (NAMI, 2016b). For adults living with anxiety, only 36.9% are receiving any treatment (NIMH, 2016a). Major depression is a leading cause for hospitalizations in the U.S. (NAMI, 2016a). Every year America loses $193.2 billion in earnings and spends $300 billion because of serious mental illnesses (NAMI, 2016a; NIMH, 2002). When divided into age groups, 20.1% of 18-25 year olds live with a mental illness. Among 18-29 year olds, 30.2% have an anxiety disorder, while 9.3% of 18-25 years olds have experienced a major depressive disorder within the last 12 months (NIMH, 2016c). Within major depressive episodes, 18-25 year olds represented 6% of the total population of those dealing with severe impairments to their daily functioning because of their depression (NIMH).

In 2013 12.2 million 18-24 year olds were enrolled in college (Institute of Education Sciences National Center for Educational Statistics, 2015). College enrollments are continually increasing: between 2000 and 2015, enrollment increased by 4.9 million (IES NCES, 2015). Because college is a time of transition, with students often living on their own for the first time and experiencing high academic stressors, college students are particularly at risk for experiencing mental illness (Blanco, Okuda, Wright, Hasin, Grant, Liu, & Olfson, 2008; Said, Kypri, & Bowman, 2012). Lifetime mental health disorders are often diagnosed in young adulthood (Hunt & Eisenberg, 2010).

These national statistics break the populations down into only three categories: gender, age, and race. Nationally representative data are not being reported to describe mental health burdens by sexual orientation. Disparities in mental health rates between individuals of minority sexual orientations are well documented in academic journals, though they are not as widely acknowledged by national health organizations. In the interest of fairness, it has been only 30 years since homosexuality was classified as a diagnosable psychiatric disorder (Cochran, 2001; Lhomond, Saurel-Cubizolles, & Michaels, 2014). In a *USA Today* article, five physicians noted this diagnosis was a reflection of the social standards of the era rather than an accurate placement in the *Diagnostic and Statistical Manual* volume then in use (O'Hanlan, Robertson, Cabaj, Schatz, & Nemrow, 1996). The continuing stigma of homosexuality may be an independent risk factor for depression and anxiety and may deter individuals from seeking further mental health care from professionals whose bias led to inadequate patient care (Cochran, 2001). Academic studies over the relationship between sexual orientation and mental health have finally begun to emerge over the past several years (Lhomond et al., 2014).

A longitudinal study found non-heterosexual participants, measured at ages 15, 16, 18, and 21, were significantly more likely to experience depression and general anxiety disorders, $p < .001$ and $p = .012$, respectively (Fergusson, Horwood, & Beautrais, 1999). Research among Australian college students also showed non-heterosexual students were at higher risk for depression and anxiety (Said, Kypri, & Bowman, 2012). Among homosexual students, 13% reported depression and 19% anxiety. Higher rates were found among bisexual students: 20.6% experienced depression and 24.4% anxiety (Said et al., 2012). Another study examined data for

adults in two age groups, 20-24 years and 40-44 years. In both age groups, homosexual and bisexual participants were significantly more likely to suffer from anxiety and depression, with $p < .001$ for both disorders (Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002). Research conducted over the course of an academic year found that all student participants experienced different levels of mental distress throughout the year, but non-heterosexual respondents experienced poor mental health at higher rates than heterosexuals (Kirsch, Conley, & Riley, 2015). Data collected from the University of Central Oklahoma (UCO) also showed higher frequencies of anxiety among non-heterosexual students than heterosexual ones (Cieri, 2015).

With such high rates of anxiety and depression throughout the college student population, and with non-heterosexual students more adversely affected by negative mental health outcomes than their heterosexual peers, the low treatment rates noted above are concerning. Mental health disorders still carry strong stigmas, as does non-heterosexual orientation, which NAMI defines as a form of discrimination (2016b). The stigmas attached to mental health disorders can prevent individuals from seeking treatment because they are afraid of being shamed (NAMI, 2016b). Treatment options may need to be easier for students to access than traditional therapy options, such as counseling and medication - which may also impose out-of-pocket costs on patients. Because college student life often revolves around the campus, for classes, dorm residences, or on-campus activities and events, college campuses are a prime location to introduce alternative mental health therapy options for students.

One such alternative option may involve looking to spiritual rather than traditional clinical treatment methods. Reutter and Bigatti (2014) have found increasing support for the connection between religious/spiritual health and mental health. They suggested spirituality,

spiritual experiences not necessarily associated with an organized religion, may be a launching point for psychological well-being and may continue to enhance mental health once it has been adopted (Reutter & Bigatti, 2014). Major depression and anxiety have both been studied in light of religious faith and spirituality to determine whether these variables provide protection against depression and anxiety (Rasic, Robinson, Bolton, Bienvenu, & Sareen, 2011). Rasic et al. (2011) focused on more structured religious behaviors and found participants who attended regular religious services were at a lower risk of experiencing suicidal ideation (Rasic et al.). Another study found spirituality helped improve resilience factors for individuals dealing with anxiety and depression (Min, et al., 2013). A meta-analysis of available literature found that faith-adapted cognitive behavioral therapy (CBT) may be more effective in treating anxiety and depression than standard CBT (Anderson, Heywood-Everett, Siddiqi, Wright, Meredith, & McMillan, 2015). In regard to meditation, an originally spiritual practice, and its secular derivatives, Wachholtz and Pargament (2005) concluded that spiritual-based therapies may be the more effective at reducing adverse mental health symptoms. The authors also noted that individuals with stronger spiritual lives may experience less anxiety (Wachholtz & Pargament, 2005). If considering faith or spiritual therapies for depression and anxiety in non-heterosexual populations, however, it is important to review the existing relationship between religion and spirituality and this population.

Discord between non-heterosexual mental health and spirituality or religiosity seems to emerge when viewing spiritual life only as part of a religious life. Subhi and Geelan (2012) interviewed their participants only in terms of their experiences with Christianity but note at the

beginning of their study that a homosexual engaged in a traditional Christian organization may have difficulty finding a fulfilling spiritual life. Surely a spiritual life, much less a fulfilling one, is not tied strictly to the Christian faith. Gattis, Woodford, and Han (2014) at least drew a distinction between a gay-affirming religious community and a non-gay affirming religious community, noting the first were beneficial to non-heterosexuals and the latter detrimental. A later study further delineated the different effects of religion and spirituality in relation to homosexual individuals. Harbaugh and Lindsey (2015) found individuals with a commitment to any religion presented with stronger heteronormative beliefs but participants who felt their lives had high spiritual meaning had a negative association with heteronormative views. Given results such as these, it would appear at first that homosexuality and religious affiliation are in some sort of conflict with one another.

Studies have found decidedly positive interactions between non-heterosexual orientation and a religious or spiritual identification. Using the religious well-being (RWB) and existential well-being (EWB) scales, Tan (2005) found gay and lesbian study participants had vibrant spiritual lives and scored high on both scales. Even participants who identified with traditionally non-gay-affirming religions had high RWB scores, perhaps because of the personal relationship with the god at the center of these specifically theistic faiths. Spirituality may be a positive force that promotes improved self-esteem. The study concluded that homosexuals may need strong spiritual lives because of the minority stressors they experience (Tan, 2005).

Purpose and Hypothesis

Depression and anxiety impact non-heterosexual individuals in the U.S. at higher rates compared to heterosexuals (Fergusson et al., 1999; Jorm et al., 2002; Kirsch et al., 2015). There

is also a heavy mental health burden on college students (Blanco et al., 2008; Said et al., 2012). Spirituality and religiosity may act as protective factors against depression and anxiety but it is difficult to tell based on conflicting results regarding spirituality among non-heterosexuals. Another issue with the existing research is a lack of clear separation between and clear definitions of religiosity and spirituality. The purpose of this study was to determine whether sexual orientation and spiritual practice affect depression and anxiety symptoms among non-heterosexual college students. The hypothesis was that non-heterosexual college students who engage in a spiritual practice will experience lower rates of depression and anxiety than their non-heterosexual peers who do not have a spiritual practice.

Operational Definitions

For the purpose of this study, rather than focusing on participation in an established religion, spirituality was more broadly defined. Spiritual practice was defined as a personal, internalized connection to a higher power or greater purpose outside of one's self, lived out through any act that makes the individual feel closer to the higher being/purpose (Barringer, Gay, & Lynxwiler, 2013; Reutter & Bigatti, 2014).

Non-heterosexual is used throughout the study to designate gay, lesbian, bisexual, and other individuals who do not identify as strictly heterosexual (Platt & Lenzen, 2013).

Delimitations and Limitations

The study was delimited by the following:

1. The study was conducted in one university in the state of Oklahoma.
2. Participants were non-heterosexual students at the University of Central Oklahoma (UCO) between the ages of 18 and 26.

3. Participants were excluded if they did not identify as non-heterosexual, were outside the set age range, or were not currently enrolled at UCO.
4. Surveys were administered in-person after two meetings of the UCO organization Student Alliance For Equality (SAFE).

Possible limitations of the study included:

1. The study was conducted in one university. This method reduces generalizability of the findings.
2. Participation in the study was voluntary. This method limits the study's sample size and restricts generalizability of the findings.
3. There was the possibility of response bias due to the nature of the questions being asked.
4. Potential participants may not have been willing to take the surveys due to the sensitive subject matter.
5. Potential participants may not have been willing to take the survey due to the length of time needed to complete the surveys.
6. Not all non-heterosexual students at UCO were interviewed.

Summary

Depression and anxiety create negative health and economic outcomes for a large portion of American adults (NAMI, 2016; NAMI, 2016b; NIMH, 2016a). Among college students and non-heterosexuals rates of depression and anxiety are especially high (Blanco et al., 2008; Cochran, 2001; Fergusson et al., 1999; NIMH, 2016c; Said et al., 2012). College students, already in a time of transition and pressure, may be diagnosed with a mental disorder during their

twenties that will last the course of their lifetime (Blanco et al., 2008; Hunt & Eisenberg, 2010; Said et al., 2012). For non-heterosexuals, it has only been a short time since homosexuality was treated as a psychiatric condition (Cochran, 2001; Lhomond et al., 2014; O'Hanlan et al., 1996). Where these two populations intersect is a crucial point to study to understand the mental health situation for non-heterosexual college students and to move forward with appropriate interventions. Another important point for study is the separation of spirituality from an established religious system; the existing literature intertwines two ill-defined concepts. Spirituality, the connection to something greater, needs to be separated from organized, doctrine-defined religions and studied on its own. Non-religious spiritual-based therapies have shown promise as treatments against anxiety and depression (Reutter & Bigatti, 2014). Spiritual and religious behaviors and attitudes have also been demonstrated to mitigate the risks and negative outcomes of depression and anxiety (Anderson et al., 2015; Min et al., 2013; Rasic et al., 2011; Wachholtz & Pargament, 2005). It is difficult to determine a consensus, however, on the impact spirituality has on non-heterosexuals and their mental health when spirituality is kept tied to religiosity; both negative and positive impacts on mental health have been reported. If it is possible that spiritual practice outside of a religious affiliation could benefit non-heterosexuals dealing with depression and anxiety, more research should be conducted.

Chapter Two: Literature Review

Introduction

According to a 2014 report by the Substance Abuse and Mental Health Services Administration, approximately 43.6 million American adults have dealt with a diagnosable mental disorder within the past 12 months. Of these, 9.8 million adults had a serious mental illness that disrupted their lives. These two groups make up 18.1% and 4.1% of the United States population, respectively (Center for Behavioral Health Statistics & Quality, 2015). Mental health disorders can have negative effects on an individual's daily functionality, including ability to work or attend school and maintain personal relationships. A 2014 National Health Statistics Report found that non-heterosexuals had higher rates of psychological distress than heterosexuals (Ward, Dahlhamer, Galinsky, & Joestl, 2014). These data were collected from the National Health Interview Survey, administered in 2013, which had a sample of 34,557 participants to represent the adult American population; 1.6% of participants identified themselves as gay or lesbian, and 0.7% identified as bisexual (Ward et al., 2014). Other research has begun to show similar disparities in mental health outcomes reported between heterosexual and non-heterosexual populations (Meyer, 2003). This may seem long overdue, but it was only in 1973 that homosexuality ceased to be considered a diagnosable mental disorder (Sandfort, de Graaf, Bijl, & Schnabel, 2001).

College students are a specific population that is at a higher risk for mental health disorders (Hunt & Eisenberg, 2010). Among individuals with mental health disorders that will last the extent of an individual's lifespan, many were diagnosed by mid-20s (Hunt & Eisenberg,

2010). One study found that among individuals in the 19-25 year age range, approximately half had met clinical diagnostic standards for a mental health disorder within the past year (Blanco et al., 2008). College is a time of transition and imposes an increased burden of stress, which may contribute to these increased rates of mental health disorders (Blanco et al., 2008).

Some research has been done on the effect of spirituality or religious practice both on mental health outcomes and on non-heterosexual populations (Gattis et al., 2014; Rasic et al., 2011; Sushi & Geelan, 2012; Wachholtz & Pargament, 2005). The concepts of religious affiliation and personal spirituality are intertwined and separate: religion generally refers to involvement with an established, organized faith system, while spirituality is more often considered a personal quest for a non-specific connection to a higher transcendence (Burris, Brechting, Salsman, & Carlson, 2009; Lease, Horne, & Noffsinger-Frazier, 2005; Wright & Stern, 2015). Up to 80% of Americans identify with some form of organized religion (Hamblin & Gross, 2014). With that rate, it is more than probable a majority of homosexual individuals, and the approximately 65% of high school graduates who go on to some form of higher education, would have been exposed while growing up to some sort of spiritual practice (Hamblin & Gross, 2014; Hunt & Eisenberg, 2010). Religious faith as a coping method has been associated with lower rates of depression (Pargament, Koenig, & Perez, 2000). Faith practice has also been associated with several measures of psychological well-being (Koenig, 2001). Research over the positive impact of religious affiliation and mental health is based largely on the population as a whole, with less information available over the non-heterosexual population specifically (Hamblin & Gross, 2014).

The purpose of this literature review was to determine what relationship, if any, has been established among sexual orientation, mental health disorders, and spirituality/religiosity among college-age individuals.

Methods

Search methods. Studies for review were obtained through the University of Central Oklahoma's Chambers Library online databases. Keywords used for the search included mental health, sexual orientation, spirituality, homosexuality, and college students. The initial searches were not limited by publication date or publication status.

Inclusion and quality criteria. To be eligible for review, studies had to measure mental health outcomes for anxiety or depression and their relationship with either spirituality/religiosity or participants' sexual orientation or both. The participant sample had to include individuals over 18 years of age. A study was deemed high quality if it met at least two of the following criteria: it measured mental health status either with multiple scales or with a clinical diagnostic scale, it assessed spiritual or religious practice with multiple scales, and/or it measured sexual orientation with a scale. Moderate quality studies met at least one of the above criteria and low quality studies met none. Table 1 outlines inclusion and quality criteria.

