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by

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Abstract

The majority of Americans report religious affiliation and participate in religious practices. Several studies have sought to analyze the protective factors of religiosity, especially as it relates to mental and physical health issues. However, little research has been conducted which explores the relationship between religiosity/spirituality (R/S), mental health, and its treatment status.

This study sought to determine whether participants' mental health problems (anxiety and depression) and treatment status (treatment versus no treatment) were related to their religiosity/spirituality and if severity of pathology and treatment engagement significantly affected R/S. Results suggest subjects can be aggregated into two meaningful groups: one that endorsed higher symptoms of anxiety and depression, higher rates of treatment, and lower religiosity/spirituality scores and one with fewer symptoms of anxiety and depression, less engagement with treatment, and higher religiosity/spirituality scores. Although subsequent analysis indicated that severity of depression, depression treatment, and religiosity/spirituality

were key variables, neither treatment nor symptom severity were significantly related to total religiosity/spirituality scores.

Keywords: Anxiety, anxiety diagnosis, anxiety treatment, depression, depression diagnosis, depression treatment, religiosity, religiousness, spirituality, undergraduates, Christian students, Christian university.

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Chapter 1

Introduction

According to recent polls, approximately 80% of Americans identified with a particular religious affiliation (with the majority identifying with Christian denominations), and 72% indicated that religion was important, with 51% reporting religion was "very important" (Gallup, 2016; Gallup, 2018). Moreover, of individuals who reported high levels of religiosity, 88% stated they pray every day, 70% read the Bible or other religious material regularly, and 60% attended religious services at least once a week (Mitchell, 2018).

Many studies have analyzed how personal religiosity and spirituality impact individuals' mental health, with most noting positive effects. Among these, Koenig et al. (2012) indicated "greater overall well-being among subjects who were religious" (Crawford O'Brien, 2013 p. 550) and concluded that religion promoted behaviors which fostered self-control and self-regulation and thereby encouraged mental well-being. Similarly, in her review of research which detailed the beneficial impact of religiosity and spirituality, Salgado (2014, pp. 155-156) concluded that religiosity "provides a greater subjective psychological well-being," spirituality "is associated with better quality of life [and] healthier lifestyles," and both "contribute to better … psychological health, to prevention, speed recovery" and "reduce depression and anxiety." Shattuck and Muehlenbein (2018) also affirmed support for anti-depressive and anxiolytic effects of religiosity and spirituality.

However, Park and Slatterly (2013, p. 541), suggested this research suffered from "severe limitations" which included the vast majority of studies being correlational, cross-sectional, and "contaminated by confounding variables." Further, little research had been conducted on moderating variables (Park & Slatterly, 2013), including the relationship of mental health treatment upon individuals' faith. Additionally, because there is a dearth of research that analyzes the impact of mental health on religiosity and spirituality, the purpose of this study is to explore whether participants' mental health problems (anxiety and depression) and treatment status (treatment versus no treatment) are related to their religiosity/spirituality.

Religiosity and Spirituality

Religiosity and spirituality are considered different constructs in psychological literature (Cohen, et al., 2012; Harris, Howell, & Spurgeon, 2018). Religiosity contains extrinsic aspects of beliefs and practices which are often connected to an organized religious institution. For example, religious practices often include: attendance of religious services, corporate prayer, and corporate study of religious texts (Cohen et al., 2012; Ellison et al., 1989; Harris et al., 2018; Holdcroft, 2006).

Spirituality, though linked to religiosity, focuses more on the personal pursuit for purpose, meaning making, and degree of connectedness to others and the transcendent (Del Rio & White, 2012; Harris et al., 2018; Plante & Sherman, 2001). Unlike religiosity, spirituality emphasizes the personal experiences of individuals with the divine and includes practices such as individual prayer and personal study of religious texts (Harris et al., 2018). Thus, for the sake of this study, the term *religiosity/spirituality* (R/S) will be used as it best encompasses the fact that both religious and spiritual aspects were included in the questionnaire material provided to participants.

Anxiety and Depression

Approximately 33.7% of Americans reported some kind of anxiety disorder in their lifetime and 21.3% reported a diagnosis within the last 12-month period (Kessler et al., 2012). In addition, 16.1% reported some form of depressive disorder within their lifetime and 8.1% in a given two-week period (National Center, 2018). Among college students, 12-month prevalence rates of anxiety and major depressive disorder reached approximately 16.7% and 18.5% respectively according to the World Health Organization's (WHO) World Mental Health International College Student project (Auerbach et al., 2018). Further, clinicians in university settings rated anxiety and depression as the top concerns for students who received mental health treatment, accounting for 23.2% and 19.2% of cases (Center for Collegiate Mental Health, 2018).

Psychological Treatment and R/S

Few studies have analyzed the relationship between psychological treatment and R/S, and most included some kind of spiritually integrated treatment. Among these, Garzon et al., (2001) found statistically significant improvements in spirituality, anxiety symptoms, and self-esteem after subjects completed an intensive, weeklong Christian healing workshop. Toh and Tan (1997) noted significant improvement in mental health symptoms and spiritual well-being among participants receiving ten counseling sessions from church-based lay counselors compared to participants not receiving intervention.

