Relationships of Religious Affiliation, Coping, and Support with Symptoms of Psychopathology in College Students

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Abstract

Background: Research has shown increases in mental health concerns in college students over the years that have worsened during the COVID-19 pandemic. Identifying factors that are protective in this context can aid in informing prevention and treatment efforts. Religiosity/religiousness has been shown to be generally beneficial regarding mental health, however, less is known about the mechanisms that account for that relationship. Some evidence indicates positive religious coping and religious support may be mechanisms. Little research has examined if religiousness is beneficial regarding mental health in college students during the pandemic, and if so, if positive religious coping and religious support are mechanisms. This study aimed to investigate the relationships of religiousness, positive religious coping, and religious support with symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) in college students during the COVID-19 pandemic. Specifically, the objectives of this study were to: 1) examine whether religious-affiliated college students have lower levels of symptoms of depression, anxiety, and/or PTSD compared to non-religiously affiliated students; and 2) if so, examine whether positive religious coping and religious support help account for the relationships observed between being religiously affiliated and lower symptoms. Method: This senior honors thesis project used pre-existing data from a cross-sectional online survey study that examined psychosocial and demographic risk and protective factors of PTSD during the pandemic (2020-21 academic school year) in a sample (N = 745) of undergraduate students from a large southeastern public university. The students were recruited using several methods: 1) Introductory Psychology courses, 2) a random sample of students, oversampled for male students and people of color, provided by the Survey Review and Oversight Committee, 3) emails to student organizations reflective of diversity requesting they share the study information with

their members, and 4) emails to advisors, faculty, and other staff requesting they share the study with students. Participants in Introductory Psychology courses were given research credit for participating. All other participants were entered into a gift card raffle held each semester. Psychological symptomology was assessed with measures of 1) generalized anxiety disorder symptoms (Generalized Anxiety Scale-7); 2) depressive symptoms (Patient Health Questionnaire – 8); and 3) PTSD symptoms (PTSD Checklist for DSM-5). Religious affiliation, coping, and support were assessed with a modified version of the Brief Multidimensional Measure of Religiousness/Spirituality and Brief Religious COPE. Results: The correlation analyses showed the significant relationship of religious affiliation with psychopathology symptoms. The results further demonstrated that religious support considerably mediated the relationship of religiosity and anxiety, depression, and PTSD, but positive religious coping only mediated the relationship of religiosity and PTSD. Discussion: Results can aid in improving the identification of at-risk college students and the development of effective coping and support strategies.

Keywords: *college students, depression, anxiety, post-traumatic stress disorder, religious coping, religious support, religious affiliation*

Introduction

Depression, anxiety, and post-traumatic stress disorder (PTSD) are mental health conditions that can affect an individual's well-being and ability to function in their daily life. Depression is a mental health condition characterized by persistent feelings of sadness, hopelessness, and a lack of interest in activities that were once enjoyed. Individuals with depression may also experience changes in their sleep and appetite, fatigue, and difficulty concentrating (Kroenke et al., 2009). Anxiety is a mental health condition characterized by persistent feelings of worry, fear, and nervousness. Individuals with anxiety may also experience physical symptoms such as a rapid heartbeat, sweating, and muscle tension (Spitzer et al., 2006). PTSD is a mental health condition that can develop after an individual experiences or witnesses a traumatic event, such as a natural disaster, combat, or sexual assault. Individuals with PTSD may experience intrusive thoughts, nightmares, and flashbacks related to the traumatic event, as well as feelings of avoidance and emotional numbing (Weathers et al., 2013).

In recent years, the rates of depression, anxiety, and PTSD among college students have been increasing, with some estimates suggesting that as many as one in four students are affected by the symptoms of these disorders (American College Health Association – National College Health Assessment, 2022). These disorders can have serious impacts on a student's academic performance, relationships, and overall well-being (Butt, 2014). The pandemic has only heightened these symptoms (Saleem et al., 2021), as students have faced additional stressors such as isolation, changes in academic routines, and increased financial pressures. Therefore, it is more important than ever to address the needs of college students and provide them with the support and resources they need to manage their mental health.