Results

Search results. A total of 3,341 studies were found in initial searches. Article titles and abstracts were reviewed for relevance and then screened according to the selection criteria above. References of selected articles were also searched for relevant titles and further screened using the inclusion criteria. The initial search results were narrowed by elimination of duplicates, the inclusion criteria noted above, and publication in a peer-reviewed journal. After elimination, 20

studies were selected for review. Included studies were classified by the quality standards outlined above. The studies were then categorized into three groups: studies of mental health outcomes and sexual orientation, studies of spiritual practice and mental health outcomes, and studies that examined the relationships among all three variables. Table 2 lists characteristics, measures, and quality of all studies analyzed in this review.

Mental health and sexual orientation. Eight articles were included that studied the relationship between mental health outcomes and sexual orientation. All eight studies found disparate rates of anxiety and depression between participant groups by sexual orientation, both between heterosexual and non-heterosexual populations and within the non-heterosexual populations (Bolton & Sareen, 2011; Bostwick, Boyd, Hughes, & McCabe, 2010; Gilman, Cochran, Mays, Hughes, Ostrow, Kessler, 2001; Kirsch, Conley, & Riley, 2015; Lindley, Walsermann, & Carter, 2012; Przedworski, VanKim, Eisenberg, McAlpine, Lust, & Laska, 2015; Sandfort et al., 2001; Shenkman & Shmotkin, 2011). Focusing specifically on women, one study found the percentage rates of any anxiety disorder within the past 12 months was nearly double for non-heterosexual as for heterosexual women (40.0% and 22.4%, respectively); the percentage difference was more than double for major depression, 34.5% and 12.9%, respectively (Gilman et al., 2001). A study of Israeli adolescents and young adults in matched samples showed depressive symptoms occurred significantly more frequently in the homosexual group than in the heterosexual group, $F(1, 425) = 6.37$, $p < .05$ (Shenkman & Shmotkin, 2011). Another study also used matched samples of heterosexual and lesbian, gay, bisexual (LGB) students in their first year of college to assess mental health outcomes between groups (Kirsch et al., 2015). This study found that while both orientation groups experienced increasing levels of psychological

stress throughout the academic year, the LGB students still reported higher rates than the heterosexual students (Kirsch et al., 2015). Data were taken from Wave 2 of the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) and analyzed by two different studies (Bostwick et al., 2010; Bolton & Sareen, 2011). Both studies found significantly higher rates of both anxiety and mood disorders over a lifetime or within the past 12 months among LGB respondents; rates were higher among bisexual participants than gay or lesbian participants (Bostwick et al., 2010; Bolton & Sareen, 2011). In slight contrast, a study in the Netherlands did not find any significant differences between heterosexual and homosexual groups in 12-month occurrences for mood and anxiety disorders among female participants (Sandfort et al., 2001). This study did show higher 12-month and lifetime rates among homosexual men than heterosexual, as well as higher lifetime rates among women (Sandfort et al., 2001). Another study focused on mental health outcomes of college students by sexual orientation, assessing students based on self-reported diagnosis of a mental health disorder in the past 12 months and other self-assessed measures of stress levels and events (Przedworski et al., 2015). This study found that LGB students were significantly more likely than heterosexual students to have received an anxiety or depression diagnosis within the past 12 months ($p < .001$) (Przedworski et al., 2015). A 2012 study by Lindley, Walsemann, and Carter measured sexual orientation on three scales assessing sexual identity, behavior, and attraction. The study found higher depression rates among bisexual women across the orientation scale, but for gay-identifying or male-attracted men there were no relationships between orientation and mental health outcomes. This study noted the importance of the sexual orientation scale in identifying

links between mental health outcomes and sexual orientation that would otherwise remain unobserved because of the complex, spectrum nature of sexual orientation (Lindley et al., 2012).

The greatest limitation apparent in this first category of studies was the lack of universally acceptable instruments to measure both sexual orientation and mental health status. Two studies were based on the same data set, yet reported different measures for sexual orientation (Bostwick et al., 2010; Bolton & Sareen, 2011). Only four studies assessed mental health status using scales based on clinical diagnostic standards (Bostwick et al., 2010; Bolton & Sareen, 2011; Gilman et al., 2001; Sandwort et al., 2001). Two studies measured sexual orientation based on the gender of participants' sexual partners during a set period of time (Gilman et al., 2001; Sandwort et al., 2001). Compared with other studies that assessed sexual orientation by identity, behavior, and either feelings or attraction, this type of instrument is relatively unreliable in determining participants' preferred orientation identity (Shenkman & Shmotkin, 2011; Bostwick et al., 2010; Przedwoski et al., 2015).

Mental health and spirituality. Three studies met inclusion criteria for analysis and assessed the relationship between mental health and spiritual or religious practice. One study of university students reviewed the relationships between both religiousness and spirituality and psychological distress markers, including depression and anxiety (Burris et al., 2009). The psychological distress scale in this study utilized a reverse scoring measure. The authors found higher religiosity levels were positively and significantly associated with less psychological distress ($sr = .13$, $p < .001$) but spirituality had a negative, significant correlation to distress ($sr = -.23$, $p < .13$) (Burris et al., 2009). Another study focused only on incoming college freshmen's mental health outcomes and religious affiliation (Berry, Bass, Shimp-Fassler, & Succop, 2013).

The study did not find significant differences between religious-affiliated and non-affiliated groups but found higher rates within groups of depression and anxiety among the non-affiliated participants (Berry et al., 2013). The third study reviewed examined the role of religiosity in mitigating mental health conditions among HIV-positive gay men (Woods, Antoni, Ironson, & Kling, 1999). The authors used multiple regression analysis and found that religious coping was significantly associated with depression scores ($p < .01$) and the participants who utilized religious coping methods such as prayer or attending religious services experienced fewer depressive symptoms than other participants (Woods et al., 1999).

The lack of instrument consistency among studies was again a limitation with this category of studies. None of the three studies reviewed used the same instruments for measuring religion, spirituality, or mental health. The sample populations in each study also create limitations. The studies focused on college students had either exclusively heterosexual participants or did not assess sexual orientation (Burris et al., 2009; Berry et al., 2013). The third study had exclusively homosexual participants (Woods et al., 1999). It appears, however, from all of the studies discussed so far, there is an interaction between sexual orientation and mental health status and between spirituality or religiosity and mental health outcomes. The relationships between all three of these measures warranted further exploration.

Mental health, spirituality, and sexual orientation. Nine studies of spirituality, mental health, and sexual orientation were eligible for inclusion. A 2014 study of young adults found higher rates of depressive symptoms and lower rates of religiosity among non-heterosexual participants (Gattis et al.). The study did find a difference, though, between the type of religious affiliation and the impact it had on participants. For non-heterosexual individuals who had an

affiliation with a gay-affirming religious organization, depressive symptom rates were lower than for those with a non-affirming religious affiliation (Gattis et al., 2014). The authors suggested this type of positive religious association could serve as a protective factor against depressive symptoms for non-heterosexual young adults (Gattis et al., 2014).

In contrast, a study of LGB individuals with a current religious affiliation found no direct effect between faith experiences and psychological health outcomes. The authors found instead that spirituality was associated with better mental health outcomes (Lease et al., 2005). The relationship between religion and mental health status for non-heterosexual individuals was even more complex in a 2012 study of young adults primarily raised in the Church of Jesus Christ of Latter Day Saints (LDS), a non-homosexual affirming religion (Dahl & Galliher). Participants reported depressive symptoms they attributed to their experiences as a sexual minority affiliated with a non-gay-affirming religion (Dahl & Galliher, 2012). Despite this, participants also reported they took values learned from their religious background and incorporated them in positive ways into their current lifestyle and value systems, even after leaving the organization (Dahl & Galliher, 2012). Another study focused on LDS-affiliated non-heterosexual adults found active LDS participants had higher depression scores than inactive and unaffiliated participants (Crowell, Galliher, Dehlin, & Bradshaw, 2015).

By contrast, a study conducted in Tel Aviv, Israel, reviewed religiosity and mental health outcomes in young adults and, counter to their hypothesis, the authors found religiosity was not a predictor of mental health outcomes (Shilo & Savaya, 2012). The authors noted the difficulty in finding religious-affiliated LGB participants but recommended their inclusion in future research (Shilo & Savaya, 2012). Additionally, the study highlighted the vulnerability of bisexual

individuals to negative health outcomes (Shilo & Savaya, 2012). This finding was echoed in a study by Page, Lindahl, and Malik (2013). The authors found significantly higher depression scores in bisexual participants than gay participants ($F(1, 169) = 4.34$, $p = .039$). The study noted as well that affiliation with a non-affirming religion was associated with negative self-identity (Page, Lindahl, & Malik, 2013). Instead of measuring organized religious affiliation alone, Coleman (2003) measured both spirituality and religiosity through the Existential Well-Being (EWB) and Religious Well-Being (RWB) subscales, respectively. This study showed a relationship between sexual orientation, EWB, and functional health status, which in turn affected mental well-being scores (Coleman, 2003). Coleman's study found homosexual participants had higher mental well-being scores under functional health status than did heterosexual participants, unlike other studies already reviewed which showed the opposite outcome (2003).

Also inconsistent with other research, Barnes and Meyer (2012) could not substantiate the hypothesis that non-affirming religious affiliation resulted in higher depressive symptoms. The authors found instead that when controlling for the variable of internalized homophobia, religious affiliation better predicted mental health outcomes (Barnes & Meyer, 2012). The final study also analyzed religiosity, anxiety and depression, and sexual orientation in terms of internalized homonegativity as well as resiliency (Walker & Longmire-Avital, 2012). The study showed a significant relationship between anxiety and homonegativity ($p < .01$) and indicated that religiosity strengthened participants' resiliency (Walker & Longmire-Avital, 2012). The authors noted that without religious faith, participants were less capable of coping successfully

during adverse events (Walker & Longmire-Avital, 2012). These results are similar to others in this review category in that they both support and contradict other studies.

These studies are, as others, limited by the lack of instrument consistency. The most commonly used measure of mental health outcomes was the Centers for Epidemiological Studies-Depression scale and, as shown in Table 2, the majority of studies did not agree on this measure. The studies in this category also varied in their population samples, either entirely non-heterosexual or mixed heterosexual and non-heterosexual. The literature reviewed answered some questions, but additional research is needed.

Discussion

Though there are minor discrepancies, the literature overall showed disparate rates of mental health disorders between heterosexual and non-heterosexual populations, with the burden falling on the latter. The literature lacked a consensus on the impact of spirituality and religiosity on mental health outcomes overall. Some studies showed negative impacts and others positive. In terms of religious affiliation's impact on the mental health outcomes of non-heterosexual populations, the literature indicated the religious organization needs to be gay-affirming in order to confer positive mental health impacts.

With concepts as broad as religiosity and spirituality, the need for specificity and consistent measures is imperative to be able to measure generalizable results that can be used both in future research and in developing interventions. The greatest limitation in the available literature was the lack of consistent, universally accepted and validated instruments to measure religiosity and spirituality, mental health disorders, and sexual orientation. Future research is

needed to establish validity and refine the scales used for all of these variables in order to facilitate more reliable study outcomes.

There was also a lack of unified focus in sample populations. Several studies focused on very broad age groups, with large sample sizes. Few of the studies reviewed were targeted toward college populations. Further study is needed to determine the unique mental health burdens of this population and the disparities that may exist between heterosexual and non-heterosexual students. More research is warranted to ascertain more clearly the role of spirituality and/or religiosity and its effect on mental health outcomes for non-heterosexual populations. When focused on college students, this research would enable universities to better serve the mental health needs of students by developing services designed to address sexual orientation-specific considerations, to utilize any positive impacts of spirituality, or to address negative impacts of religiosity.

Chapter Three: Methods

Research Approach

The research study utilized quantitative methodology. This method was selected to provide as much objectivity as possible to the sensitive and highly personal subject matter of the research question. This research decision was made in response to the inconsistencies and instrument variances found in the literature review, as noted in the previous chapter. The researcher's goal was to quantify, as much as possible, the variables in question in order to demonstrate the need to expand this area of research (Abusabha & Woeful, 2003; Thomas, Nelson, & Silverman, 2015).

Participants

Inclusion criteria. Participants were recruited from currently enrolled full-time and part-time students at the University of Central Oklahoma. Only non-heterosexual respondents between the ages of 18 and 26 were included in the study. This eliminated age outliers that may have skewed results.

Recruitment. Prior to recruiting participants and administering surveys, the researcher applied for and obtained Institutional Review Board (IRB) approval through the University of Central Oklahoma (Appendices C, E). Participants (n=11) were recruited through the on-campus organization for non-heterosexual awareness and interests, Student Alliance for Equality (SAFE). See Appendix G. The researcher recruited study participants during two different monthly SAFE meetings. See recruitment statement in Appendix I. An amended IRB application was submitted and approved for an additional SAFE Facebook online recruitment method. See Appendices D, F, & H. Both the in-person and online recruitment statements addressed the nature and purpose

of the study, data collection methods, and appropriate trigger warnings for sensitive subject matters. Appendix I provides the recruitment statement used at the SAFE meetings and Appendix K the online recruitment statement. Recruitment referral statements were provided to participants to refer other students eligible for inclusion in the study. See Appendix J.

Instruments

Demographics. Demographic information was collected from all participants for age, gender, race, academic classification, and enrollment status. The demographics instrument was adapted from the most recently available American College Health Association's National College Health Assessment (American College Health Association National College Health Assessment, 2014). See Appendix L.

Sexual orientation. Sexual orientation was measured as its own scale, adapted from scales created by Lindley, Walsemann, and Carter (2012) and Lhomond, Saurel-Cubizolles, Michaels (2014). Lhomond et al. (2014) discussed the importance of measuring sexual orientation across the sectors of attraction, self-identification, and behavior, noting that each area is necessary to begin to grasp the full dimensions of sexual orientation. The sexual orientation scale measured respondents' sexual orientation across the dimensions of sexual attraction, sexual behavior, and self-identified sexual orientation. See the study's sexual orientation scale in Appendix M.

Spiritual practice. The *Brief Multidimensional Measure of Religiousness/Spirituality* (*BMMRS*) is a 38-measure assessment over multiple sectors of religiosity and spirituality. The scale measures daily spiritual experiences, values, beliefs, forgiveness, private religious practices, religious and spiritual coping, religious support, religious/spiritual history,

commitment, organizational religiousness, religious preference, overall self-ranking, and meaning (Fetzer Institute, 1999). The brief scale is ideal to use in this study setting because it does not require an extensive amount of time to complete. It is also well-suited to this study because it is designed to capture both religious and spiritual behaviors and attitudes and is not specific to any one religion. This will provide a broad-spectrum insight into multiple facets of college students' spiritual practices. The *BMMRS* has a demonstrated internal validity of α = .70 - .91 (Curcio, Lucchetti, & Moreira-Almeida, 2015; Harris, Sherritt, Holder, Kulig, Shrier, & Knight, 2008). Test-retest reliability was measured from .80 - .93 (Curcio et al., 2015; Harris et al., 2008). The *BMMRS* has been used in multiples studies across various age groups and cultures and is considered a valid and reliable instrument to measure spirituality and religiosity. See Appendix N.