Of the studies that did not expressly include spiritually integrated interventions, Bufford et al. (1995, p. 11), noted "successful psychotherapy may have spiritual or religious benefits" to both highly religious and casually religious clients, and Mayers et al. (2007) found a strengthening effect of patient faith after receiving secular psychological therapeutic services. Despite these results, Mayers et al. (2007) noted their subjects were initially fearful of receiving

secular therapeutic services as they thought it would weaken their faith. Such perception may have contributed to apprehension with receiving non-spiritually integrated treatment and motivated religious individuals to seek faith-based services instead of psychological services (Hoffman, 2018; Mayers et al., 2007; Mitchell & Baker, 2000).

Purpose of this Study

Given the prevalence of anxiety and depression and the scarcity of studies examining the relationship of anxiety and depressive symptoms *and* mental health treatment upon individual religiosity/spirituality, a two-pronged approach was used to explore whether participants' mental health problems (anxiety and depression) and treatment status (treatment versus no treatment) were related to their religiosity/spirituality. First, a cluster analysis was used to see if participants could be aggregated based on the relationship of their R/S, mental health, and treatment status. Then, a series of ANOVAs were used to see if there were differences among participants based on the severity of their symptoms and whether they had engaged in treatment.

In light of previous research noting positive effects of R/S on mental health including its anti-depressive and anxiolytic effects, the potential apprehension of religious individuals engaging in psychological treatment, and the positive effects of therapy on individual faith, the following hypotheses are offered: (a) Higher R/S scores will cluster with lower rates of anxiety and depression symptoms and treatment engagement. (b) Severity of pathology and degree of treatment engagement will significantly predict R/S.

Chapter 2

Methods

Participants

A private faith-based university in the Pacific Northwest administered the 2018 American College Health Association's (ACHA) National College Health Assessment II (ACHA-NCHA II) with supplemental questions related to individual R/S. Complete data relevant to this study was received from 1,093 students, with 1,085 participants included in the cluster analysis.

Demographics

The sample taken used undergraduate students from the ages of 18-25, with a mean age of 19 (*SD* 1.08). Approximately 60.8% were female and 39.2% male. 73.4% identified as White, 1.5% Black, 4.8% Hispanic or Latino/a, 5.3% Asian or Pacific Islander, 0.9% American Indian, Alaskan Native, or Native Hawaiian, 2.3% Bi-racial or Multiracial, and 1.1% Other. Approximately 10.7% of respondents marked more than one option.

The original sample was then reduced to include only those who endorsed being diagnosed and/or treated for anxiety or depression. This yielded two different samples with totals of 119 for the anxiety scale (AS) and treatment status (ATS) sample and 123 for the depression scale (DS) and treatment status (DTS) sample. These samples were used for the 2 x 2 ANOVA analyses (demographic data for these samples is listed in Table 1).

Table 1

Demographic Data for Anxiety and Depression Samples Used in 2 x 2 ANOVA

Factor	Anxiety Sample (N = 119)	Depression Sample (N = 123)
Age		
Mean (SD)	20.29 (5.38)	19.84 (2.93)
Gender		
Male (%)	24 (20.2)	28 (22.8)
Female (%)	95 (79.8)	95 (77.2)
Race		
White (%)	89 (74.8)	90 (73.2)
Black (%)	4 (3.4)	2 (1.6)
Latino/a (%)	5 (4.2)	6 (4.9)
Asian (%)	1 (0.8)	4 (3.3)
American Indian, Alaskan Native, or Native Hawaiian (%)	0 (0.0)	1 (0.8)
Biracial or Multiracial (%)	17 (14.3)	12 (9.8)
Other (%)	3 (2.5)	8 (6.5)

Instrument

American College Health Association-National College Health Assessment II

The American College Health Association – National College Health Assessment (ACHA-NCHA) is a "nationally recognized research survey that … assist[s] … in collecting precise data about … students' health habits, behaviors, and perceptions" (Advanced Solutions, 2019). The survey is currently in its third iteration. The original assessment was first introduced in the spring of 2000 and has been used by over 500 institutions since its implementation (Hoffman, 2018). The second edition (2008-2019) was used for this study and was administered both in paper and web formats (the web format was used in this study).

Reliability and validity analyses were conducted between 2007-2010 for the ACHA-NCHA II. From 2007-2008, two pilot studies were used to compare the updated ACHA-NCHA II questionnaire with the original ACHA-NCHA questionnaire. The comparison noted some differences between the questionnaires but the magnitude of effect size was not large. Further,

reliability and validity analyses conducted on the 2009 and 2010 ACHA-NCHA II administrations revealed "strong consistency over the two survey periods," an overall appearance "that the ACHA-NCHA II is both reliable and valid" (Advanced Solutions, n.d., p. 54-55) with "[a]lphas for the perceptions, mental health, general health behaviors, sleep, and academic performance rang[ing] from .710 to .821, demonstrating good internal consistency" (Rahn, 2016, p. 80).

Items from the ACHA-NCHA II were used to select participants and to derive study measures. Measures included anxiety, depression, and religiosity. The way these scales were derived from the ACHA-NCHA II are presented in the Procedure.

Procedure

Archival data were selected from a pre-existing data set comprised of the responses from a 2018 administration of the NCHA II. Individuals who endorsed any kind of current alcohol and drug use (NCHA items 8, 10, 13, 14, 15, and 16) were excluded from this study so that those endorsing anxiety or depressive symptoms were doing so for non-alcohol and drug related reasons (substance exclusionary criteria did not include tobacco consumption). Further, individuals with incomplete data related to this study were not included (approximately 2.5%). Descriptive analyses, including participant gender, race, and age were completed after applying the noted exclusionary criteria.