To help address college students' needs and develop supportive resources, protective factors that help them cope and reduce stress must be identified. Identifying and examining protective factors is important for several reasons, such as promoting resilience, targeting interventions, understanding individual differences, and improving overall mental health. Understanding the protective factors that help individuals cope with stress and adversity can help promote resilience and well-being, as resilience is suggested to be significantly positively associated with social support, coping, and fewer symptoms of PTSD (Burnett & Helm, 2013; Mesidor & Sly, 2018). By identifying specific protective factors, interventions can be targeted to the areas where they are most needed. Individuals and communities can work to strengthen their ability to handle challenges and maintain positive mental health. For example, if a particular community has low levels of social support, programs and interventions aimed at increasing social connections could be implemented. Moreover, protective factors can vary between individuals and communities. Examining these differences can help to better understand the unique needs and challenges faced by different populations, and tailor interventions accordingly. As such, it becomes possible to create a more supportive environment that promotes overall mental health and well-being. Examining potential protective factors can be especially important for communities facing chronic stress and adversity, like during the COVID-19 pandemic, for example.

The faith factor is one such factor that can be examined as protective in this context. The faith factor refers to the positive relationship religious involvement has with physical, mental, and physiological conditions (Koenig & Cohen, 2002). It is important to note that not all individuals will have the same experience with religious coping and support, and that cultural and individual differences play a role in the relationship between religion and mental health. However, examining the faith factor as a protective factor can help us better understand how religious

involvement aids individuals in their efforts to manage stress and promote well-being (Koenig & Cohen, 2002).

The faith factor is well-known and relates to religious involvement. However, there are other aspects of religiosity to consider, such as religious affiliation, intensity, and involvement. Religiosity refers to the degree to which an individual identifies with, and is committed to, a religious belief system. It encompasses a range of concepts, including affiliation, intensity, and involvement, which are used to measure an individual's religiousness (Hackney & Sanders, 2003). Religious affiliation refers to the formal membership in a particular religious group, such as Christianity, Islam, Buddhism, or Hinduism, for example. It is typically measured by asking individuals to self-identify with a particular religious tradition (Dougherty et al., 2007). Religious intensity refers to the degree of commitment an individual has to their religious beliefs, as well as the importance they place on those beliefs in their everyday lives. This aspect may include beliefs in a higher power, adherence to religious teachings, and engagement in religious practices such as prayer or attending religious services (Longenecker et al., 2004). Religious involvement refers to the extent to which an individual participates in religious activities and communities. This can include attending religious services, engaging in religious practices, participating in religious organizations, and volunteering in religious activities (Harris et al., 2006).

Religiosity has also been examined as a protective factor in college students (Yonker et al., 2012). Examining religiosity as a protective factor can help to better understand the role of religion in coping with stress and adversity and promote the use of religious beliefs and practices as a means of promoting resilience and well-being. For some individuals, religion can provide a sense of meaning, purpose, and direction, which may be beneficial for their overall well-being.

Religious beliefs and practices may provide a source of comfort and support, especially during difficult times (Krok, 2014b). This can help individuals feel more resilient and better equipped to handle stress, anxiety, and depression. Moreover, some studies suggest that religion provides a framework to cope with their experiences and allows for social support that may mediate symptoms of mental illness (Dwiwardani et al., 2022; Hovey et al., 2014).

Religious coping and support can also play an important role in the mental health of college students and be mechanisms through which being religious has its benefits. Religious coping refers to how individuals use their religious beliefs and practices to cope with life stressors and challenges. It is a multidimensional construct that includes both positive and negative aspects of religious coping. Negative religious coping involves using religious beliefs and practices in a maladaptive or harmful way, such as blaming oneself or others for a negative event or using religion to justify harmful behaviors or attitudes. In contrast, positive religious coping involves using religious beliefs and practices in a constructive and adaptive way, such as seeking comfort and support from a religious community or finding meaning and purpose in difficult circumstances (Pargament et al., 1998).