Depression. The *Beck Depression Inventory II* (*BDI-II*) is a widely used measure of depression in both research and clinical settings. The *BDI-II* is a 21-item self-report scale to measure depression severity (Beck & Steer, 1993b; Beck, Steer, Ball, & Ranieri, 1996). The scale has a test-retest correlation of .93-.96 (Beck et al., 1996; Sprinkle, Lurie, Insko, Atkinson, Jones, Logan, & Bissada, 2002). The internal validity of the *BDI-II,* measured by Cronbach's α, has been measured from α = .82-.96 (Beck et al., 1996; Contreras, Fernandez, Malcarne, Ingram, & Ruiz Vaccarino, 2004; Osman, Kopper, Barrios, Gutierrez, & Bagge, 2004; Storch, Roberti, & Roth, 2004). These studies utilized the *BDI-II* among a broad range of populations, including college students, adolescents, and Hispanic participants (Arnau, Meager, Norris, & Bramson, 2001; Contreras et al., 2004; Osman et al., 2004; Sprinkle et al., 2002; Storch et al., 2004). The

BDI is a brief, easy to understand, scale with documented reliability and validity for measuring depressive symptoms. See Appendix O.

Anxiety. The *Beck Anxiety Scale* (*BAI*) is also a self-report scale with 21 items to measure anxiety (Beck, Epstein Brown, & Steer, 1988; Beck & Steer, 1993a). The internal consistency of the *BAI* has been measured at α = .88-.93 (Beck, Epstein, Brown, & Steer, 1988; Contreras et al., 2004; Krafona, 2014). The test-retest reliability coefficient has been measured with more variance, r = .62 - .75, which may be attributable to differences in time span between test and retest (Beck et al., 1988; Creamer, Foran, & Bell, 1995; Fydrich, Dowdall, & Chambless, 1992). Overall, these studies classify the *BAI* as a reliable and valid instrument to measure anxiety across different sample populations. Like the *BDI-II*, the *BAI* is also brief, minimizing the time impact on participants, and its reliability and validity have been demonstrated in diverse respondents. See Appendix P.

Procedures

Data collection. Data were collected through in-person survey administration on the UCO campus. A total of 16 students completed surveys, seven at the first SAFE meeting and 9 at the second SAFE meeting. No new participants were recruited through the SAFE Facebook page. The order of data collection was: demographics, sexual orientation scale, *BMMRS*, *BDI-II*, *BAI*, copy of the informed consent form for participants to keep, referral recruitment statement, and counseling resource list. Surveys were given to participants in an ordered, stapled packet.

Impact on participants. Data collection took approximately 15-20 minutes per participant. This time frame included informed consent signing, survey instructions, and

completion of the demographics assessment, sexual orientation scale, *BMMRS, BDI-II,* and *BAI*. The variables assessed, including sexual orientation, depression and anxiety, and spiritual practice are highly personal and might have been potential trigger subjects for students. Participation in this study could have caused psychological distress; therefore all participants were given contact information for the UCO Center for Counseling and Well-Being and for several local counseling centers should they have been negatively impacted by participating in the study. A copy of the resource list is provided in Appendix Q.

Confidentiality. All participants were assigned a random code to sort their surveys and protect their personal information throughout the data collection period. Electronic data were stored in a password-protected file on the primary investigator's (PI) computer. All electronic data and paper surveys were securely destroyed at the end of this study. Participants signed an informed consent form; a copy is included in Appendix B. Informed consent forms will be kept for the university-required period of three years from the signed date. Signed informed consent forms are kept locked in the co-primary investigator's (Co-PI) office on campus. These forms will be securely destroyed in the fall of 2019.

Scoring. The sexual orientation scale offers a better understanding of the multi-dimensional nature of homosexuality and non-heterosexual identity. Respondents self-declared their gender attraction, self-identified their sexuality, and specified past sexual behavior by indicating any sexual experience with same-sex partners and the number of same-sex partners.

The response options for the *BMMRS* use a Likert-scale format for frequency and degree of agreement with different statements regarding spiritual practices and beliefs. Active spiritual practice was considered 20 or more responses, out of the 40 questions, scored either above the

midpoint (*agree, strongly agree, fairly often, very often, some, a few times a month, quite a bit, a great deal*) for positive spiritual statements and below or at the midpoint for negative statements (*never, seldom, once a month, less than once a month, somewhat, not at all, once in a while, never*). Participants whose answers did not meet the active spiritual practice criteria were considered to have no active spiritual practice.

The *BDI-II* and *BAI* instruments were designed to allow participants to self-score their results. The self-scoring option was removed from the paper surveys put together for this study so only the PI and Co-PI would score the surveys. Scoring for both the *BDI-II* and the *BAI* uses a sum score to place participants within a ranked category of depression and anxiety levels, respectively. Depression on the *BDI-II* is classified into the following ranked categories based on numerical sum scores: 0-13 indicates minimal depression, 14-19 mild depression, 20-28 moderate depression, and 29-63 severe depression. Scores on the *BAI* fall into one of three ranked categories based on numerical scores: 0-21 indicates very low anxiety, 22-35 moderate anxiety, and a score of 36 or more indicates persistent or high anxiety. For the purposes of this study, to preserve power, the sum scores were used in the statistical analyses rather than the ranked categories of depression and anxiety typically used with these two instruments.

Survey responses were scored first by the primary investigator (PI). Every fifth survey was re-scored by the PI for quality assurance. The Co-PI re-scored every seventh survey set. The PI and Co-PI reviewed any discrepancies together for resolution. This helped eliminate the possibility of human error in calculating scores for data analysis (Thomas, Nelson, & Silverman, 2015).

Data Analysis

Statistical analyses were conducted with SPSS software version 21. The data collected with the *BDI-II* and the *BAI* were scale data because the responses were totaled into a numerical sum score on the scale of 0-63 for each survey. Data were analyzed accordingly with two independent *t* tests to measure the two dependent variables, depression and anxiety, by the two groups within the independent variable of spiritual practice - active and no active spiritual practice. The null hypothesis was, spiritual practice does not affect depression and anxiety symptoms among non-heterosexual college students and α was set to .05.

Chapter Four: Results

The purpose of this study was to determine whether sexual orientation and spiritual practice affect depression and anxiety symptoms among non-heterosexual college students. The hypothesis was that non-heterosexual college students who engage in a spiritual practice will experience lower rates of depression and anxiety than their non-heterosexual peers who do not have a spiritual practice. A total of 16 surveys were collected between two visits to SAFE meetings. Five surveys were eliminated from the analysis. Four were unusable for the following reasons: one participant was not actively enrolled at UCO, two identified as heterosexual, and one participant did not complete the *BMMRS*. The fifth survey was eliminated because the respondent indicated the scores of zero given on both the *BDI-II* and the *BAI* were due to hormone therapy. The scores were not included in the analysis but were included in the discussion. The remaining 11 surveys met inclusion criteria for analysis. Data were first analyzed for frequencies and percentages.

Baseline Characteristics of the Sample

Five participants had an active spiritual practice, 45.5%, and six had no active spiritual practice. For those with an active spiritual practice, the mean score on the *BMMRS* was 24.60(±5.727). The minimum score was 20 and the maximum score was 34. In the no active spiritual practice group, the mean *BMMRS* score was 7.67(±2.251) with a minimum score of 4 and a maximum score of 10. There was an almost equal distribution of the 11 participants between the gender categories of male (n = 3), female (n = 4), and transgender (n = 4). By age, participants were divided between the 18-20 range (n = 5) and the 21-23 range (n = 6). All participants were undergraduate students at UCO, with both full-time and part-time enrollees

making up the sample. By race, 54.5% of participants were Caucasian, 27.3% were both Caucasian and American Indian or Alaska Native, and the remaining participants were either African American or American Indian or Alaska Natives. Table 3 shows demographic frequencies and percentages. By self-identification, 36.4% identified as *homosexual* and 27.3% as *other*. Participants identifying as *other* were asked to specify their preferred sexual identification; three participants identified as *pansexual* and one as *queer*. Under the attraction level of the sexual orientation scale, 63.6% of participants declared attraction to *both sexes*, and 36.4% to *only the same sex*. Behavior showed 90.9% of participants had engaged in sexual activity with a partner of the same sex. Table 4 shows frequencies and percentages for the sexual orientation scale.

As previously noted, sum scores on the *BDI-II* fall into the following categories: 0-13 minimal depression, 14-19 mild depression, 20-28 moderate depression, and 29-63 severe depression. For all participants, the mean depression score was 19.27(±13.357), slightly above the mild depression score range. The minimum score was zero and the maximum score was 48. Sum scores on the *BAI* are divided into the following categories: 0-21 indicates very low anxiety, 22-35 moderate anxiety, and a score of 36 or more indicates persistent or high anxiety. The mean anxiety score for all participants was 22.73(±13.886), within the moderate anxiety range. The minimum score was 9 and the maximum score was 46. According to the *BDI-II* and *BAI* scores, all participants, regardless of spiritual practice, are experiencing symptoms of depression or anxiety; with most participants experiencing both.

The mean depression score for those with no active spiritual practice (NASP) was 18.33 (±6.563), within the mild depression range. The data were leptokurtic (skewness = .429,

kurtosis = 1.531). For participants with an active spiritual practice (ASP), the mean depression score was 20.40 (±19.731), within the moderate depression range. The data were normally distributed (skewness = .429, kurtosis = -.984). Levene's test for equality of variances was not met (p = .044). Figure 1 illustrates the distribution of depression scores by spiritual practice. The mean anxiety score for the NASP group was 21.33 (±12.754), in the very low anxiety range. The data were positively skewed and leptokurtic (skewness = 1.863, kurtosis = 4.187). In the ASP group, the mean anxiety score was 24.40 (±16.502), within the moderate anxiety range. Data were platykurtic (skewness = .497, kurtosis = -2.226). Levene's test for equality of variances was met (p = .283). Table 5 lists the descriptive statistics for the depression and anxiety variables. Figure 2 illustrates the distribution of anxiety scores by spiritual practice.

Statistical Analysis

Because the results from both the *BDI-II* and the *BAI* represented scale data, statistical analyses were conducted with two independent t-tests. For depression, the independent *t* test was robust enough to use even though the data were not all normally distributed. Because the assumption of homogeneity of variance (HOV) was not met, the results calculated by the SPSS analysis for *equal variances not assumed* were used. The independent *t* test showed that depression scores were non-significantly higher in the ASP group than the NASP group by 2.067, $t(4.739) = -.224$, $p = .832$. The effect size for the depression analysis was small, $d = -.315$. For anxiety, the only assumption violated was normal distribution and the independent *t* test is robust enough to overcome this violation. The statistical analysis showed the anxiety scores for the ASP group were non-significantly higher than the NASP by 3.067, $t(9) = -.348$, $p = .736$. The effect size for the anxiety analysis was small, $d = -.241$. Table 6 lists the results of the

statistical analyses. Figure 3 illustrates the differences in means for depression and anxiety scores by spiritual practice.

Effect Size

None of the studies reviewed prior to this research project included effect size calculations to estimate an appropriate sample size. Because of this, no a priori calculations could be done to estimate the sample size needed for this study to be able to detect statistically significant differences between groups. Retrospective calculations were completed using the G*Power software to benefit future researchers with an appropriate sample size. The calculation was completed with α set a .05 and power set to the most widely used .80 standard. The first calculation of sample size used the effect size from the depression analysis, $d = .315$. From these parameters, a sample size of 120 participants would be needed for future studies. An appropriate sample size was also calculated from the analysis of the anxiety variable, with the effect size $d = .241$. The appropriate sample size for future studies from these parameters would be 213 participants.

Additional Findings

Not all participants restricted their survey responses to the options provided on the instruments. Several participants wrote in comments on the demographics and sexual orientation scales, as well as on the *BMMRS*, *BDI-II, BAI.* The majority of responses suggested alternative language for instruments to eliminate outdated or inaccurate wording those outside the non-heterosexual community would not necessarily recognize.

Chapter Five: Discussion

Summary of Results

The purpose of this study was to determine whether an active spiritual practice could affect depression and anxiety rates among non-heterosexual UCO students. The hypothesis was that students with an active spiritual practice would experience lower rates of depression and anxiety than students with no active spiritual practice. There was no statistically significant difference in the distribution of depression and anxiety scores between participants (n=11) by spiritual practice ($p = .639$, $p = .530$, respectively). The null hypothesis was accepted. This study found a relatively even distribution of depression and anxiety scores across all participants, regardless of their spiritual practice preferences. Despite the small sample size and lack of support for the original hypothesis, there are still conclusions to be drawn and implications for future research, health promotion practitioners, and the UCO campus.

Implications of Results

The sample size for this study was not large enough to achieve statistical significance, with small effect sizes found for both statistical analyses, but the results are still of value for future research, health promotion practitioners, and the University of Central Oklahoma. Although there has been a lack of consistency of instruments and results in previous studies, a positive, or gay-affirming, active spiritual practice can mitigate the effects of depression and anxiety for non-heterosexual individuals (Burris et al., 2009; Gattis et al., 2014; Walker & Longmire-Avital, 2012; Woods et al., 1999). Based on the findings of past research, this study separated the idea of spiritual practice from a religious affiliation and the potential inherent homonegativity found in some faiths (Crowell et al., 2015; Dahl & Galliher, 2012; Gattis et al.,

2014; Lease et al., 2005; Page, Lindahl, & Malik, 2013; Shilo & Savaya, 2012). The few previous studies that measured spirituality and religiosity showed more positive mental health outcomes for participants with a spiritual, though not necessarily religious, affiliation (Coleman, 2003; Lease et al., 2005). There has been no consistency in instrument selection or definition of spiritual practice in past research. This study adds to the existing literature by documenting careful selection of survey instruments - including instrument reliability and validity - and defining spiritual practice as its own variable detached from formal religious affiliation. Taking the results of previous research into account, along with this study's use of valid and reliable instruments with the *BMMRS, BDI-II,* and the *BAI*, it is interesting that an active spiritual practice appeared to have no impact on the participants' depression and anxiety scores. In fact, while the difference was not statistically significant, it was the ASP group with the higher average score on both the *BDI-II* and the *BAI*.

The maximum scores for both depression and anxiety were reported by one participant with an ASP. Another participant with an ASP reported a score of zero for depression but ten for anxiety. These drastic response variances may have skewed the results; with the small sample size, the mean score was more easily influenced by individual scores. These findings are similar to previous findings indicating no significant differences between mental health outcomes and religious or spiritual practices (Barnes & Meyer, 2012; Berry et al., 2013; Coleman, 2003; Shilo & Savaya, 2012). The most important fact to note from these results, though, is that all non-heterosexual students who participated in this study were experiencing symptoms of depression and anxiety at the time of data collection.

The mean *BMMRS* score for the ASP group was 24.60(±5.727), only a few points over the scoring threshold for an active spiritual practice. This average would, like the depression and anxiety scores, have been strongly influenced by single extreme scores. The maximum *BMMRS* score of 34 would have increased the mean disproportionately because of the small sample size. This may indicate that participants with a score only a few points above the scoring midpoint may have an active spiritual practice but it may not necessarily be a strong or fulfilling spiritual practice. The existing literature has shown it may be the type or quality of spiritual practice that influences mental health outcomes (Coleman, 2003; Gattis et al., 2014; Page et al., 2013; Tan, 2005). More work is needed to understand the interaction between spiritual practice and mental health status among non-heterosexual college students.