Anxiety Scale

An anxiety scale (AS) was constructed using five items from the NCHA II: 30B *Have you ever felt overwhelmed by all you had to do?;* 30G *Have you ever felt overwhelming anxiety?;* 37 *Within the last 12 months, how would you rate your overall level of stress you have experienced?;* 45A3 *Within the last 12 months, have any of the following affected your academic*

performance? (Please select the most serious outcome for each item below): Anxiety. The AS had a range of 0-13; a score of "0" meant *little problem with anxiety* and a score of "13" indicated *the worst anxiety symptoms reported*. Construction of the AS is outlined in the Appendix A.

Anxiety Treatment Status

Item 31A2 *Within the last 12 months, have you been diagnosed or treated by a professional for any of the following: Anxiety?* was used to determine the anxiety treatment status (ATS) and is outlined in Appendix B.

Depression Scale

A depression scale (DS) was constructed using eight items from the NCHA II: 30A *Have you ever felt things were hopeless?;* 30C *Have you ever felt exhausted (not from physical activity)?*; 30E *Have you ever felt very sad?;* 30F *Have you ever felt so depressed that it was difficult to function?;* 30J *Have you ever seriously considered suicide?"; 30K "Have you ever attempted suicide?*; and 45B4 *Within the last 12 months, has depression affected your academic performance?* The DS had a range of 0-22; a score of "0" meant *little problem with depression* and a score of "22" indicated *the worst depression symptoms reported*. Construction of the DS is outlined in Appendix C.

Depression Treatment Status

Item 31A6 *Within the past 12 months, have you been diagnosed or treated by a professional for depression?* was used to determine the depression treatment status (DTS) and is outlined in Appendix D.

Religiosity/Spirituality Scale

The NCHA II did not include questions which assessed the religiosity or spirituality of students. However, the university added four items to the 2018 administration of the NCHA II to assess students' religiosity and spirituality. The four items included: (a) *Check the box that most nearly expresses your level of Christian commitment*; (b) *How frequently do you spend time alone in personal Bible study or prayer (not related to class or chapel)?*; (c) *I strive to change my behaviors, thoughts, attitudes, and desires when I become aware they are contrary to biblical principles*; and, (d) *On average, how frequently do you attend local church worship services each month?* The R/S had a range of 0-15; a score of "0" meant *low religiosity* and a score of "15" indicated *high religiosity/spirituality*. Construction of the R/S Scale is outlined in Appendix E.

Validation Study

Given that the AS, DS, and R/S Scale scores were created measures for this study, each was tested for validity. Alpha coefficients were computed on each measure to ensure internal consistency and Pearson correlations were computed to compare the scales to pre-existing measures. More specifically, the AS was compared with the General Anxiety Disorder 7-Item Scale (GAD-7) (Löwe et al., 2008), the DS was compared to the Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001), and the R/S Scale was compared with Gorsuch's Single Item Scale for Measuring Religious Values (Gorsuch & McFarland, 1972) as these are similarly brief measures and have demonstrated validity.

A random sample of 180 participants was selected from the same cohort of undergraduate students who completed the 2018 administration of the NCHA II and supplemental questions used in the R/S Scale. These participants included undergraduate juniors and seniors during the

Fall Semester of 2019 who were freshmen and sophomores during the 2018 administration of the NCHA II. Results from this validation study demonstrated the AS, DS, and R/S Scale have strong positive correlations to the GAD-7 ($r = 0.68$), PHQ-9 ($r = 0.77$), and Gorsuch Single Item Scale for Measuring Religious Values ($r = 0.80$), thus indicating these scales likely measured what they were intended to measure.

Statistical Analyses

Two different analyses were used to see if anxiety and depression symptoms and treatment status are related to college student religiosity/spirituality. First, a K-means cluster analysis was used to explore whether participants could be aggregated into meaningful groups/clusters who differed in the ways their R/S was related to their AS, DS, and treatment status (ATS and DTS) using their computed z-scores. Subsequently, a series of 2 x 2 analysis of variance (ANOVA) were used to determine whether severity of anxiety and depression (low or high) and treatment status (treatment versus non-treatment) predict R/S. A median split was used to determine levels of anxiety and depression (low and high groups), and midpoint scores were removed (scores of 8 and 9 for anxiety and 9-11 for depression). This equated to the removal of 0.5 standard deviation from both anxiety and depression samples.

Chapter 3

Results

Cluster Analysis

A K-means cluster analysis was used to explore whether participants could be aggregated into meaningful groups/clusters that differed in the ways their R/S was related to their mental health and treatment status. Clustering identifies participants who are similar in terms of their scores on the study variables in a manner similar to the way in which factor analysis explores items that are closely related to each other. Variables entered into the analysis included z-scores for the AS, DS, R/S Scale, ATS and DTS, and also included age, race, and sex.

An initial cluster analysis was achieved in two iterations, but proved unsatisfactory as it yielded two clusters based solely on age; one cluster contained two participants who averaged 58.0 years in age, while those in the second cluster averaged 19.5 years in age. For the next analysis we selected cases aged 25 and under; the result was the two older participants were omitted in the subsequent cluster analysis. The second cluster analysis yielded two clusters in nine iterations. A total of 1,085 participants were included in two clusters; 941 for Cluster 1 and 144 for Cluster 2. Variables entered into the analysis included z-scores for the AS, ATS, DS, DTS, and R/S Scale.

Descriptive data of the two clusters indicated Cluster 1 was more likely to report symptoms of anxiety and depression and treatment engagement for both anxiety and depression, and lower R/S than Cluster 2. In addition, an ANOVA was conducted to determine key variables.