Research has shown that positive religious coping can be a beneficial mechanism between religiosity and mental health. Positive religious coping can provide individuals with a sense of meaning, purpose, and hope, which can help them to better cope with stressors and challenges. Furthermore, positive religious coping can provide a framework for individuals to make sense of their experiences and find meaning in difficult circumstances. This type of coping can be particularly helpful for individuals facing traumatic or stressful events, such as illness, loss, or bereavement (Pargament et al., 1998).

Religious communities can also offer social support, which is critical for mental health. Religious support refers to the provision of emotional, social, and practical assistance from religious communities, leaders, and peers. This support may come in the form of prayer, counseling, guidance, social activities, and financial or material aid. Research has shown that religious support can serve as a mechanism between religiosity and mental health outcomes. Religious support can help individuals cope with stressors and challenges in their lives, provide a sense of community and belonging, and offer a source of hope and meaning. In addition, religious support can foster positive coping strategies in the face of adversity. Moreover, religious support can also help individuals connect with their spiritual beliefs and values, which may provide a sense of comfort and solace during times of emotional distress. This connection with a higher power or greater purpose may contribute to feelings of inner peace, meaning, and purpose in life. Overall, religious support can be a significant factor in the relationship between religiosity and mental health, as it can provide a buffer against negative outcomes and promote positive mental health outcomes.

In a Christian culture environment, social support has been suggested to be associated with fewer symptoms of depression in college students (Klausli & Caudill, 2018). However, being part of a religious group can provide a sense of belonging, connection, and a support network. Religious service attendance and social support have been associated with reduced stress and fewer negative effects on mental health (Rainville, 2018). This mechanism of religiosity may be especially important for college students who may be away from home and their families for the first time (Hovey et al., 2014). Religious coping and support are not a universal cure for mental health issues and should be used with other evidence-based treatments and interventions.

However, for many college students who identify as religious, religious support can play an important role in their overall mental health and well-being (Hovey et al., 2014).

There is literature on religious support and coping in college students indicating an association between positive religious coping and support and fewer mental health symptoms (Krok, 2014a; Krok, 2014b). Studies have examined this coping and support during instances of natural disasters (Woods et al., 2021), but more relevantly during the pandemic (Imran et al., 2022). However, none thus far have directly compared the responses of religiously affiliated and non-religiously affiliated students in a time of stress (like the pandemic) to support if religion accounts for fewer mental health symptoms. In the present paper, the role religion played in college students' mental health during the pandemic was investigated.

Literature Review

College Student Mental Health Concerns

Symptoms of depression, anxiety, and PTSD in college students have been increasing for several years prior to the pandemic (Twenge et al., 2010). The reasons for this increase in symptoms are complex and may include a range of factors such as academic pressure, financial stress, and changing social and cultural norms. College students are often under great academic pressure, as they are expected to perform well in their classes, complete assignments on time, and prepare for exams. This pressure can lead to stress, anxiety, and depression, especially for students who struggle with time management, organization, or academic performance (Alhasani et al., 2021). Additionally, college students often face financial stress due to the high cost of tuition, housing, and other expenses. This stress can lead to feelings of anxiety and depression, especially for students who are struggling to make ends meet or who have taken on significant debt to pay for their education (Nadeem et al., 2017). Moreover, college students today are

growing up in a rapidly changing world, with modern technologies and social media platforms that can create feelings of isolation, anxiety, and depression (Twenge, 2017). Additionally, shifting social and cultural norms can make it difficult for students to navigate relationships and find a sense of belonging and purpose (ACHA-NCHA, 2022). The pandemic has only heightened these psychopathological symptoms (Santomauro et al., 2021), as students have faced additional stressors such as isolation, changes in academic routines, and increased financial pressures (Yıldırım et al., 2022).