Future Research. Researchers should strive for better instrument consistency across studies, utilizing instruments with demonstrated validity and reliability to ensure accuracy of results, as demonstrated by this study. Using such instruments will also require researchers to provide participants with mental health support resources. Valid and reliable instruments measuring depression and anxiety, like the *BDI-II* and the *BAI* used in this study, can indicate clinically diagnosable incidents of these illnesses (Arneau, Meager, Norris, & Bramson, 2001; Hossein & Mousavi, 2008).

According to multiple participants, for gender identification on the demographics scale, *transgender* is not considered a gender within the non-heterosexual community. The demographics scale for future research within this population should perhaps classify gender into the following modified categories: male, female, transgender male, transgender female, unsure/ undecided, other (with space to specify). This eliminates the erroneous use of transgender as a

gender identification in and of itself and more appropriately separates genders between those still identifying with their birth gender and those who have transitioned from their birth gender (Treharne & Beres, 2016).

The use of a multi-dimensional scale to measure sexual orientation should continue to be used in future research to better understand the complex nature of sexual orientation (Lindley et al., 2012). On the sexual orientation scale, *pansexual* and *queer* should be included as options within the identification category for future research. These were the identifications specified by the participants who selected *Other* on the identification portion of the sexual orientation scale. According to additional notes from participants, these are the preferred designations for individuals who can potentially experience romantic attraction to any individual, regardless of that person's biological sex, gender identification, or orientation (Treharne & Beres, 2016). There was a recommendation to replace the word *sex* on the sexual orientation scale with the word *gender* for the attraction, identification, and behavior questions. It was suggested that for transgender individuals, the word *sex* in the context of the sexual orientation scale could be both problematic and triggering. To avoid causing undue distress to transgender participants in future studies, *gender* would be a more appropriate term for sexual orientation scales (Westbrook & Saperstein, 2015).

The *BDI-II* and *BAI* may need to be supplemented in future research with this target population. Transgender participants noted an issue with the *BDI-II* and the *BAI* specific to their situations as transgender individuals. Based on the participants' self-reported experiences, they recognized the impact their hormone treatments had on their moods and how it skewed their responses to the *BDI-II* and the *BAI*. While these instruments have been shown to be both

reliable and valid in numerous studies, as previously noted, they do not have a way to take into account the impact of hormonal changes on mood and behavior. For transgender students, the transition to a new gender may include hormonal therapy. These treatments could either eliminate symptoms of depression and anxiety, or mimic them (Colton, Meier, Fitzgerald, Pardo, & Babcock, 2011; Lee et al., 2016). These factors should be taken into account in the future to try to understand how hormone therapy may impact transgender individuals' mental health and how to help them maintain good mental health through the gender transition and hormonal fluctuations.

Research into the effects of spiritual practice on non-heterosexual students' mental health should look beyond religious affiliation. As the literature review for this study showed, the majority of existing research focuses on spiritual wellness in relation to an organized religion. This interpretation should be expanded to take into account spiritual wellness activities that are independent of a religious organization (Chandler, Holden, Kolander, 1992; Lavretsky, 2010). More research is needed to determine whether spiritual wellness practices, rather than strictly religious practices, can reduce the burden of depression and anxiety non-heterosexuals experience. Interventions already in use, such as the mindfulness-based stress reduction and meditation noted previously, should be researched for their effectiveness at reducing rates of depression and anxiety among non-heterosexual college students after they have been modified for the target population. The *BMMRS* inquires about participants' experiences with congregation members. It was noted by a participant this type of spiritual support came from a support group made up of friends outside a religiously-affiliated congregation. This feedback opens up new possibilities for future studies; perhaps a strong support group filled with positive

interpersonal relationships outside a religious organization could provide the same type of spiritual wellness benefit as a congregational support group for non-heterosexual individuals (Cohen, Yoon, & Johnstone, 2009). Future studies should also consider a mixed-methods research model. Quantitative analysis can provide the hard numerical data required for validation by part of the scientific community, but a qualitative component is vital to capture a full picture of the health and wellness of this population (Abushabha & Woelfel, 2003; Thomas, Nelson, & Silverman, 2015). Instruments should be linguistically designed for non-heterosexuals' mental and spiritual health, rather than the heterosexual majority (Nadal, 2016). Such research can increase the knowledge base by providing better insights into how spiritual practice, depression, and anxiety interact to impact non-heterosexual individuals.

Health Promotion Practitioners. Study participants' supplemental responses provided additional insight into the importance of appropriate terminology and special considerations, such as hormone therapy, that can impact their mental health and spiritual practices. Health promotion practitioners should be encouraged to support non-heterosexual college students by familiarizing themselves more with the Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ+) community and their research. This could better equip practitioners to improve communication with the non-heterosexual population. Using appropriate and current language is important when serving this population (Duvivier & Wiley, 2016; Gahagan & Colpitts, 2017). Health promotion practitioners should also be encouraged to partner with LGBTQ+ community leaders to adapt existing interventions/programs - often designed without LGBTQ+ individuals in mind - to be inclusive of the full spectrum of non-heterosexual orientation and non-binary gender identities (Colpitts & Gahagan, 2016). This study was fortunate to have participants who

were open and willing to educate the researcher on appropriate terminology and special considerations, such as hormone therapy, that can impact their mental health and spiritual experiences, even though this qualitative research piece was not built into the original study methodology. Such feedback may be vital to implement spiritual wellness interventions appropriately to support the LGBTQ+ community.

Non-religious spiritual wellness programs such as meditation, mindfulness, yoga, and visualization have been successfully used for many years to develop and improve individuals' spiritual wellness (Chandler, Holden, & Kolander, 1992). Mindfulness-based therapy has been shown to reduce symptoms of depression specifically in college students (McIndoo, File, Preddy, Clark, Hopko, 2016). Mindfulness-based stress reduction has demonstrated effectiveness in reducing anxiety over an extended period of time (Miller, Fletcher, & Kabat-Zinn, 1995). These generalized programs should be tailored to the LGBTQ+ community and their unique needs.

Improved partnerships between practitioners and the LGBTQ+ community should also be encouraged as a strategy for creating more effective programs. The LGBTQ+ community's self-awareness and existing support structure could be a great asset to health promotion practitioners (Rosenberg, Mills, & Rumbled, 2016). Health promotion practitioners should be mindful to utilize spiritual wellness interventions that are free from affiliation with any organized religious program, to avoid negative associations with non-gay affirming religions that may discourage non-heterosexuals from participation (Gattis et al., 2014; Lavretsky, 2010).

The UCO Campus. This study has demonstrated non-heterosexual students in the SAFE organization at UCO are experiencing depression and anxiety, regardless of whether or not they have an active spiritual practice. Based only on this study, the university should continue to

promote the on-campus Center for Counseling and Well-Being to all students and should make certain SAFE officers and members are aware of this mental health support service. This study also provided participants with a list of counseling centers in the Oklahoma City metro area, adapted and updated from the UCO counseling center's online list of resources, to ensure any student recognizing symptoms of depression and anxiety as they took the surveys would have access to treatment. The university should also make sure SAFE continues to have access to these types of up-to-date resources to provide to members. Future interventions could be developed to promote non-religious spiritual wellness among students. Even though this study's original hypothesis was not supported, spiritual wellness is still an important component of total health. Interventions such as mindfulness-based meditation, a practice independent of any specific faith, have been shown to have a positive impact emotional health and chronic health conditions (Bushnell, Čeko, & Low, 2013; Dane, 2000; "Meditation Practice," 2012; Rosenkranz, Davidson, MacCoon, Sheridan, Kalin, & Lutz, 2013). Mindfulness-based meditation has shown positive mental health benefits when incorporated into the classroom setting, reducing suicidal ideation in younger students (Britton, Lepp, Niles, Rocha, Fisher, & Gold, 2014). In college settings, students have provided positive feedback about mindfulness meditation as a stress reducer when incorporated into class time and this in-class meditation has been shown to have a potential positive impact on students' academic performance (Blackburn, 2015; Hartel, Nguyen, Guzik, 2017; Napora, 2013). Instructors could be supported with mindfulness training and encouraged to begin class periods with a brief mindfulness meditation session. Students may wish to pursue this spiritual wellness practice on their own after in-class

exposure; the university could include mindfulness resources with the information provided by the Center for Counseling and Well-Being.

The university could more widely promote the existing on-campus labyrinth to students specifically as a way to improve their total health and wellness, including mental and spiritual well-being. Labyrinths have been shown to improve depression and anxiety as well as promote spiritual wellness for those who engage in the practice of walking meditation on the guided path (Mawhinney, 2007; Sandor, 2005). Group labyrinth walking sessions could be conducted on a regular basis throughout the school week, and instructors could be supported in incorporating a visit to the labyrinth into their syllabi during the semester. Coordinating such interventions and promotions could be done in partnership with the SAFE organization, by scheduling spiritual wellness events with the SAFE organization as a host or designated sponsor. This would ensure that SAFE members experiencing depression and anxiety have direct access to these programs and experts and can derive as much benefit from such interventions as possible. Local counseling centers would be potential partners to support the university's efforts to improve students' mental and spiritual wellness, perhaps providing mindfulness training to instructors and walking meditation training for labyrinth interventions.

Limitations

This study had several limitations. Participants represented a small sample of non-heterosexual college students between the ages of 18 and 26, currently enrolled at a single southwestern university. The data collected were specific to this campus, thus limiting the generalizability of the findings. Despite multiple attempts to increase the sample size, the calculated appropriate sample size was not able to be obtained. In-person survey administration

by a heterosexual researcher who was not a member of the SAFE organization, as well as the sensitive subject matter, may have reduced students' willingness to participate, despite the strict measures used to assure privacy and confidentiality. Online survey administration may bring in more results for future researchers because of the anonymity it provides, but it could potentially eliminate the opportunity for participants to give open feedback to the researcher, as occurred with this study (Gahagan & Colpitts, 2017). Time was another limitation for this study. Survey collection took place in the spring semester, limiting the number of SAFE meetings available for participant recruitment. Finally, the number of different SAFE members at each meeting was a limitation. Many of the same members who had participated in the first survey administration made up the attendance at the second meeting, meaning multiple recruitment attempts - even over a longer period of time - may not have recruited more new participants.

Conclusion

This study adds to the literature that investigates the interaction between spiritual practice and mental health outcomes for non-heterosexual college students. Although this study did not find a significant difference in depression and anxiety rates among non-heterosexual participants by spiritual practice, it did show that non-heterosexual college students are experiencing depression and anxiety despite having an active spiritual practice. It is possible there are other variables, such as homonegativity and internalized homophobia developed from non-gay affirming religious organizations, affecting participants. In the existing literature, when these types of variables were controlled for in analysis, spirituality and religiosity showed a positive impact on mental health outcomes (Barnes & Meyer, 2012; Walker & Longmire-Avital, 2012). More in-depth research such as these studies may be needed to discern the underlying cause for

an active spiritual practice not to improve depression and anxiety rates among UCO's non-heterosexual students. While the result of this study was not anticipated, it may indicate non-heterosexual students at UCO need more intensive interventions to reduce their rates of depression and anxiety. This study was novel in its approach to define the variable of spiritual practice without attaching it to a specific religion, providing a precedent for future researchers to broaden their approach to spirituality as it relates to non-heterosexual individuals' mental health. A more open interpretation of spirituality may help develop more effective spiritual interventions for mental health, as those religions considered non-gay affirming can be detrimental to non-heterosexuals' mental health (Gattis et al., 2014). Unique to this study is the discovery of the need for improved communication among researchers, practitioners, and the LGBTQ+ community. Finally, this study set a precedent for calculating power and effect size so future research can estimate an appropriate sample size as the relationship between depression and anxiety and spiritual practice among non-heterosexual college students is further reviewed. On the UCO campus it will be important to support non-heterosexual students' mental health by continuing to provide counseling support and providing continual education and training on maintaining good mental and spiritual health.

The intersection of college entry age and the age of lifetime mental health disorder diagnoses makes college students a critical population to target in research and practice to reduce the disparity of depression and anxiety rates between heterosexual and non-heterosexual populations (Blanco et al., 2008; Hunt & Eisenberg, 2010; IES NCES, 2015; Said, Kypri & Bowman, 2012). More research is needed to increase understanding of the relationship between the spiritual practices of non-heterosexual college students and their mental health. Improved

research methodology can better inform interventions and assist in reducing the disparate rates of depression and anxiety burdening non-heterosexual college students.

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Tables

Table 1 *Literature Review Inclusion and Quality Criteria and Search Results*

Study	N	Age Range or Mean Age	Measures Assessed	Scales Used	Quality
Mental Health and Sexual Orientation					
Gilman et al., 2001	4910	15-54	Psychiatric disorders & Sexual orientation	CIDI for *DSM-III-R** Gender of sexual partners in the past five years	Moderate
Shenkman & Shmotkin, 2011.	438	15-26	Mental health & Sexual orientation	CES-D, SAS, SWLS, ABS, DTS, HS** Gay Identity Formation Questionnaire	High
Kirsch et al. 2015	92	M = 18.39	Psychological distress & Sexual orientation	Depression Anxiety Stress Scale & Perceived Stress Self-reported sexual orientation	Low
Bostwick et al., 2010	34653†	20 and older	Mood & anxiety disorders & Sexual orientation	AUDADIS-IV for *DSM-IV**** Sexual Identity, Sexual Attraction, & Sexual Behavior	Moderate
Bolton & Sareen, 2011	34653†	20 and older	Mental disorders & Sexual orientation	AUDADIS-IV for *DSM-IV* Self-reported sexual orientation identity	Moderate
Sandfort et al., 2001	5998	18-64	Psychiatric disorders & Sexual orientation	CIDI for *DSM-III-R* Gender of sexual partners in the past year	Moderate

Study	N	Age Range or Mean Age	Measures Assessed	Scales Used	Quality
Przedworski et al., 2015	34392	M = 21-26††	Mental disorders & distress & Sexual orientation	Questions asked to assess diagnosis in the past year, frequent mental distress, stressful events in the past year, and use of mental health services. Combined questions for sexual identity & behavior.	Low
Lindley et al., 2012	14412	24-32	Depressive symptoms & Sexual orientation	CES-D Sexual attraction, Sexual identity, & Sexual behavior	Moderate
Mental Health and Spirituality					
Burris et al., 2009	353	M = 19.8	Psychological health, Religiousness, & Spirituality	RAND MHI**** RCI-10 STS	Moderate
Berry et al., 2013	124	18-21	Mental Health & Religiosity/ spirituality	Mental health symptoms sub scale in the National College Health Assessment - II Religious expression, behaviors, & coping, beliefs about God, spiritual meaning	Moderate
Woods et al., 1999	106	35.4	Depression & Religious practice	Beck Depression Inventory Use of religious resources in the past 30 days	Low