Results indicated the DS, DTS, and R/S Scale were key variables ($F(1,1083) = 6.224$, $p = .013$, $F(1,1083) = 6.224$, $p = .013$, and $F(1,1083) = 2593.968$, $p < .001$). See Table 2.

Table 2

Cluster Analysis with Key Variables ANOVA

Measure	Cluster 1		Cluster 2		ANOVA			
	M	*SD*	*M*	*SD*	*df*	*F*	*Sig.*	*r*
AS	0.05	1.05	-0.04	0.96	1	2.11	0.15	0.05
ATS	0.06	1.06	-0.03	0.96	1	2.11	0.15	0.05
DS	0.09	1.10	-0.06	0.92	1	6.22	0.01	0.08
DTS	0.01	1.12	-0.06	0.93	1	6.22	0.01	0.03
R/S	-1.13	0.61	0.63	0.50	1	2593.97	< .001	-0.84

2 x 2 ANOVA

A subsequent analysis was conducted to determine whether severity of anxiety and depression (low or high) and treatment status (treatment versus non-treatment) affect R/S engagement.

Descriptive data for anxiety groups indicated there were 55 individuals in the low AS group and 64 in the high AS group. Of these, only 35 individuals reported no treatment while 84 reported receiving treatment. Overall, total R/S scores were higher for individuals with low AS and non-treatment, and high AS with treatment groups. However, level of AS did not have a significant effect on R/S scores ($F(1,118) = 3.192$, $p = 0.080$), ATS did not have a significant effect on R/S scores ($F(1,118) = 0.214$, $p = 0.644$), and there was no interaction effect of level of AS and ATS on R/S scores ($F(1,118) = 0.948$, $p = 0.332$). See Tables 3 and 4.

Table 3

Descriptive Statistics for R/S (by Anxiety Treatment Status and Anxiety Levels)

Treatment Status	Anxiety Level	*Mean*	*SD*	*N*
No Treatment	AS Low	9.80	2.24	15
	AS High	7.70	4.12	20
Treatment	AS Low	8.70	3.99	40
	AS High	8.09	3.84	44

Table 4

ANOVA Summary for R/S (by Anxiety Treatment Status and Anxiety Levels)

Source	*df*	*MS*	*F*	*Sig.*
AS: Low/High	1	44.64	3.192	0.080
ATS	1	3.06	0.214	0.644
AS: Low/High x ATS	1	13.52	0.948	0.332

Descriptive data for depression groups indicated there were 59 individuals in the low DS group and 64 in the high DS group. Of these, only 37 individuals reported no treatment while 86 reported receiving treatment. Overall, total R/S scores were higher for individuals with low DS scores and non-treatment groups. However, level of DS did not have a significant effect on R/S scores ($F(1,122) = 0.046$, $p = 0.831$), DTS did not have a significant effect on R/S scores ($F(1,122) = 0.341$, $p = 0.560$), and there was no interaction effect of level of DS scores and DTS on R/S scores ($F(1,122) = 1.044$, $p = 0.309$). See Tables 5 and 6.

Table 5

Descriptive Statistics for R/S (by Depression Treatment Status and Depression Levels)

Treatment Status	Depression Level	*Mean*	*SD*	*N*
No Treatment	DS Low	7.40	3.334	15
	DS High	8.05	4.157	22
Treatment	DS Low	7.75	3.822	44
	DS High	6.76	4.333	42

Table 6

ANOVA Summary for R/S (by Depression Treatment Status and Depression Levels)

Source	*df*	*MS*	*F*	*Sig.*
DS: Low/High	1	0.740	0.046	0.831
DTS	1	5.493	0.341	0.560
DS: Low/High x ATS	1	16.819	1.044	0.309

Chapter 4

Discussion

The focus of this study was to explore whether participants' anxiety, depression, and treatment status was related to their R/S. Two primary hypotheses were offered to investigate the variables mentioned above. The first hypothesis proposed higher R/S scores would be related to lower rates of anxiety and depression symptoms and treatment engagement. Two meaningful groups emerged from this analysis: one endorsed higher symptoms of anxiety and depression, higher rates of treatment, and lower R/S scores, while the other reported fewer symptoms of anxiety and depression, less engagement with treatment, and higher R/S scores. Therefore, the first hypothesis was supported.

These results align with previous research that also analyzed the relationship of religiosity/spirituality with mental health disorders. Findings from multiple meta-analyses have demonstrated a relationship between religiosity/spirituality and greater health maintenance, quicker recovery from psychological distress, and reduction of anxiety and depression (Koenig et al., 2012; Salgado, 2014; Shattuck & Muehlenbein, 2018). This suggests individuals with higher religiosity/spirituality may be less symptomatic and/or have symptoms abate faster. While research has not offered definitive reasons why religiosity/spirituality is associated with lower rates of anxiety and depression, some possible factors include the benefits of the social connections frequently associated with religious service attendance, overall sense of purpose and meaning, optimism, and hopefulness (Glover-Graf et al., 2007; Koenig, 2018).

The current study also found significant differences in the depression scale scores and treatment status between the two groups using a median split and omitting participants scoring within the middle half standard deviation. This corroborates previous literature that found depression was significantly different for highly religious and non-religious individuals (Jansen et al., 2010). A potential reason for this may be that depressed individuals tend to engage in religious and spiritual activities less consistently, as their depressive symptoms are likely to inhibit engaging in personal and corporate religious and spiritual activities (Koenig, 2018; Maselko et al., 2012). Diminished participation in religious and spiritual practices may also reduce the protective benefits of religiosity/spirituality, therefore associating greater depression scores and lower religiosity/spirituality (Hintikka, 1998).