COVID-19 Pandemic

The COVID-19 pandemic has had a profound effect on religious coping and support, though the nature of the effect typically depends on whether the coping is positive or negative. Many individuals have relied on their religious beliefs and practices as a source of comfort, hope, and resilience during this challenging time (DeRossett, 2021). For example, some people have found solace in their faith and the idea that they are not alone in their struggles, or that their suffering is part of a larger, divine plan (Imran et al., 2022). However, the pandemic has also had a negative effect on religious coping and support for many individuals. A study of the Arab population during the first year of the pandemic suggests that limitations to religious service attendance through the restrictions on gatherings and the closure of places of worship made it difficult for people to engage in religious activities and connect with their communities. Later, as public spaces began to open again gradually after vaccines for COVID-19 were developed, those in high-risk groups or who feel unsafe may still choose not to attend in-person (Yıldırım et al., 2022). This has been especially challenging for those who rely on their religious communities for social support and a sense of belonging (Dwiwardani et al., 2022).

Additionally, the uncertainty and fear brought on by the pandemic has increased levels of stress, anxiety, and depression (Yıldırım et al., 2022), which has affected many individuals' ability to cope with life's challenges, including those related to their faith (Imran et al., 2022). For some, the pandemic has heightened feelings of existential crisis, making it difficult for them to find meaning and purpose in their lives (Zarrouq et al., 2021).

The pandemic has demonstrated the importance of religious coping and support for many individuals but has also highlighted the challenges of maintaining this support in times of crisis and uncertainty. While some religious communities have been able to adapt to the new reality by offering online services and virtual gatherings, others have struggled to maintain the level of connection and support that they provide in person (Dwiwardani et al., 2022; Rainville, 2018).

Religiosity and the "Faith Factor"

Religion is "rooted in an established tradition that arises out of a group of people with common beliefs and practices concerning the sacred," while spirituality refers more to the "meaning and purpose in life, connections with others, peacefulness, existential well-being, and comfort and joy" (Koenig, 2009, pp. 284-285). Relative to one's religion and spirituality, the faith factor is a concept in which people may overcome parts of physical and mental struggle by utilizing their belief systems. Numerous studies have found evidence to support this notion that religion promotes physical and mental health, especially in college students (Forouhari et al., 2019; Moreira et al., 2020). Some findings suggest a "positive association between religious involvement and better adaptation to chronic medical illness such as diabetes because religious coping has been associated with improved attendance at scheduled medical appointments, and better compliance with medication" (Amadi et al., 2016). Examining the faith factor as a protective factor in coping with stress and adversity is important because it can provide insight

into the mechanisms by which religious beliefs and practices can help individuals manage stress and promote well-being. This understanding can inform the development of effective and culturally sensitive interventions for reducing stress and promoting mental health.

Religiosity can be conceptualized as affiliation, intensity, and/or involvement. Affiliation, also known as preference, refers to an individual's sense of belonging to a particular religious group or community (Judd, 1986). A strong affiliation with a religious group can provide individuals like college students with a sense of belonging, connection, and social support, which can help them feel less isolated and more resilient in the face of stress and adversity (Small & Bowman, 2012). Intensity refers to the depth and importance of an individual's religious beliefs and practices (Bush et al., 2011). Individuals who have intense religious beliefs and practices may be more likely to use religion as a coping mechanism and to find comfort in their faith during challenging times (Burnett & Helm, 2013; Schindler & Hope, 2016; Sultan et al., 2020). Involvement refers to the extent to which an individual engages in religious activities, such as attending worship services, participating in religious programs and events, and practicing religious rituals (Koenig et al., 2015). A high level of religious involvement can provide individuals with more opportunities for social support and to apply their religious beliefs and practices, which can help them manage stress and adversity (Rainville, 2018). It is important to note that in addition to these constructs of religiosity, some previous studies have focused on religious orientation, which refers to how a religiously affiliated person lives their life according to their beliefs and can be intrinsic or extrinsic (Butt, 2014).