Study	N	Age Range or Mean Age	Measures Assessed	Scales Used	Quality
Mental Health, Spirituality, and Sexual Orientation					
Gattis et al., 2014	2120	M = 23	Depressive symptoms, Religious affiliation, religiosity, & Sexual orientation	Depression subscale from Brief Symptom Inventory Self-selected religious affiliation Likert-type scale for importance of religiosity Homosexual-heterosexual rating scale	Moderate
Lease et al., 2005	583	M = 40.14	Psychological health, Spirituality, & Sexual orientation	CES-D, SWLS, PWB Santa Clara Strength of Religious Faith Questionnaire, Spiritual Involvement & Beliefs Scale, Intrinsic/Extrinsic-Revised Scale Orientation continuum scale	High
Dahl & Galliher, 2012	19	14-24	Depressive symptoms, Religious-related guilt & Incorporation of religious values, & sexual orientation	Self-reported experiences used for all measures	Low
Crowell et al., 2015	658	18-33	Depression, Religious affiliation, & Sexual orientation	Depression subscale of the CCAPS-34◆ Self-reported activity level with Latter-Day Saints church Lesbian/Gay Identity Scale	

Study	N	Age Range or Mean Age	Measures Assessed	Scales Used	Quality
Shilo & Savaya	461	16-23	Mental health, Religiosity, & Sexual orientation	Mental Health Inventory Self-selected religiosity scale Self-identified sexual orientation	Low
Page et al., 2013	170	14-24	Mental health, Religiosity, & Sexual orientation	Depression, anxiety, and self-esteem subscales from the BASC-2 - SRP-A RSSIQ◆◆ Self-identified sexual orientation	Moderate
Coleman, 2003	117	M = 38	Mental well-being, Spirituality, & Sexual orientation	Medical Outcome Study-30 Spiritual Well-Being Scale - Religious & Existential Well-Being subscales Self-identified sexual orientation	Moderate
Barnes & Meyer, 2012	396	18-58	Depressive symptoms, Religiosity, & Sexual orientation	CES-D Standard questions on religion from Fetzer Institute Self-identified sexual orientation	Moderate
Walker & Longmire-Avital, 2013	175	18-25	Mental health, Religious faith, & Sexual orientation	State-Trait Personality Inventory & CES-D Santa Clara Strength of Religious Faith Questionnaire Self-identified sexual orientation	Moderate

Note: Studies are listed in the order they are analyzed in this review. Measures Assessed refers to the study measures focused on for this review; some studies measured additional variables outside the scope of this review. Measures assessed are referred to as described by the authors in the original study. M = mean.
*Composite International Diagnostic Interview for psychiatric disorders based on *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition*
**Center for Epidemiological Studies-Depression Scale, Self-Anchoring Scale, Satisfaction With Life Scale, Affect Balance Scale, Delighted-Terrible Scale, Happiness Scale
***Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV for mood and anxiety disorders based on *Diagnostic and Statistical Manual-IV*
****RAND Health Insurance Study Mental Health Inventory, Religious Commitment Inventory-10, Spiritual Transcendence Scale
†Both studies analyzed data from Wave 2 of the National Epidemiological Survey on Alcohol and Related Conditions, administered from 2004-2005
††Mean ages were reported by sexual orientation, ranging from 21 years to 26 years
◆Counseling Center Assessment of Psychological Symptoms
◆◆Behavior Assessment System for Children, Second Edition, Self-Report-Adolescent version, Religious, Spiritual, and Sexual Identities Questionnaire

Table 2 *Characteristics, Measures, and Quality of Analyzed Studies*

Inclusion Criteria	Quality Criteria	High	Moderate	Low
Included participants 18 and older	Measured mental health with multiple scales *or* with a scale based on clinical diagnostic standards	Met at least two quality criteria	Met at least one quality criteria	Met none of the quality criteria
Measured anxiety or depression	Measured spirituality/ religiosity with multiple scales			
Measured the relationship between mental health and spirituality or religiosity	Measured sexual orientation with a scale			
Measured the relationship between mental health and sexual orientation				
Measured the relationship between mental health, sexual orientation, and spirituality/ religiosity				

Table 3 *Descriptive Statistics of the Baseline Characteristics of the Sample*

Demograhpics	N	Percent	Mean
No Active Spiritual Practice	6	54.5%	7.67(±2.251)
Active Spiritual Practice	5	45.5%	24.60(±5.727)
18-20	5	45.5%	
21-23	6	54.5%	
Male	3	27.3%	
Female	4	36.4%	
Transgender	4	46.4%	
Freshman	2	18.2%	
Sophomore	3	27.3%	
Junior	2	18.2%	
Senior	4	36.4%	
Caucasian	6	54.5%	
Caucasian & AI/AN	3	27.3%	
AI/AN	1	9.1%	
African American	1	9.1%	
Full-Time	9	81.8%	
Part-Time	2	18.2%	

Note: AI/AN = American Indian / Alaska Native.

Table 4 *Frequencies and Percentages for the Sexual Orientation Scale*

	N	Percent
Attraction		
Only the same sex	4	36.4%
Both sexes	7	63.6%
Identification		
Bisexual	1	9.1%
Mostly Homosexual	2	18.2%
Homosexual	4	36.4%
Asexual	1	9.1%
Other	3	27.3%
Behavior with the Same Sex		
Yes	10	90.9%
No	1	9.1%
Behavior: Number of Partners		
1-3	3	27.3%
4-6	3	27.3%
7-10	3	27.3%
11 or more	1	9.1%

Table 5 *Descriptive Statistics for Depression and Anxiety by Spiritual Practice*

	Depression	Anxiety
NASP		
Mean	18.33	21.33
SD	±6.563	±12.754
Skewness	.429	1.863
Kurtosis	1.531	4.187
ASP		
Mean	20.40	24.40
SD	±19.731	±16.502
Skewness	.429	.497
Kurtosis	-.984	-2.226

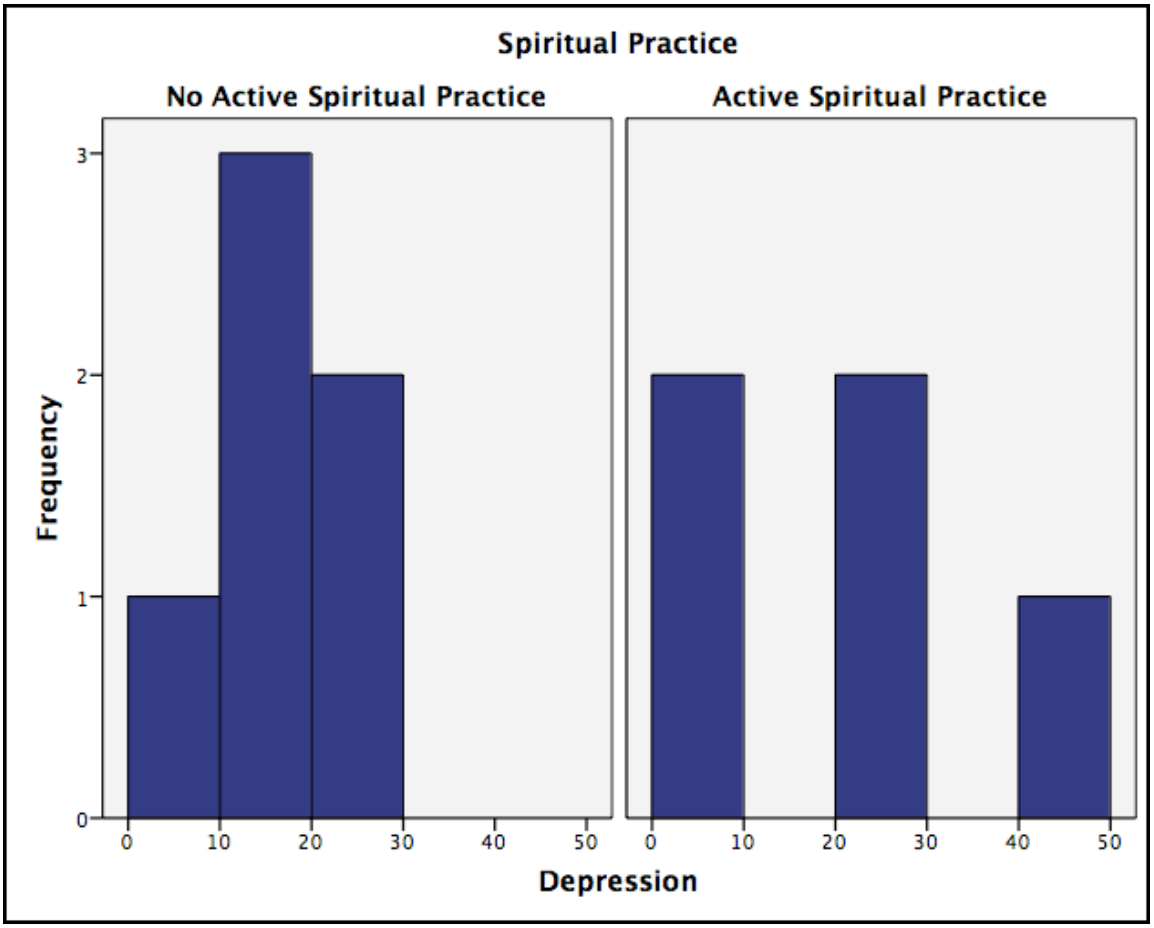
Note: NASP = no active spiritual practice, ASP = active spiritual practice, SD = standard deviation.

Table 6 *Independent t Test Statistical Analysis Results*

	Depression	Anxiety
t(df)	-.224(4.739)	-3.48(9)
p	.832	.736
d	.315	.241
Mean Difference	2.067	3.067

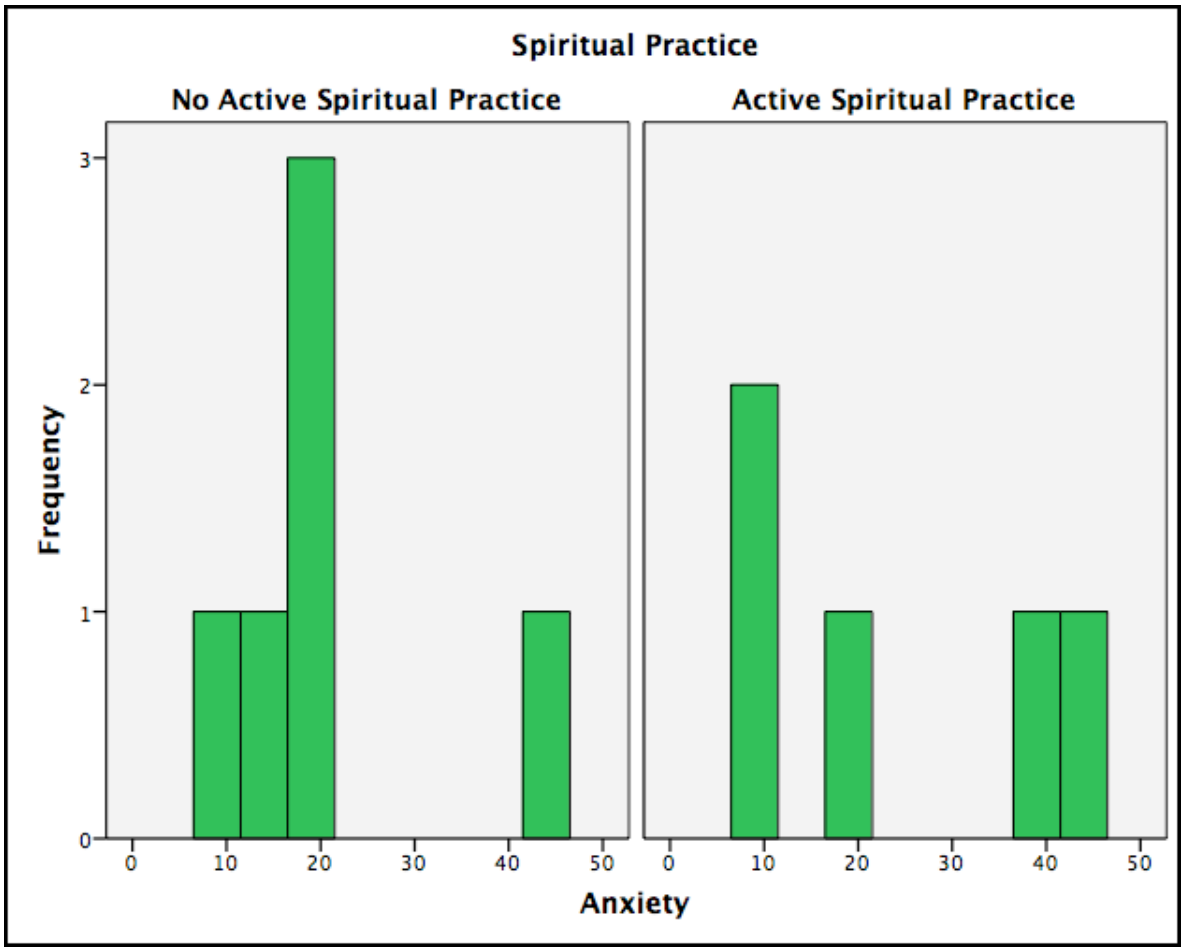
Note: *d* = effect size.

Figures



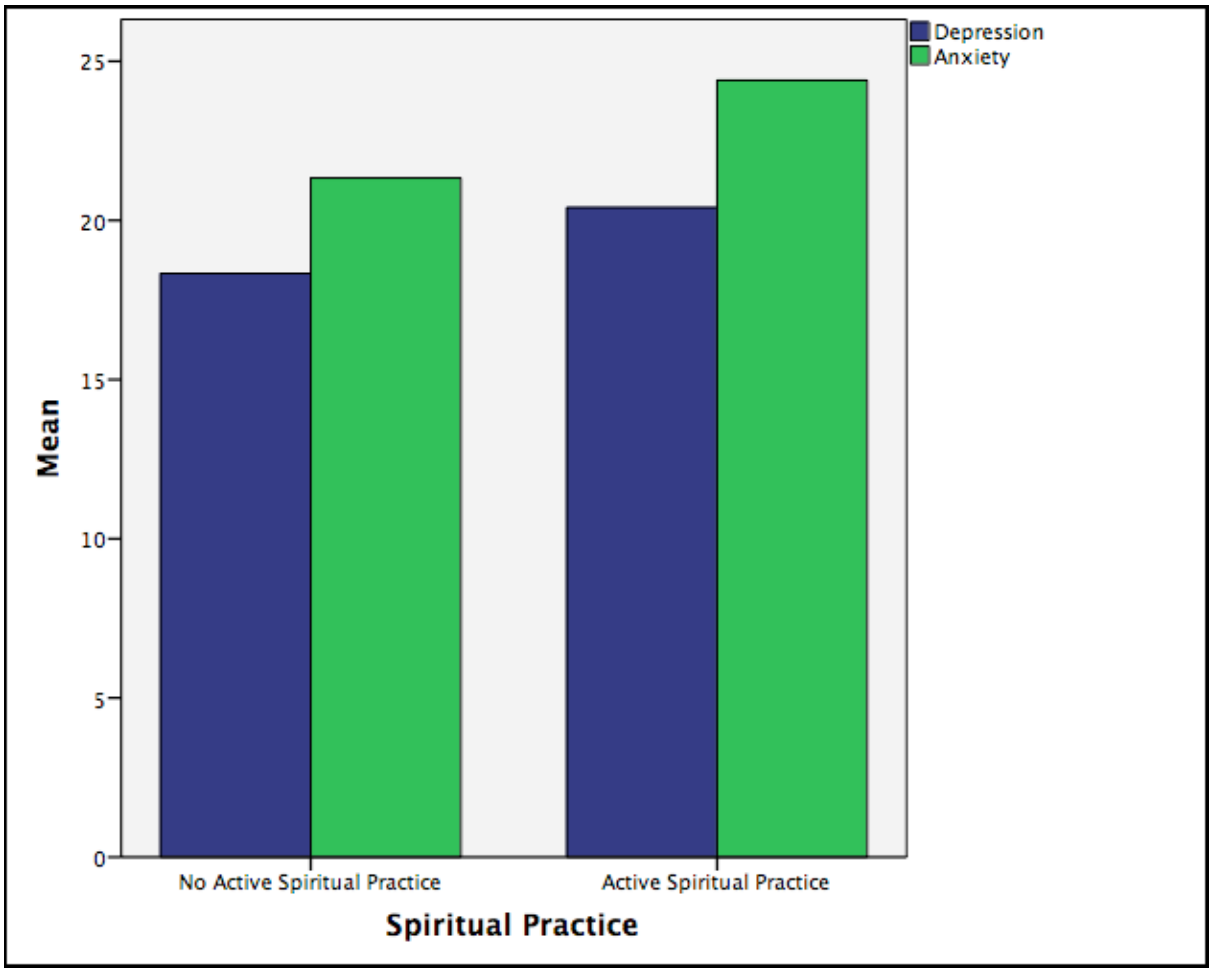
Key:
0-13 = minimal depression
14-19 = mild depression
20-28 = moderate depression
29-63 = severe depression

Figure 1. Bar graph displaying the frequency of depression score ranges by active or no active spiritual practice.