Additionally, individuals who report lower depression scores and higher religiosity/spirituality may not report as much engagement in depression treatment because their level of depression may not warrant psychological intervention. Further, higher religiosity/spirituality individuals may seek support from religiously-affiliated professionals, as their religiosity/spirituality is a primary way of coping (Kane & Jacobs, 2010). And finally, high religiosity/spirituality individuals may conceptualize their depression as a religious or spiritual matter, and as such, their religious and spiritual engagement provides enough support to help reduce their level of depression (Hintikka, 1998; Hoffman, 2018; Kane & Jacobs, 2010).

On the other hand, no significant differences were detected between groups for anxiety scale scores or anxiety treatment status. One possible explanation for these findings may be that college students routinely endorse high levels of anxiety (American College Health Association, 2018; Auerbach et al., 2018) and therefore the participants may not have differentiated between clinical levels of anxiety and common academic anxiety presentations when responding to the

ACHA-NCHA II questions. This may have resulted in a large percentage of individuals endorsing increased anxiety symptoms than what is typically expected from a non-clinical population, causing little to no difference between groups on the anxiety scale scores. Similarly, if both groups endorsed high scores for anxiety it is logical the anxiety treatment status of both clusters would be similar.

Overall, the results from this analysis further support the idea that R/S is related to positive mental wellbeing. Such information may prompt clinicians to consider inquiring about the client's R/S when providing psychological services and encouraging client participation in their faith when appropriate, as it affirms potentially positive aspects of client identity and can lead to strengthening client affiliations (Mayers et al., 2007; Jung & Wender, 1933). Furthermore, if a client believes in a higher power then engaging in behaviors and practices that are believed increase communion with or align one with the divine is likely to have positive mental health outcomes because the client is acting in accordance with their values.

The second hypothesis proposed severity of pathology and treatment engagement would significantly predict R/S. This study failed to find significant R/S differences for either treatment status (treatment versus non-treatment) or symptom severity (high versus low). This seems to suggest pathology and treatment did not affect R/S.

These results diverge from prior research analyzing treatment effects on R/S (Bufford et al., 1995; Mayers et al., 2007) in that treatment seemed to strengthen religiosity/spirituality in those studies. A possible reason no differences were observed between symptom level, treatment status, and religiosity/spirituality may have to do with the dichotomizing of subjects into low and high symptom groups. Such grouping can lower statistical power and make it difficult to determine whether those groupings are actually different (Shreve-Neiger & Edelstein, 2004).

Though this study attempted to create further separation between the low and high symptom groups by way of a median split (by removing 0.5 standard deviation from the median of the sample) the results suggest there still may have been insufficient variability between the high and low symptom levels. Also, the fact that the sample only used individuals who had been diagnosed with anxiety or depression may have greatly restricted the range of anxiety and depression scores.

Limitations

The sample in this study was taken from one faith-based university that represented a predominantly Christian, white, college-aged population. Therefore, generalization of results should be made prudently. Additionally, only individuals who had been diagnosed or treated for anxiety or depression were included in the 2 x 2 ANOVAs. This led to significantly smaller samples than what was used in the K-means cluster analysis. If the samples had been larger, it is possible that significant differences in religiosity/spirituality scores may have been detected. Last, this study only compared treatment versus non-treatment groups and did not attempt to account for different types of treatment.

Future Research

Given the prevalence of R/S in the United States and the positive relationship religiosity/spirituality has with individual wellbeing, future psychological research should examine how mental health issues relate to patient R/S.

Future research may also consider including other faith-based and non-faith based academic institutions, as this study included participants from a single faith-based institution. Such comparison may yield findings not observed in this study.

Additionally, in this study, treatment engagement (treatment versus non-treatment) was included rather than parsing out type of treatment. Given that research on the relationship of psychological treatment and individual R/S is scarce, and few studies have analyzed how spiritually-focused treatment relates to R/S, future research could explore the relationship between type treatment and individual religiosity/spirituality, such as psychologically-focused treatment versus spiritually-integrated treatment.

Conclusion

This study sought to determine whether participants' mental health problems (anxiety and depression) and treatment status (treatment versus no treatment) were related to their R/S and if there were significant differences in R/S between low and high symptom groups. Results suggest subjects can be aggregated into two meaningful groups: one that endorses higher symptoms of anxiety and depression, higher rates of treatment, and lower R/S scores and one with fewer symptoms of anxiety and depression, less engagement with treatment, and higher R/S scores. Although subsequent analysis indicated that severity of depression, depression treatment, and R/S were key variables, neither treatment nor symptom severity were significantly related to total R/S scores.