Religiosity and Mental Health in College Students

There is a growing body of research examining the relationship between religiosity and mental health in college students. Several studies have found that religiosity is associated with

mental health outcomes such as lower levels of depression, anxiety, and psychological distress (Butt, 2014; Forouhari et al., 2019; Kourosh et al., 2011; Kuyel et al., 2012). Religiosity has generally been suggested to relate to better physical and mental health (Koenig et al., 2012), but more specifically through conceptualizations like religious affiliation, intensity, and involvement.

Religious affiliation is associated with lower rates of mental illness among college students. For example, one study found that students who identified as religious had higher levels of psychological well-being and lower levels of depression (Phillips & Henderson, 2006). Similarly, another study found that students who identified as religious had lower levels of depression and stress, but not anxiety (Jansen et al., 2010). Religious intensity, or the degree of commitment to religious beliefs and practices, is associated with varying mental health outcomes in college students. Findings from one study on college students during the pandemic found that higher levels of religious intensity (commitment to and application of adaptive coping practices) were positively associated with trauma-related distress (Straup et al., 2022). However, a study conducted prior to the pandemic found that religious intensity did not predict better mental health (Agorastos et al., 2012). Religious involvement, or participation in religious activities and communities, has also been associated with better mental health outcomes in college students. A study found that students who were more frequently involved in religious services and activities reported lower levels of depression and anxiety compared to those who attended less frequently (Winterowd et al., 2005).

The research suggests that religiosity, conceptualized as religious affiliation, intensity, and involvement, may be protective against mental health problems in college students. These findings are consistent with research on college students in other populations, indicating that

religiosity may be an important factor in promoting mental health and well-being (Small & Bowman, 2012).

Religious coping

Researchers have examined several ways that religious coping may act as a potential mechanism related to fewer mental health outcomes. Religious coping, when compared with other ways of coping, appears to be especially helpful in situations, such as bereavement or serious illness, where little direct control is possible (Clarke et al., 2003). Religious coping responses may eliminate or resolve the stressful probe, thereby preserving or improving the health of the person (Koenig et al., 2012). This notion suggests a style of religious affiliation that has direct and indirect effects on health, with the indirect effects operating through religious support and coping (Koenig et al., 2012). Some specific ways in which religious coping can serve as a mechanism are by providing coping strategies including seeking spiritual support, religious forgiveness, collaborative religious coping, spiritual connection, religious purification, benevolent religious reappraisal, and religious focus (Pargament et al., 1998). The coping strategy of seeking spiritual support involves searching for comfort and reassurance through a higher power's love and care. Religious forgiveness describes using religious beliefs to forgive oneself or others for perceived wrongdoings or transgressions. Collaborative religious coping refers to an individual seeking control in the situation through a partnership with a higher power in solving the problem. Spiritual connection as a coping strategy involves seeking comfort and support through a personal relationship with a higher power or spiritual force. Religious purification refers to an individual's search for spiritual cleansing through religious actions or practices. The strategy of benevolent religious reappraisal redefines "the stressor through religion as benevolent and potentially beneficial." Lastly, religious focus involves seeking relief from the

stressor through a focus on religion (Pargament et al., 1998). These are positive religious coping strategies and are ways in which individuals with secure relationships with religion and benevolent worldviews use their religious or spiritual beliefs to cope with stressors and challenges in their lives (Pargament et al., 2011).