Key:
0-21 = very low anxiety
22-35 = moderate anxiety
36-63 = persistent or high anxiety

Figure 2. Bar graph displaying the frequency of anxiety score ranges among participants by active or no active spiritual practice.



Key:
0-13 = minimal depression
14-19 = mild depression
20-28 = moderate depression
29-63 = severe depression

0-21 = very low anxiety
22-35 = moderate anxiety
36-63 = persistent or high anxiety

Figure 3. Cluster bar graph displaying the difference in means for the dependent variables depression and anxiety by the independent variable spiritual practice.

Appendix A: Informed Consent Form

UNIVERSITY OF CENTRAL OKLAHOMA

INFORMED CONSENT FORM

Research Project Title: Spirituality, Sexual Orientation, and Mental Health Among College Students

Researcher (s): Lorry Cieri

A. Purpose of this research: The purpose of this research study is to determine what relationship, if any, exists between college students' spiritual practices, sexual orientation, and mental health status.

B. Procedures/treatments involved: Participants will complete multi-question surveys to determine mental health status and spiritual practices; participants will also be assessed for demographic characteristics including age, gender, race and sexual orientation.

C. Expected length of participation: Participants will be assessed at one point in the semester. Survey completion is expected to take 30-45 minutes.

D. Potential benefits: There are no individual benefits to participants in this study.

E. Potential risks or discomforts: Spirituality, sexual orientation, and mental health are all very personal topics. It is possible some of these questions may cause mental or physical distress and could trigger unpleasant thoughts or physical sensations.

F. Medical/mental health contact information (if required): UCO Center for Counseling and Well-Being, 405 974-2215

G. Contact information for researchers: Lorry Cieri, lcieri@uco.edu

H. Contact information for UCO IRB: Office of Research Compliance, Academic Affairs, 405-974-5497, irb@uco.edu

Explanation of confidentiality and privacy: All participant data will be kept securely, either in a password-protected electronic file on a password-protected computer or locked in a secure office here on campus. Participants will be assigned a random code for all data entry and data analysis purposes. At the end of the research study, all participant data will be destroyed.

J. Assurance of voluntary participation: Participation in this study is voluntary. There is no negative impact to you or your academic status should you choose not to participate. You may choose not to participate at any point throughout the semester and are not required to complete all three surveys should you choose not to.

AFFIRMATION BY RESEARCH SUBJECT

I hereby voluntarily agree to participate in the above listed research project and further understand the above listed explanations and descriptions of the research project. I also understand that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty. I acknowledge that I am at least 18 years old. I have read and fully understand this Informed Consent Form. I sign it freely and voluntarily. I acknowledge that a copy of this Informed Consent Form has been given to me to keep.

Research Subject's Name: _____

Signature: _____ Date _____

Appendix B: Amended Informed Consent Form

UNIVERSITY OF CENTRAL OKLAHOMA

INFORMED CONSENT FORM

Research Project Title: Spirituality, Sexual Orientation, and Mental Health Among College Students

Researcher (s): Lorry Cieri

A. Purpose of this research: The purpose of this research study is to determine what relationship, if any, exists between college students' spiritual practices, sexual orientation, and mental health status.

B. Procedures/treatments involved: Participants will complete multi-question surveys to determine mental health status and spiritual practices; participants will also be assessed for demographic characteristics including age, gender, race and sexual orientation.

C. Expected length of participation: Participants will be assessed at one point in the semester. Survey completion is expected to take 30-45 minutes.

D. Potential benefits: There are no individual benefits to participants in this study.

E. Potential risks or discomforts: Spirituality, sexual orientation, and mental health are all very personal topics. It is possible some of these questions may cause mental or physical distress and could trigger unpleasant thoughts or physical sensations.

F. Medical/mental health contact information (if required): UCO Center for Counseling and Well-Being, 405 974-2215

G. Contact information for researchers: Lorry Cieri, lcieri@uco.edu

H. Contact information for UCO IRB: Office of Research Compliance, Academic Affairs, 405-974-5497, irb@uco.edu

Explanation of confidentiality and privacy: All electronic correspondence between participants and the researcher will be through the researcher's password-protected UCO e-mail account. Any on-campus in-person survey administration arrangements will be made only through the secure e-mail account and will be kept confidential. Once data collection is complete, all electronic correspondence with participants will be moved to the trash folder where the purge function can be used to permanently erase the e-mail messages. All participant data will be kept securely, either in a password-protected electronic file on a password-protected computer or locked in a secure office here on campus. Participants will be assigned a random code for all data entry and data analysis purposes. At the end of the research study, all participant data will be destroyed.

J. Assurance of voluntary participation: Participation in this study is voluntary. There is no negative impact to you or your academic status should you choose not to participate. You may choose not to participate at any point throughout the semester and are not required to complete all three surveys should you choose not to.

AFFIRMATION BY RESEARCH SUBJECT

I hereby voluntarily agree to participate in the above listed research project and further understand the above listed explanations and descriptions of the research project. I also understand that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty. I acknowledge that I am at

least 18 years old. I have read and fully understand this Informed Consent Form. I sign it freely and voluntarily. I acknowledge that a copy of this Informed Consent Form has been given to me to keep.

Research Subject's Name: _____

Signature: _____ Date _____

Appendix C: Institutional Review Board Application

UCO IRB Number _____
For Office Use Only

INSTITUTIONAL REVIEW BOARD
APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH
(Pursuant to Title 45-Code of Federal Regulations-Part 46)

Date: 11-20-16

Title of Project: Spirituality, Sexual Orientation, and Mental Health Among College Students

Principal Investigator(s): Lorry Cieri

Name of Primary Investigator (PI): Lorry Cieri
Title: Graduate Student
Department: Kinesiology and Health Studies
College: College of Education and Professional Studies
Campus Box: n/a
Campus Phone: n/a
PI Status: Current student
Email (UCO Required) : lcieri@uco.edu
Mailing Address: 803 City Ave Apt 87, Moore, OK 73160
Daytime Phone : 405-496-7976

Name of Co-PI: Jamie Dunnington
Title: Instructor
Department : Kinesiology and Health Studies
College : College of Education and Professional Studies
Campus Box: Box 189
Campus Phone: 405-974-5058
PI Status: Faculty
Email (UCO Required): jdunnington@uco.edu
Mailing Address : c/o University of Central Oklahoma, 100 N University Dr Box 189, Edmond, OK 73034
Daytime Phone: 405-974-5058

Specify Type and Source of Funding: n/a

---

1. **Describe the purpose/hypothesis of the project or the research problem in enough detail that we can ascertain what the project is about. Describe why it is being done and the importance of the knowledge expected to result. Explain how the project/study fits with and extends current knowledge.**
   The purpose of this research project is to determine the relationship between sexual orientation, depression and anxiety, and spiritual practice. The project is

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being done to determine whether or not spiritual practice of any kind is a protective factor against depression and anxiety in the non-heterosexual college student population. This population is at higher risk for negative mental health outcomes. Current literature reviews sexual orientation and its relationship with mental health at length and also reviews religious and spiritual practices and their impacts on mental health outcomes. Very little research is being done to assess all three variables together and even fewer discuss the potential mental health intervention options that could result from such a study. This study will examine all three variables using reliable and valid scales to measure each and will discuss possibilities for future intervention research to alleviate the disparate burden of depression and anxiety affection non-heterosexual college students.

2. **Describe the subjects needed for this project and, at a minimum, provide the following information:**
   a. **The type of individuals needed as subjects:**

Any UCO Student
Students in investigator(s) class
Other (describe below) **X**
UCO students between 18-26 years old who identify as non-heterosexual

   b. **The procedures used to recruit subjects:**

Advertisement (flyer)
Email blast
Direct/targeted email
Online posting
In-class announcement
Other (describe below) **X**
In-person announcement at Student Alliance For Equality (SAFE) organization meetings combined with referrals from meeting attendees using provided written recruitment form.

   c. **Where will the recruitment of subjects occur?**
On the UCO campus at SAFE meeting space.

   d. **Do you plan to recruit subjects from outside businesses or other organizations?**

Yes **No X**

If "yes," attach a copy of the required written permission (email or letter) from the appropriate person authorized to grant such permission.

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e. **Do you plan to recruit from specific classes?**

Yes **No X**

If "yes", attach a copy of the required written permission (email or letter) from the course instructor.

If recruitment occurs in the classroom, describe measures to minimize undue influence or coercion during recruitment:

f. **Do you plan to recruit subjects via email or conduct any of your research via the internet?**

Yes **No X**

If "yes", indicate which of the following you will use:

SONA
Survey Monkey
Survey Share
Qualtrics
Other
None

Please enter an explanation if "Other" is chosen.

You must give a copy of your IRB application to the UCO Office of Information Technology for authorization. This may be done simultaneous to ORC submission.

g. **Do you intend to use an oral or written script or any materials (flyer, letter, email, advertisement, announcements) as part of the recruitment of research subjects?**

Yes X **No**

If "yes", attach a copy of these scripts/documents.

3.

a. **What is the maximum number of subjects you expect to participate?**
80

Provide an explanation for that number. This estimate is based on the

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average number of SAFE meeting attendees, 45-65 members attending, estimated exclusion of heterosexual members, and possible referrals for participation.

b. **Will you be specifically including or targeting any of the following groups for research subjects? (Select all that apply)**

Minors (<18 years old)
Cognitively Impaired
Pregnant Women
Prisoners
Native Americans
Seniors (65 or older)
None of the above **X**

If any were selected, please explain the additional safeguards used to protect the welfare of these vulnerable groups.

4.

a. **Describe the methods to be used in the study, including study design, measurements or observations of subjects, and what subjects will experience. Provide the estimated total time to complete surveys/ questionnaires, etc.)**

The study will be conducted as in-person administered surveys using approximately 40 minutes of time for students to complete a demographics assessment, a sexual orientation identifier scale, the Beck Depression Inventory II, the Beck Anxiety Inventory, and the Brief Multidimensional Measurement of Religiousness/Spirituality. Surveys will be administered either after SAFE meetings or in a private room reserved in the UCO Chambers Library, depending on participants' desire for privacy. Data will be analyzed using independent t-tests.

b. Will you be using questionnaires, surveys, tests, or other written instruments?

Yes X No

If "yes", attach a copy of these scripts/documents.

c. **Where will data actually be collected (i.e. room number, place)?**

SAFE organization meeting space or in one of the private study rooms in the UCO Chambers Library

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d. **Will you be using existing data?**

Yes **No X**

If "yes", are data de-identified?

Yes **No** **n/a**

If "yes", is database available to the public?

Yes **No** **n/a**

e. **Will tissue or blood samples be collected for data?**

Yes **No X**

If "yes", explain the procedures for disposal.

f. **Projected start date :**

Upon IRB Approval **X**
Other (specify)

g. **Projected end date:** Estimated end for data collection is mid-spring semester of 2017. Thesis completion date projected for end of spring 2017 semester.

5. **Will medical clearance be necessary for subjects to participate because of tissue or blood sampling, or administration of food or drugs, or physical exercise conditioning?**

Yes **No X**

If "yes", explain how the medical clearance will be obtained.

6. **Does the research involve any of the following? (select all that apply)**

Physical stress including exercise or exertion
Psychological or social stress **X - potential risk**
Exposure to radiation
Legal risk
Economic risk
Exposure to infectious disease
Personal or sensitive information about subject or family

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Offensive, threatening, or degrading materials
Use of confidential records (medical or educational)
None of the above
Other (explain below)

For each type of risk selected fill out a-c below:

a. **Describe the amount of risk or harm anticipated.**

Participants will be surveyed over spiritual practice and mental health indicators for depression and anxiety as well as their sexual orientation. These may be potentially triggering subjects for students and could cause psychological distress when they report on these questions.

b. **Justify why the risk is necessary.**
The risk is necessary to assess mental health status of students and to determine current spiritual practices in order to determine the risk to non-heterosexual UCO students for adverse mental health issues and determine if spiritual practice may be an effective protective factor or potential intervention to mitigate the effects of depression and anxiety in this student population.

c. **Explain how the risk will be minimized.**
Participants will be provided with contact information for the UCO counseling center as well as national hotline information for mental health issues.

7.

a) **Will the subjects be deceived or misled in any way?**

Yes No X

b) **Describe the deception or omission, justify the necessity, and explain how and when subjects will be debriefed (attach debriefing script).**

n/a

8. **Will any inducements be offered to the subjects for their participation?**

Yes No X

a. **If "yes", please describe the inducements.**
Course Credit (complete b. below)
Extra Credit (complete b. below)

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Money (specify amount)
Other (specify below)
n/a

b. **If course credit or extra credit is offered, what alternative means of obtaining additional credit are available to those students who do not wish to participate in research project?**
n/a

9.

a. **How will consent be obtained?**

Select all that apply:

Subject will sign consent form **X**
Subject will be given online consent*
Subject will be given an information sheet*
Subject will give verbal consent*
Other or no consent (explain below how voluntary participation will be secured)

__Submit a Waiver of Documentation (available at our website) with your application if there is no signed consent form.__

Attach a copy of the consent form or information sheet (see Informed Consent Form guidelines at http://www.uco.edu/academic-affairs/research-compliance/).

b. **Who will be consented? (select all that apply)**

Participant **X**
Child (<18)
Parent/Legal Guardian

c. **Specify where consenting will occur:**

At time/place of survey administration

d. **Is a Waiver of Consent requested? (If approved, informed consent will not be obtained.)**

Yes **No X**

e. **Do you have or will you obtain a Certificate of Confidentiality?**

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Yes **No X**

If "yes", please provide a copy once obtained.