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Appendix A

Anxiety Scale (AS)

The AS was constructed using the following items from the university's 2018 administration of the ACHA-NCHA II and scored accordingly:

Item(s)	Response Options	Score
30B. Have you ever felt overwhelmed by all you had to do? 30G. Have you ever felt overwhelming anxiety?	1. Never	0
	2. Not in the last 12 months	0
	3. In the last 2 weeks	3
	4. In the last 30 days	2
	5. In the last 12 months	1
37. Within the last 12 months, how would you rate the overall level of stress you have experienced?	1. No stress	0
	2. Less than average stress	0
	3. Average stress	1
	4. More than average stress	2
	5. Tremendous stress	3
45A3. Within the last 12 months, have any of the following affected your academic performance: Anxiety?	1. This did not happen to me, N/A	0
	2. Experienced, academics not affected	1
	3. Received lower grade exam	2
	4. Received lower grade course	3
	5. Received incomplete/dropped	4
	6. Significant disruption thesis	3

Recency of symptoms was considered to be a reflection of severity of symptoms. As such, items 30B and 30G were scored a "0" if symptoms were never present or not present within the last 12 months, "1" if symptoms were present in the last 12 months, "2" if symptoms were present in the last 30 days, and "3" if symptoms were present in the last two weeks. Items 37 and 45A3 were scored with the presumption that overall level of and disruption indicated a greater level of anxiety. Thus, the AS has a range of 0-13, with a score of "0" meaning little problem with anxiety and a score of "13" indicating the worst anxiety symptoms reported. The mean and standard deviation of the AS for the entire sample was 5.164 and 3.149. Only those diagnosed with anxiety were included in the 2x2 ANOVA. For that analysis, a median split (plus or minus 0.5 *SD*) was used to determine levels of anxiety (i.e., low and high), and midpoint scores were removed (i.e., scores of 8 and 9).

Appendix B

Anxiety Treatment Status (ATS)

The ATS was constructed using the following item from the university's 2018 administration of the ACHA-NCHA II and scored accordingly:

31A2. Within the last 12 months, have you been diagnosed or treated by a professional for any of the following: Anxiety?	1. No	0
	2. Yes, diagnosed not treated	1
	3. Yes, treated with medication	2
	4. Yes, treated with psychotherapy	2
	5. Yes, treated with medication and psychotherapy	2
	6. Yes, other treatment	2

Responses were scored to distinguish between participants' treatment status. Thus, the ATS has a range of 0-2, with a score of "0" meaning no diagnosis or treatment of anxiety, "1" diagnosis but no treatment, and "2" diagnosed and treated. Differing levels of treatment were scored equally as this study focuses on diagnosis and non-treatment versus diagnosis and treatment. ATS scores of "0" were not included in the 2 x 2 ANOVA.

Appendix C

Depression Scale (DS)

The DS was constructed using the following items from the university's 2018 administration of the ACHA-NCHA II:

Item(s)	Response	Score
30A. Have you ever felt things were hopeless? 30C. Have you ever felt exhausted (not from physical activity)? 30E. Have you ever felt very sad? 30F. Have you ever felt so depressed that it was difficult to function? 30J. Have you ever seriously considered suicide? 30K. Have you ever attempted suicide?	1. Never	0
	2. Not in the last 12 months	1
	3. In the last 2 weeks	3
	4. In the last 30 days	2
	5. In the last 12 months	1
45B4. Within the last 12 months, has depression affected your academic performance?	1. This did not happen to me, N/A	0
	2. Experienced, academics not affected	1
	3. Received lower grade exam	2
	4. Received lower grade course	3
	5. Received incomplete/dropped	4
	6. Significant disruption in thesis, dissertation, research, or practicum work	3

Recency of symptoms was considered to be a reflection of severity of symptoms. As such, items 30A, 30C, 30E, 30F, 30J, and 30K were scored a "0" if symptoms were never present or not present within the last 12 months, "1" if symptoms were present in the last 12 months, "2"

if symptoms were present in the last 30 days, and “3” if symptoms were present in the last two weeks. 45B4 was scored with the presumption that overall level of and disruption indicated a greater level of depression, with “0” indicating no disruption and “4” indicating the respondent had received an incomplete grade of dropped a class. In total, the DS has a range of 0-22 with a score of “0” meaning little problem with depression and a score of “22” indicating the worst depression symptoms reported. The mean and standard deviation of the DS for the entire sample was 5.662 and 4.374. Only those diagnosed with depression were included in the 2x2 ANOVA. For that analysis, a median split (plus or minus 0.5 *SD*) was used to determine levels of depression (i.e., low and high), and midpoint scores were removed (i.e., scores of 9, 10, and 11).

Appendix D

Depression Treatment Status (DTS)

The DTS was constructed using the following item from the university's 2018 administration of the ACHA-NCHA II and scored accordingly:

31A6. Within the past 12 months, have you been diagnosed or treated by a professional for depression?	1. No	0
	2. Yes, diagnosed not treated	1
	3. Yes, treated with medication	2
	4. Yes, treated with psychotherapy	2
	5. Yes, treated with medication and psychotherapy	2
	6. Yes, other treatment	2

Responses were scored to distinguish between participants' treatment status. Thus, the DTS has a range of 0-2, with a score of "0" meaning no diagnosis or treatment of anxiety, "1" diagnosis but no treatment, and "2" diagnosed and treated. DTS scores of "0" were not included in the 2 x 2 ANOVA. Differing levels of treatment were scored equally as this study focuses on diagnosis and non-treatment versus diagnosis and treatment.