Moreover, religious beliefs and practices can provide individuals with specific coping strategies, such as prayer and meditation, which can help them manage stress and emotions in a healthy way (Burnett & Helm, 2013; Sultan et al., 2020). Religion can also provide individuals with a sense of meaning and purpose, which can help them make sense of difficult life events and give them a sense of direction. Additionally, it can provide comfort and hope, especially during challenging times, which can help individuals feel more resilient and better equipped to handle stress, anxiety, and depression. Moreover, religious beliefs and practices can provide a framework for understanding and making sense of life events, which can help individuals deal with stress and adversity. For example, some religious individuals may believe that their experiences are part of a larger, divine plan, or that they are being tested to grow in their faith. Additionally, the use of positive religious coping methods has been associated with having more positive world assumptions (Zukerman & Korn, 2014). This type of religious coping can help individuals feel less alone and more empowered to handle challenges.

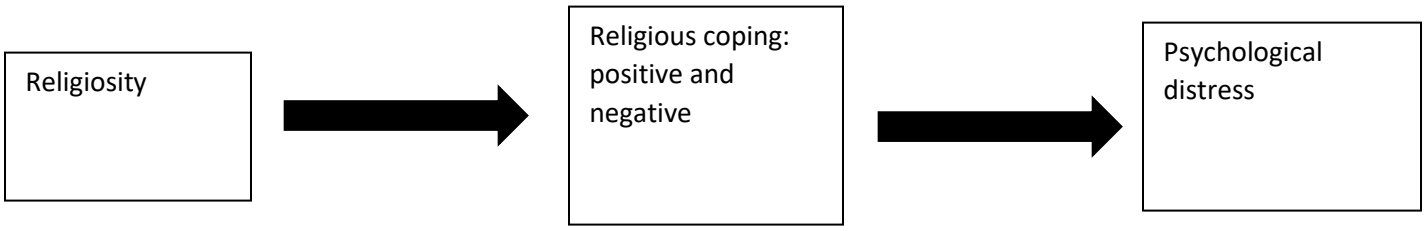
Each of these positive religious coping strategies reflects a different way in which individuals may use their religious beliefs to cope with life's crisis or stress. Assessing these strategies can provide insight into the mechanisms by which religiosity impacts mental health outcomes and inform the development of interventions that incorporate positive religious coping strategies to improve mental health outcomes.

Kenneth Pargament developed a model (see Figure 1) of religious coping that describes how individuals use religious beliefs and practices to cope with stressors in their lives. The model proposes two types of religious coping: positive and negative. Positive religious coping refers to the use of religious beliefs and practices to find meaning and purpose in difficult situations and is associated with greater psychological well-being and better mental health outcomes (Pargament et al., 2011). This may include seeking spiritual support, spiritual connection, and benevolent religious reappraisal (Pargament et al., 1998). In contrast, negative religious coping refers to the use of religious beliefs and practices in a way that causes distress or exacerbates existing problems and is associated with greater psychological distress and poorer mental health outcomes (Pargament et al., 2011). This type of coping may include punishing God reappraisals, spiritual discontent, and reappraisal of God's powers (Pargament et al., 1998).

Pargament's model proposes positive or negative religious coping as mediators of the relationship between religiosity and psychological distress. The model implies that religiosity leads to the use of both positive and negative religious coping. Positive religious coping is suggested to lead to less distress and negative religious coping is suggested to lead to more distress. Pargament suggests that if there is more positive than negative it leads to less distress, and if more negative than positive leads to more distress (Pargament et al., 2011). Moreover, this model recognizes that religious coping is complex and can have both positive and negative effects on mental health outcomes. It emphasizes the importance of assessing the nature and function of religious beliefs and practices in individuals' lives and highlights the need for culturally sensitive and appropriate interventions that acknowledge the role of religion in coping with stressors (Pargament et al., 2011). Though the effects may vary at different levels of

religiosity, religious coping has been shown to provide additional methods of responding to major stress that non-religious people do not have (Abbott et al., 2021; Pargament et al., 1998).