10.

a. **Will any aspect of the data be made a part of a record that can be identified with the subject?**

Yes **No X**

If "yes", describe and justify the necessity. Explain when the data will be de-identified.

b. **Will a master code sheet be kept for purposes of identity security?**

Yes X **No**

If "yes", explain where the code sheet will be stored and when it will be destroyed.
The code sheet will be stored in a password-protected spreadsheet on a password protected hard drive. Once the study is complete, the file will be permanently erased from the hard drive.

c. **Does this study involve?**
Audio taping of the subjects
Video taping of the subjects
Taking photographs of the subjects
Digital imaging of the subjects
None of the above **X**

If "yes", explain necessity and attach a copy of release or permission form. Describe the storage, disposition, and security provisions taken to protect recordings/photos.

d. **Will subjects be identifiable in these recordings?**

Yes **No** n/a

If "yes", explain why this is necessary.

11. **Please describe the steps you will take to ensure the privacy and confidentiality of the data you collect by answering the following questions:**

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a. **How will the data be reported or disseminated?**

Group/aggregate **X**
Single subject/case study
Other (describe below)

b. **Where (specify office #) and how will the data be securely stored?**

Paper surveys will be stored in office WAH 11 with Co-PI Ms. Jamie Dunnington. Electronic data files will be stored in password-protected documents on the PI's password-protected computer.

c. **Who will have access to the data and/or password?**

PI
Co-PI
Both **X**
Other (describe below)

d. **Who will be responsible for secure storage?**

PI
Co-PI
Both **X**
Other (describe below)

e. **What will the length of time each of the following will be kept?**

Paper data documents: Through end of study - 5/14/2017
Electronic data documents: Through end of study - 5/14/2017
Signed Informed Consent Forms (Federal regulations require a minimum of 3 years): 5/14/2020

f. **Who will be responsible for destruction of the data?**

PI

g. **When and how will the data be destroyed? Be sure to specify for electronic data, paper data, and code sheets (as relevant).**

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Electronic data, including electronic code sheet, will be permanently erased from the computer. All paper data will be shredded. Destruction will take place immediately post-study.

12. **Will the fact that a subject did or did not participate in a specific experiment or study be made a part of any record available to supervisor, teacher, or employer?**

    Yes **No X**

    If "yes", describe and justify the necessity.

13. **Describe the benefits of participation for subjects (if any). [If there in none, say so].**
    There is no benefit to participants.

14. **Describe the benefits of your study to society.**

    This study will bring more awareness to the disparate rates of mental health issues among non-heterosexual college students. Based on study results, new research possibilities may emerge to explore the impact of spiritual practice on mental health among this population. As more research is conducted, new on-campus interventions can be developed that incorporate spiritual practice to improve depression and anxiety symptoms and are specified to non-heterosexual students. With intervention tracking and more research, programs can be broadened to benefit not only UCO students but also the non-heterosexual community outside the campus setting.

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REQUIRED AUTHORIZATION SIGNATURES
SIGNATURE/AFFIRMATION/REPRESENTATION OF PRINCIPAL INVESTIGATOR(S):
(Primary PI must read and initial by hand at each of the below.)

1. **X** This application represents an accurate and complete description of my proposed research project.
2. **X** I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.
3. **X** I agree to comply fully with any requirements made by the UCO IRB.
4. **X** The human contact portion of my (our) research will not begin until the UCO IRB has given its written approval.
5. **X** Any additions or changes after the project has been approved will be submitted to the IRB for approval prior to implementation.

Lorry Gail Cieri — 11-22-16
Signature of Primary Principal Investigator — Date

Jamie Dunnington — 11/22/16
Date
Signature of Co-Primary Principal Investigator

If additional Co-PIs are associated with this project, please attach an additional sheet with name, signature, and date.

I have reviewed this Application for Review of Human Subjects Research, and, subject to approval by the UCO Institutional Board, authorize the Principal Investigator(s) to conduct this research. My signature acknowledges that I am aware of this project.

Name of Department Chair : ~~Jamie Dunnington~~ Dr. Debra Traywick
Department : Kinesiology and Health Studies

[signature] — 11/22/16
Signature of Department Chair — Date

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Name of College Dean : Dr. James R. Machell
College: College of Education and Professional Studies

Signature of College Dean — Date: 11/22/16

UCO Office of Information Technology (for all e-based research)

Name of UCO IT Representative: _____

Signature of UCO IT Representative — Date

UNIVERSITY OF Central Oklahoma

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CHECKLIST FOR IRB APPLICATION SUBMISSION
Please mark which documents you have attached to your IRB Application:

	Attached	Not Applicable
Research Proposal (i.e. thesis proposal, RCSA application, grant proposal)	Yes	
Recruitment Script/documents	Yes	
Informed Consent Form (or Waiver)	Yes	
Measurement instrument(s) (questionnaires, surveys, etc.)	Yes	
Written authorization--professors, organizations, etc.	Yes	
Protecting Human Research Participants (PHRP) Training Certificate(s)	Yes	
Have you submitted your application to the Office of Information Technology for approval?	Yes	

CONTACT INFORMATION FOR QUESTIONS OR CONCERNS:

Office of Research Compliance, Academic Affairs
405-974-5497
irb@uco.edu

Submit one hard copy of your application, with all required signatures to:
UCO-IRB Office
NUC 341, Campus Box 132
Edmond, OK 73034
405-974-5497
405-974-3818 (fax)

AND
Submit one electronic file without signatures to irb@uco.edu.

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Please note your application will not be processed until the original application with all required signatures is received.

Appendix A

List all study personnel and indicate how they are involved

Research Staff (Last, First)	**Highest Degree Earned (i.e. Ph.D, M.A., BA., etc.)**	**Affiliation (UCO or other)**	**Role in this research (PI, Co-PI,Data Collection, Data Entry, Interviews, etc.)**	**PHRP* Certificate Date**	**UCO Email Address**
Cieri, Lorry	BA	UCO	PI	08/22/2015	lcieri@uco.edu
Dunnington, Jamie		UCO	Co-PI	01/05/2017	jdunnington@uco.edu

*Protecting Human Research Participants (PHRP) is a National Institutes of Health on-line training course required by the Department of Health and Human Services regulations. Visit http://phrp.nihtraining.com/users/login.php. Copies of Certificates of Completion should be attached to the application. Recertification is required every two years and CITI certification can be substituted.

PHRP certification is required of all study personnel.

Study personnel who are not a PI or Co-PI must complete, sign, and submit an IRB Personnel Agreement Form.

UNIVERSITY OF Central Oklahoma

UCO IRB Number _____
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Appendix B

Required for Student Investigators

Purpose of this project:

Student qualification to conduct research: (select all that apply)

Currently in or completed research methods course	X
Current or prior experience as an independent or supervised Research Assistant	
None (If None, Faculty Mentor assumes additional responsibility of training)	

Faculty Oversight Agreement

I have reviewed and approved this application and I agree to ensure that all UCO IRB regulations will be complied with.

Name of Faculty Member: Jamie Dunnington

Jamie Dunnington — Signature of Faculty Member:

11/22/16 — Date:

*See Student Research Guidelines on our website: www.uco.edu/academic-affairs/researchcompliance.

Appendix D: Institutional Review Board Amendment Application

UNIVERSITY OF CENTRAL OKLAHOMA INSTITUTIONAL REVIEW BOARD

IRB Amendment Application

IRB approval is required *prior to implementation* of any change to an approved study. To request a modification, complete the following application and provide the applicable documents.

Please complete this form and email as an attachment to irb@uco.edu (email from Principal Investigator will be accepted in lieu of signature)

DATE: 4/27/2017

IRB# 16204 **Title**: Spirituality, Sexual Orientation, and Mental Health Among College Students

Principal Investigator: Lorry Gail Cieri

A. Provide a brief description of the proposed change to the approved research and the reason for the change. Recruitment of participants was originally to be done only in person at SAFE meetings and through face-to-face referrals. Fourteen surveys have been collected through this method; more responses would be beneficial to this research project. The SAFE faculty advisor has offered to post a recruitment statement on the organization's Facebook page to attempt to recruit more participants for the project. E-mail communication will be used to set up a time and location on the UCO campus for in-person survey administration. The e-mail account being used is a password-protected UCO account. Once data collection is complete, all electronic correspondence with participants will be moved to the trash folder where the purge function can be used to permanently erase the e-mail messages. Survey administration will follow the same confidentiality protocols outlined in the original, previously approved IRB application. Online recruitment offers an opportunity to obtain more data which would help achieve statistical significance and provide more results for discussion, drawing conclusions, and suggestions for future research and potential interventions for UCO students. The only changes to the already-approved recruitment procedures is using a Facebook post to replace an in-person recruitment statement and the use of a secure e-mail account to set up a confidential survey administration time on the UCO campus rather than administering surveys at a pre-designated SAFE meeting time.

B. The proposed modification includes (check all that apply):

Changes to the research team (additions, deletions)
Changes to approved research or recruitment sites **X**
Changes to the number of approved subjects
Changes in the procedure(s) including manipulations, assessments, etc.

Changes, additions, or deletions to the consent form(s)
Changes in recruitment material (flyers, etc.) **X**
Other

C. Attach supporting documents as applicable (check all that apply):
Signed personnel agreement indicating understanding and compliance with regulations
Letter of permission to recruit subjects
Revised description of experimental procedures
Revised consent form* **X**
Revised recruitment materials (flyers, advertisements, etc.)
Other

*When a revised consent form is submitted, please submit a copy of the original, the revised with changes highlighted, and a clean copy of the revised form.

Appendix E: Institutional Review Board Approval Letter

Lorry Cieri <lcieri@uco.edu>

IRB #16204 Approval

2 messages

IRB <IRB@uco.edu> Fri, Feb 3, 2017 at 9:43 AM
To: Lorry Cieri <lcieri@uco.edu>, Jamie Dunnington <jdunnington@uco.edu>

February 3, 2017 IRB Application #: 16204

Proposal Title: Spirituality, Sexual Orientation, And Mental Health Among College Students

Type of Review: Initial-Expedited

Investigator(s):

Ms. Lorry Cieri

Ms. Jamie Dunnington

Department of Kinesiology & Health Studies

College of Education & Professional Studies

Campus Box 189

University of Central Oklahoma

Edmond, OK 73034

Dear Ms. Cieri and Ms. Dunnington:

Re: Application for IRB Review of Research Involving Human Subjects

We have received your materials for your application. The UCO IRB has determined that the above named application is APPROVED BY EXPEDITED REVIEW. The Board has provided expedited review under 45 CFR 46.110, for research involving no more that minimal risk and research category 7.

Date of Approval: 2/2/2017

Date of Approval Expiration: 2/1/2018

If applicable, informed consent (and HIPAA authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. A stamped, approved copy of the informed consent form will be sent to you via campus mail. The IRB-approved consent form and process must be used. While this project is approved for the period noted above, any modification to the procedures and/or consent form must be approved prior to incorporation into the study. A written request is needed to initiate the amendment process. You will

be contacted in writing prior to the approval expiration to determine if a continuing review is needed, which must be obtained before the anniversary date. Notification of the completion of the project must be sent to the IRB office in writing and all records must be retained and available for audit for at least 3 years after the research has ended.

It is the responsibility of the investigators to promptly report to the IRB any serious or unexpected adverse events or unanticipated problems that may be a risk to the subjects.

On behalf of the UCO IRB, I wish you the best of luck with your research project. If our office can be of any further assistance, please do not hesitate to contact us.

Sincerely,

Rashi Shukla, Ph.D.

Assistant Chair, Institutional Review Board

University of Central Oklahoma

100 N. University Dr.

Edmond, OK 73034

405-974-5497

irb@uco.edu

Appendix F: Institutional Review Board Amendment Approval Letter

Lorry Cieri <lcieri@uco.edu>

IRB #16204 Amendment Approval

1 message

IRB <IRB@uco.edu> Tue, May 30, 2017 at 1:28 PM
To: Lorry Cieri <lcieri@uco.edu>, Jamie Dunnington <jdunnington@uco.edu>

May 30, 2017

IRB Application #: 16204

Proposal Title: Spirituality, Sexual Orientation, And Mental Health Among College Students

Type of Review: Amendment-Expedited

Investigator(s):

Ms. Lorry Cieri

Ms. Jamie Dunnington

Department of Kinesiology & Health Studies

College of Education & Professional Studies

Campus Box 189

University of Central Oklahoma

Edmond, OK 73034

Dear Ms. Cieri and Ms. Dunnington:

Re: IRB Amendment Application

We have received and reviewed your request for an amendment to your approved IRB application and supporting materials. The UCO IRB approves the following amendments to your application:

Changes to the research sites; recruitment material; Informed Consent Form.

Original Approval Date: 2/2/2017

Expiration Date: 2/1/2018

This project is approved for a one year period from the original approval date and any further modification to the procedures and/or consent form must be approved prior to its incorporation into the study. A written request is needed to initiate the amendment process. You will be notified in writing prior to the expiration of this approval to determine if a continuing review is needed.

We wish you continued success with your project. If our office can be of further assistance, please do not hesitate to contact us.

Sincerely,

Melissa Powers, Ph.D.

Chair, Institutional Review Board

Campus Box 132

University of Central Oklahoma

Edmond, OK 73034

405-974-5479

irb@uco.edu

Appendix G: SAFE Approval Letter

UNIVERSITY OF CENTRAL OKLAHOMA
Office of Academic Affairs

Monday, October 3, 2016

Robert Mather, Ph.D.
Chairperson, Institutional Review Board
Professor of Psychology, College of Education and Professional Studies
Campus Box 176

Dear Dr. Mather:

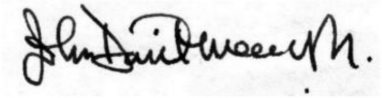
I write to inform you that I have meet with Lorry Gail Cieri and that Ms Cieri has provided me with a detailed description of her thesis project, which examines the connections among spirituality, sexual orientation, and mental health in college students.

The Student Alliance for Equality (SAFE), the University of Central Oklahoma's student organization for Lesbian, Gay, Bisexual, Transgender, and Queer students, strongly supports Ms Cieri's research project.

Ms Cieri has the permission of the officers and of the faculty advisors of the Student Alliance for Equality (SAFE) to solicit survey participants from among our organization's members and at our organization's meetings.

Please let me know should you require further information from me or from the Student Alliance for Equality (SAFE) as you consider Ms Cieri's application for Institutional Review Board authorization to conduct her survey.

Yours, truly,



J. David Macey, Jr., Ph.D.
Faculty Advisor, Student Alliance for Equality (SAFE)
Assistant Vice President, Division of Academic Affairs
Professor of English, College of Liberal Arts

Assistant Vice President for Global and Cultural Competencies, Office of Academic Affairs
100 N. University Dr., Box 138 • Edmond, OK 73034-5209 • Phone (405) 974-5922 • Fax (405) 974-3843

Appendix H: SAFE Approval Letter for Online Recruitment

UNIVERSITY OF Central Oklahoma

Monday, April 24, 2017

Melissa Powers, Ph.D.
Chairperson, Institutional Review Board
Associate Professor of Kinesiology and Health Studies
Campus Box 189

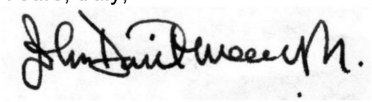
Dear Dr. Powers,

I write to inform you and the Institutional Review Board that Lorry Gail Cieri has the permission of the Student Alliance for Equality (SAFE)'s student officers and faculty advisors to solicit participants through our organization's Facebook group for the survey that she is conducting as part of her thesis research.