Appendix E

Religiosity/Spirituality Scale (R/S)

The R/S scale was constructed using the additional questions the university included in the 2018 administration of the ACHA-NCHA II:

Item(s)	Response	Score
5. Check the box that most nearly expresses your level of Christian commitment:	1. My relationship with Christ is a very important part of my life.	3
	2. My relationship with Christ is a somewhat important part of my life.	2
	3. My relationship with Christ is not a very important part of my life.	1
	4. I don't have a relationship with Christ.	0
6. How frequently do you spend time alone in personal Bible study or prayer (not related to class or chapel)?	1. Never	0
	2. Monthly	1
	3. Weekly	2
	4. Every other day	3
	5. Daily	4
	6. More than once per day	5
7. I strive to change my behaviors, thoughts, attitudes, and desires when I become aware they are contrary to biblical principles.	1. Strongly Agree	2
	2. Agree	1
	3. Disagree	0
	4. Strongly Disagree	0

9. On average, how frequently do you attend local church worship services each month? _____ times per month	1. “0”	0
	2. “1”	1
	3. “2”	2
	4. “3”	3
	5. “4”	4
	6. “5” or above	5

Item responses were scored with the presumption that greater levels of R/S would be reflected by higher reports of Christian commitment, personal and corporate religious practices, and a desire to orient one’s life in light of their religious understandings. Thus, the R/S Scale has a range of 0-15, with a score of “0” meaning low Christian R/S and a score of “15” indicating high Christian R/S. The mean, standard deviation, and mode of the R/S scale for the entire sample was 8.484, 3.779, and 10.

Appendix F

Curriculum Vitae

Matthew J. Ditty

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EDUCATION

Doctoral Candidate in Clinical Psychology (PsyD) Program **Expected 2021**
George Fox University Graduate School of Clinical Psychology (APA Accredited)
(Newberg, OR)

Master of Arts in Clinical Psychology **April 2018**
George Fox University Graduate School of Clinical Psychology (APA Accredited)
(Newberg, OR)

Bachelor of Science in Biblical Studies/Minor in Psychology **May 2011**
Multnomah University (Portland, OR)
Graduated Magna Cum Laude

SUPERVISED CLINICAL EXPERIENCE

- *Behavioral Health Crisis Consultation Team*
  (Newberg, OR) January 2018- June 2020

  - Conducted suicide and homicide risk evaluations and crisis management at Providence Newberg Medical Center and Willamette Valley Medical Center (McMinnville).
  - Consultations occurred in emergency departments, intensive care units, and medical/surgery units with a multidisciplinary team and include care coordination, including placement in psychiatric hospitalizations, respite, residential treatment, detoxification centers, homeless shelters, and community mental health centers.
  - Primary concerns included risk of harm to self or others and inability to care for self-related to significant mental illness.
  - Weekly group supervision highlighted complex systems and patient cases.

  Supervisors: Mary Peterson, PhD; Bill Buhrow, PsyD; Luann Foster PsyD

- *Friendsview Retirement Community*
  (Newberg, OR) August 2019- May 2020

- Participated in development of new practicum position.
- Established therapeutic services with residents and manage schedule.
- Offered culturally, spiritually, and developmentally sensitive therapy to individuals and couples aged 62 and older.
- Conducted cognitive/memory assessment of current and prospective residents, complete written reports, and discuss results with care team and/or relevant staff and resident(s).
- Consulted with multidisciplinary team including social work, nursing, direct care, and administrative staff to help ensure appropriate care of residents.
- Primary concerns included mild to moderate psychopathology, cognitive/memory decline, inability to care for self, and risk of harm to self/others.

Supervisors: Glena Andrews, PhD; Kathryn Saunders, MSW

- *George Fox University Health and Counseling Center*
  (Newberg, OR) August 2018- May 2019

- Provided culturally and spiritually relevant psychotherapy to undergraduate students and couples attending a private university. The population includes first generation, third culture, ethnic, religious, and sexual minority students with minor to moderate psychopathology.
- Worked alongside medical staff and support staff while managing deep caseload and maintaining timely documentation.
- Conducted risk assessment to clients endorsing suicidal ideation.
- Offered training on Collaborative Problem Solving to clinical staff.

Supervisors: Bill Buhrow, PsyD; Luann Foster, PsyD

- *Behavioral Health Center*
  (Newberg, OR) April 2017- July 2018

- Offered psychotherapy and assessment to underinsured and uninsured members of Yamhill County where the population ranges from children to geriatrics with minor to severe psychopathology.
- Provided psychoeducation and group counseling to couples and families.
- Conducted urgent need intakes and assess for suicidal ideation for clients referred from local hospitals.
- Managed own schedule, processed payment, and provided coverage for adding new clients to assessment and therapy waitlists.
- Presented clinical case vignettes to colleagues and supervisors to ensure relevant and ethical practices.

Supervisors: Joel Gregor, PsyD; Vanessa Hara, MA; Brent Fisk, MA

RELEVANT WORK EXPERIENCE

George Fox University

- *Teaching Assistant* August 26, 2019- December 12, 2019

  - Lead small group discussion focusing on enhancing clinical skills within the contextual lenses of major theoretical orientations.
  - Monitor pseudo-therapy sessions and provide commendations and recommendations.
  - Offer clinical vignettes and co-lead class discussions including emotive, ethical dilemmas, interpersonal issues, and/or legal considerations.
  - Students are advanced undergraduate psychology students in their junior or senior year and have a desire to pursue a career in counseling or clinical psychology.

  Faculty: Laura Geczy-Haskins, PsyD

- *Guest Lecturer* January 24, 2019

  - Detailed information related to the role of assessment in diagnosis and case conceptualization to undergraduate students enrolled in an abnormal psychology course.
  - Analyzed various behavioral observations, interview information, self-report measures, and intelligence and personality tests and highlighted interpretive findings.