We welcome the opportunity to support Ms Cieri in this important and highly original research project!

Please let me know should you require further information from me or from SAFE.

Yours, truly,



J. David Macey, Jr., Ph.D.
Assistant Vice President, Division of Academic Affairs
Professor of English
Faculty Advisor, Student Alliance for Equality (SAFE)

Assistant Vice President for Global and Cultural Competencies, Office of Academic Affairs
100 N. University Dr., Box 83 • Edmond, OK 73034-5209 • Phone (405) 974-5922 • Fax (405) 974-3843

Appendix I: Recruitment Statement

My name is Lorry Cieri and I am a graduate student at the University of Central Oklahoma in the Kinesiology and Health Studies division. I am collecting data for my graduate thesis to examine the relationship between spiritual practice, depression and anxiety, and sexual orientation among college students. This project has been approved by the Institutional Review Board, #16204. If you volunteer and are eligible to participate, you would be asked to complete a demographics assessment and four survey forms. The time to complete these forms is approximately 40 minutes. Surveys will be administered in person, at a time and location arranged with each participant according to the participant's privacy and scheduling needs. To be eligible to participate in the study, participants must be between 18-26 years old, currently enrolled students at UCO, and personally identify as non-heterosexual. The ultimate goal of this study is to develop further research and potentially develop programs that will help address the disparate rates of depression and anxiety among non-heterosexual individuals. Your participation in this study is completely voluntary and is greatly appreciated.

Appendix J: Recruitment Referral Form

My name is Lorry Cieri and I am a graduate student at the University of Central Oklahoma in the Kinesiology and Health Studies division. I am collecting data for my graduate thesis to examine the relationship between spiritual practice, depression and anxiety, and sexual orientation among college students. This referral form is an invitation for you to participate in this study. This project has been approved by the Institutional Review Board, #16204. If you volunteer and are eligible to participate, you would be asked to complete a demographics assessment and four survey forms. The time to complete these forms is approximately 40 minutes. To find out more information about this study, check eligibility to participate, or volunteer, please e-mail me at lcieri@uco.edu. Thank you.

Appendix K: Facebook Recruitment Statement

My name is Lorry Cieri and I am a graduate student at UCO in the Wellness Management – Health Studies program. I am looking for UCO students who are between 18 and 26 years old and identify as non-heterosexual to take surveys for my graduate thesis. This project examines the relationship between spiritual practice, sexual orientation, and depression and anxiety. The Institutional Review Board has approved this project, #16204. Surveys take 15-30 minutes to complete. If you would be willing to participate, please e-mail me at lcieri@uco.edu. I will meet you on campus at your convenience to administer the surveys. My ultimate goal for this project is to develop further research and potentially develop programs at UCO that will help address the disparate rates of depression and anxiety among non-heterosexual individuals. Your participation in this study is completely voluntary and is greatly appreciated.

Appendix L: Demographic Questions

1. What is your age?

Less than 18 18-20 21-23 24-26 27-30 30-35

35-40 45-50 55-59 60 or older

2. What is your gender? Male Female Transgender Undecided/Unsure

3. What is your race? (select all that apply)

African American American Indian/Alaska Native Asian

Caucasian Hispanic/Latino Pacific Islander

4. What is your current academic classification?

Freshman Sophomore Junior Senior Graduate student

5. What is your current enrollment status? Full time Part time

Appendix M: Sexual Orientation Scale

1. Are you romantically attracted to (circle one)

Only the opposite sex

Only the same sex

Both sexes

No attraction

2. What is your sexual identification? (circle one)

Heterosexual

Mostly heterosexual

Bisexual

Mostly homosexual

Homosexual

Asexual (no sexual identification)

Other (please specify):

3. Over the course of your lifetime, have you ever engaged in sexual behavior with someone of the same sex? (circle one)

Yes No

If YES, how many same sex partners have you had?

1-3 4-6 7-10 11 or more

Appendix N: Brief Multidimensional Measurement of Religiousness/Spirituality

Brief Multidimensional Measure of Religiousness/Spirituality: 1999

For more information about this measure, see **Introduction: How to Use This Report.**

Daily Spiritual Experiences

The following questions deal with possible spiritual experiences. To what extent can you say you experience the following:

1. I feel God's presence.
   1 - Many times a day
   2 - Every day
   3 - Most days
   4 - Some days
   5 - Once in a while
   6 - Never or almost never

2. I find strength and comfort in my religion.
   1 - Many times a day
   2 - Every day
   3 - Most days
   4 - Some days
   5 - Once in a while
   6 - Never or almost never

3. I feel deep inner peace or harmony.
   1 - Many times a day
   2 - Every day
   3 - Most days
   4 - Some days
   5 - Once in a while
   6 - Never or almost never

4. I desire to be closer to or in union with God.
   1 - Many times a day
   2 - Every day
   3 - Most days
   4 - Some days
   5 - Once in a while
   6 - Never or almost never

5. I feel God's love for me, directly or through others.
   1 - Many times a day
   2 - Every day
   3 - Most days
   4 - Some days
   5 - Once in a while
   6 - Never or almost never

6. I am spiritually touched by the beauty of creation.
   1 - Many times a day
   2 - Every day
   3 - Most days
   4 - Some days
   5 - Once in a while
   6 - Never or almost never

Meaning

See Appendix at the end of this section.

Values/Beliefs

7. I believe in a God who watches over me.
   1 - Strongly agree
   2 - Agree
   3 - Disagree
   4 - Strongly disagree

8. I feel a deep sense of responsibility for reducing pain and suffering in the world.
   1 - Strongly agree
   2 - Agree
   3 - Disagree
   4 - Strongly disagree

Forgiveness

Because of my religious or spiritual beliefs:

9. I have forgiven myself for things that I have done wrong.
   - 1 - Always or almost always
   - 2 - Often
   - 3 - Seldom
   - 4 - Never

10. I have forgiven those who hurt me.
   - 1 - Always or almost always
   - 2 - Often
   - 3 - Seldom
   - 4 - Never

11. I know that God forgives me.
   - 1 - Always or almost always
   - 2 - Often
   - 3 - Seldom
   - 4 - Never

Private Religious Practices

12. How often do you pray privately in places other than at church or synagogue?
   - 1 - More than once a day
   - 2 - Once a day
   - 3 - A few times a week
   - 4 - Once a week
   - 5 - A few times a month
   - 6 - Once a month
   - 7 - Less than once a month
   - 8 - Never

13. Within your religious or spiritual tradition, how often do you meditate?
   - 1 - More than once a day
   - 2 - Once a day
   - 3 - A few times a week
   - 4 - Once a week
   - 5 - A few times a month
   - 6 - Once a month
   - 7 - Less than once a month
   - 8 - Never

14. How often do you watch or listen to religious programs on TV or radio?
   - 1 - More than once a day
   - 2 - Once a day
   - 3 - A few times a week
   - 4 - Once a week
   - 5 - A few times a month
   - 6 - Once a month
   - 7 - Less than once a month
   - 8 - Never

15. How often do you read the Bible or other religious literature?
   - 1 - More than once a day
   - 2 - Once a day
   - 3 - A few times a week
   - 4 - Once a week
   - 5 - A few times a month
   - 6 - Once a month
   - 7 - Less than once a month
   - 8 - Never

16. How often are prayers or grace said before or after meals in your home?
   - 1 - At all meals
   - 2 - Once a day
   - 3 - At least once a week
   - 4 - Only on special occasions
   - 5 - Never

Religious and Spiritual Coping

Think about how you try to understand and deal with major problems in your life. To what extent is each of the following involved in the way you cope?

17. I think about how my life is part of a larger spiritual force.
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all

18. I work together with God as partners.
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all

19. I look to God for strength, support, and guidance.
    1 - A great deal
    2 - Quite a bit
    3 - Somewhat
    4 - Not at all

20. I feel God is punishing me for my sins or lack of spirituality.
    1 - A great deal
    2 - Quite a bit
    3 - Somewhat
    4 - Not at all

21. I wonder whether God has abandoned me.
    1 - A great deal
    2 - Quite a bit
    3 - Somewhat
    4 - Not at all

22. I try to make sense of the situation and decide what to do without relying on God.
    1 - A great deal
    2 - Quite a bit
    3 - Somewhat
    4 - Not at all

23. To what extent is your religion involved in understanding or dealing with stressful situations in any way?
    1 - Very involved
    2 - Somewhat involved
    3 - Not very involved
    4 - Not involved at all

Religious Support

These questions are designed to find out how much help the people in your congregation would provide if you need it in the future.

24. If you were ill, how much would the people in your congregation help you out?
    1 - A great deal
    2 - Some
    3 - A little
    4 - None

25. If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation be willing to give you?
    1 - A great deal
    2 - Some
    3 - A little
    4 - None

Sometimes the contact we have with others is not always pleasant.

26. How often do the people in your congregation make too many demands on you?
    1 - Very often
    2 - Fairly often
    3 - Once in a while
    4 - Never

27. How often are the people in your congregation critical of you and the things you do?
    1 - Very often
    2 - Fairly often
    3 - Once in a while
    4 - Never

Religious/Spiritual History

28. Did you ever have a religious or spiritual experience that changed your life?
    No
    Yes

IF YES: How old were you when this experience occurred?

29. Have you ever had a significant gain in your faith?
    No
    Yes

IF YES: How old were you when this occurred?

30. Have you ever had a significant loss in your faith?
    No
    Yes

IF YES: How old were you when this occurred?

Commitment

31. I try hard to carry my religious beliefs over into all my other dealings in life.
    1 - Strongly agree
    2 - Agree
    3 - Disagree
    4 - Strongly disagree

32. During the last year about how much was the average monthly contribution of your household to your congregation or to religious causes?

    $_____ OR $_____
    Contribution per year / Contribution per month

33. In an average week, how many hours do you spend in activities on behalf of your church or activities that you do for religious or spiritual reasons?

    _____

Organizational Religiousness

34. How often do you go to religious services?
    1 - More than once a week
    2 - Every week or more often
    3 - Once or twice a month
    4 - Every month or so
    5 - Once or twice a year
    6 - Never

35. Besides religious services, how often do you take part in other activities at a place of worship?
    1 - More than once a week
    2 - Every week or more often
    3 - Once or twice a month
    4 - Every month or so
    5 - Once or twice a year
    6 - Never

Religious Preference

36. What is your current religious preference?

    _____

IF PROTESTANT ASK:
Which specific denomination is that?

_____

(List of religious preference categories attached for advisory purposes. See Religious Preference section.)

Overall Self-Ranking

37. To what extent do you consider yourself a religious person?
    1 - Very religious
    2 - Moderately religious
    3 - Slightly religious
    4 - Not religious at all

38. To what extent do you consider yourself a spiritual person?
    1 - Very spiritual
    2 - Moderately spiritual
    3 - Slightly spiritual
    4 - Not spiritual at all

Appendix-Meaning

The working group did not feel it was appropriate at this time to include any "religious meaning" items in this measure, as no final decisions have been made regarding this domain. The following items are being considered for a Short Form.

1. The events in my life unfold according to a divine or greater plan.
   1 - Strongly agree
   2 - Agree
   3 - Disagree
   4 - Strongly disagree

2. I have a sense of mission or calling in my own life.
   1 - Strongly agree
   2 - Agree
   3 - Disagree
   4 - Strongly disagree

Appendix O: Beck Depression Inventory II

Roche

V 0477

Beck Depression Inventory

CRTN: _____ CRF number: _____

Page 14 patient inits: _____

Baseline

BDI-II

Date:

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

Continued on Back

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Roche

V 0477

Beck Depression Inventory

CRTN: _____ CRF number: _____

Page 15 patient inits: _____

Baseline

11. Agitation

0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.

1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.
2b I sleep a lot less than usual.

3a I sleep most of the day.
3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.
2b My appetite is much greater than usual.

3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

3 4 5 6 7 8 9 10 11 12 A B C D E

NR15645

Appendix P: Beck Anxiety Inventory

Beck Anxiety Inventory

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not At All	Mildly but it didn't bother me much.	Moderately - it wasn't pleasant at times	Severely – it bothered me a lot
Numbness or tingling	0	1	2	3
Feeling hot	0	1	2	3
Wobbliness in legs	0	1	2	3
Unable to relax	0	1	2	3
Fear of worst happening	0	1	2	3
Dizzy or lightheaded	0	1	2	3
Heart pounding/racing	0	1	2	3
Unsteady	0	1	2	3
Terrified or afraid	0	1	2	3
Nervous	0	1	2	3
Feeling of choking	0	1	2	3
Hands trembling	0	1	2	3
Shaky / unsteady	0	1	2	3
Fear of losing control	0	1	2	3
Difficulty in breathing	0	1	2	3
Fear of dying	0	1	2	3
Scared	0	1	2	3
Indigestion	0	1	2	3
Faint / lightheaded	0	1	2	3
Face flushed	0	1	2	3
Hot/cold sweats	0	1	2	3

Appendix Q: Counseling Center Resource List

Resources for Dealing with Depression & Anxiety

Hotline:
National Suicide Prevention Lifeline
1-800-273-TALK (8255)
suicidepreventionlifeline.org

Online:
National Alliance on Mental Illness
www.nami.org

National Institute of Mental Health
www.nimh.nih.gov

On-Campus:
Center for Counseling and Well-Being
Nigh University Center, Suite 402
(405) 974-2215
Walk-in hours: 9am - 1pm Monday through Thursday
Individual counseling and student support groups available

Off-Campus:
CommunityWorks LLC
122 East Eufaula Street
Norman, OK 73069
(405) 447-4499

623 N Broadway Street
Moore, OK 73160
(405) 378-2497
www.cworksok.com

Edmond Family Counseling Inc
1251 N Broadway
Edmond, OK 73034
(405) 341-3554
www.edmondfamilycounseling.org

Family Development/Intervention Services
7301 N. Broadway Ext., suite 101
Oklahoma city, OK 73116

(405) 767-1126
http://www.fdisok.com/
New Day Recovery, Youth and Family Services, Inc
4420 N Lincoln Blvd
Oklahoma City, OK 73105
(405) 525-0452

North Care
2617 General Pershing Blvd
Oklahoma City, OK 73107
(405) 858-1700
www.northcare.com

Open Options Inc
2401 W I-44 Service Rd, Suite 103
Oklahoma City, OK 73112
(405) 557-1655

Red Rock Behavioral Health Services
4400 N Lincoln Blvd
Oklahoma City, OK 73105
(405)424-7711
Toll Free 1-800-999-8055
www.red-rock.com

Sunbeam Family Services
1100 NW 14th St
Oklahoma City, OK 73106
(405) 528-7721
sunbeamfamilyservices.org

Turning Point Counseling
8518 S Pennsylvania
Oklahoma City, OK 73159
(405) 227-3757
www.turningpointokc.com

Veterans Affairs Medical Center
921 NE 13th Street
Oklahoma City, OK 73104
(405) 456-5183
www.oklahoma.va.gov/services/Mental_Health_and_Psychology_Services.asp