  Faculty: Kristina Kays, PsyD

- *Consultant* August 31, 2018- April, 26, 2019

  - Worked alongside doctoral candidates to help assess the needs of a Yamhill Community Mental Health Family and Youth Programs and identified ways to improve representation and participation of natural supports in care team meetings and cost savings of the Wraparound program for Yamhill County.
  - Interacted with county, state, and national Wraparound agencies and collected relevant documentation and utilization assessment tools.
  - Provided feedback of findings and offered implementation considerations.

  Supervisor: Marie-Christine Goodworth, PhD

Kairos NW
(Grants Pass, OR) May 2011 to June 2016

- *Training and Certification Coordinator* *(Administration)* July 2015- June 2016
  - Worked with the Clinical Director, Quality Assurance Manager, Environment of Care Manager, and HR Director to assess the effectiveness of employee training, and help design and implement training programs.
  - Provided consultation to all eight agency locations to increase proficiency in the Collaborative Problem Solving approach by reviewing clinical documentation and discussing barriers of integrating CPS into Kairos' electronic medical record.
  - Designed an original method of embedding and tracking Collaborate Problem Solving conversations in Kairos' electronic medical record.
  - Led group of managers, therapists, and supervisors in the process of certifying Kairos as the first, and currently only, agency to be designated as a Massachusetts General Hospital- Think:Kids Associate Site.

- *Skills Coach Supervisor* *(Therapeutic Foster Care)* May 2013- July 2015

  - Provided direct skills training and coaching to clients and supervisees within skill areas including but not limited to: cognitive flexibility/adaptability, emotional regulation, problem solving, independent living/self-sufficiency, education, navigating the medical community, community living, and other areas as needed.
  - Equipped supervisees by providing support, education and training in daily interactions and formal supervision sessions.

- *Case Manager* *(Therapeutic Foster Care)* November 2011- May 2013

  - With clients' therapists, coordinated all aspects of youth treatment plans including individual and family counseling, rehabilitative services, referrals to additional mental health services, and vocational and occupational services plans while considering insight from foster and biological families, Department of Human Services case workers, probation officers, psychiatric medical providers, school staff, and other applicable community partners.
  - Helped create individualized client treatment plans, goals and objectives, and behavior support plans and documented performance and progress.
  - Analyzed significant incidents and crises to determine patterns/predict behavior and communicated this information to foster families and care team members in an effort to ensure the use of appropriate interventions.
  - Maintained timely, extensive documentation regarding all aspects of each client's case.

- *Skills Coach* *(Young Adult Residential Treatment Facility)* May 2011- November 2011

  - Actively supervised and provided skills development services to clients both in the therapeutic milieu and in the community.
  - Demonstrated effective verbal intervention skills in de-escalating young adults.

- Effectively assessed and managed crisis situations.

PUBLICATIONS AND/OR PRESENTATIONS

Rudneva, L., Sklyarov, O., **Ditty, M. J.**, Buhrow, W., (2018, April) *Intimate partner violence, perception of safety, and faith among female college students attending faith-based institutions*. Poster session presented at the Christian Association for Psychological Studies Annual Conference, Norfolk, VA.

CERTIFICATION

- Completed TIER II training in the Collaborative Problem Solving approach from Dr. J. Stuart Ablon- Director of Think:Kids (Massachusetts General Hospital) in 2012.

MEMBERSHIP

- American Psychological Association **November 2016- Present**

CLINICAL SUPERVISION

Graduate Department of Clinical Psychology at George Fox University

Clinical Team

Consultant: Kenneth Logan, PsyD **August 2018-May 2019**

Consultant: Paul Stolzfus, PsyD **August 2018- May 2019**

Consultant: Joel Gregor, PsyD **September 2017- April 2018**

Consultant: Marie-Christine Goodworth, PhD **September 2016- May 2017**

- Weekly meetings offering case presentations, therapeutic analyses from various clinical perspectives, and ethical discussions regarding client and systemic challenges.

CLINICAL TRAININGS

Intercultural Prerequisites for Effective Diversity Work **October 2019**
Cheryl Forster, PsyD

Promoting Forgiveness **September 2019**
Everett L. Worthington, Jr., PhD

Marital Counseling: Gottman Model **March 2019**

Douglas Marlow, PhD

Opportunities In Forensic Psychology February 2019
Alexander Millkey, PsyD; Diomaris E. Safi, PsyD

Old Pain in New Brains October 2018
Scott Pengelly, PhD

Spiritual Formation and the Life of a Psychologist: Looking Closer at Soul-Care September 2018
Lisa McMinn, PhD, Mark McMinn, PhD

Integration and Ekklesia March 2018
Mike Vogel, PsyD

History and Application of Interpersonal Psychotherapy February 2018
Carlos Taloyo, PhD

Telehealth November 2017
Jeff Sordahl, PsyD

Using Community Based Participatory Research (CBPR) to Promote Mental Health in American Indian/Alaska Native (AI/AN) Children, Youth and Families October 2017
Eleanor Gil-Kashiwabara, PsyD

Difficult Dialogue March 2017
Winston Seegobin, PsyD, Mary Peterson, PhD, ABPP, Mark McMinn, PhD, ABPP, and Glena Andrews, PhD

Domestic Violence: A Coordinated Community Response March 2017
Patricia Warford, PsyD, and Sgt. Todd Baltzell

Native Self Actualization: It's Assessment and Application in Therapy February 2017
Sydney Brown, PsyD

When Divorce Hits the Family: Helping Parents and Children Navigate November 2016
Wendy Bourg, PhD

Sacredness, Naming and Healing: Lanterns Along the Way October 2016
Brooke Kuhnhausen, PhD