Figure 1 - Pargament's Model



Of positive and negative types of religious coping methods, positive religious coping was suggested to be a protective factor in a study of Somali refugees attending college in the United States and is often associated with fewer symptoms of depression (Areba et al., 2018). Other studies have found similar outcomes where positive religious coping is associated with fewer symptoms of anxiety in general samples from the United States and in the general Arab population, respectively (DeRossett et al., 2021; Imran et al., 2022; Yıldırım et al., 2022). In a trauma-specific mental health outcome like PTSD, positive religious coping is also associated with lower risk of PTSD and fewer symptoms of PTSD (Mesidor & Sly, 2019).

In studies investigating positive religious coping, it is most often examined as a mediator of mental health outcomes. Krok's (2014b) investigation of the mechanisms of religious coping as a mediator in the relationship between religiosity and mental health outcomes yielded partial support for Pargament's theory of positive and negative religious coping, which also utilizes coping as a mediator (Pargament et al., 1998). Moreover, in the context of the review, positive religious coping was suggested to enable "individuals to attain positive functioning and well-being that reflects mental health" across populations (Krok, 2014a). In an earlier study, positive religious coping was examined as a mediator in stressful life events, specifically kidney transplant surgery, with religious affiliation as a moderator (Tix & Frazier, 1998). The results of

this study and others suggest that positive religious coping can act as an effective mediator of stress and symptoms of mental illness, though the degree of effectiveness may vary between coping strategies and religious affiliation.

Positive religious coping has also been examined as a potential moderator of the relationship between psychological well-being and other life stressors or traumatic incidences, such as racism or the COVID-19 pandemic. In a study of Christian Asian American college students, positive religious coping was not found to be a significant moderator of racism and its detrimental impact on mental health (Kim, Kendall, & Webb, 2015). In contrast, a study with participants including college students and the general population (aged 18-64) found that positive religious coping was suggested to partially moderate the effects of trauma and anxiety (Dwiwardani et al., 2022). Similarly, a study of COVID-19 pandemic lockdowns in the global south found that increased positive religious coping was suggested to moderate the effects of religious struggle and depression (Captari et al., 2022).

Religious support

Religious support is another mechanism through which religiosity relates to mental health outcomes. Specifically, religious support can serve as a mechanism for connecting with a religious community. Religious communities can provide individuals with a sense of belonging, connection, and social support, which can help them feel less isolated and more resilient in the face of stress and adversity (Krok, 2014b).

Religious support refers to the support that individuals receive from their religious communities, leaders, and practices. Some different types of religious support commonly assessed in research are emotional, instrumental, informational, tangible, and appraisal religious support (Schwarzer et al., 2004).

Emotional religious support involves providing empathy, understanding, and expressions of care to someone facing a stressful situation. It aims to alleviate emotional distress and foster a sense of being cared for. Emotional support can be offered through active listening, comforting words, and gestures of empathy. Additionally, instrumental religious support refers to the practical assistance and tangible resources that individuals receive from their social network. This type of support includes direct help with tasks, such as providing transportation, running errands, or offering financial aid, and aims to address the practical challenges associated with a stressful situation. Moreover, informational religious support involves providing advice, guidance, and information to help individuals better understand and navigate their stressful circumstances. This type of support can include offering suggestions, recommendations, and relevant knowledge to assist in problem-solving. Though similar to instrumental support, tangible religious support differs in that it encompasses the provision of physical resources or material aid to individuals in need. This can involve the direct sharing of resources such as food, clothing, shelter, or other concrete forms of assistance. Appraisal religious support involves offering feedback, perspectives, and evaluations of a person's situation or circumstances. This type of support helps individuals to assess their situation more objectively and make informed decisions. Appraisal support can contribute to a better understanding of challenges and potential solutions (Schwarzer et al., 2004).

It is important to note that the effectiveness of each type of support can depend on the context and the recipient's perception of their needs. Different individuals may prioritize different types of support, and the presence of a strong and diverse social support network is generally associated with better mental health outcomes. General social support has been found to be associated with higher levels of resilience, better mental health outcomes, and subjective well-

being among college students (Yıldırım & Tanrıverdi, 2021). Specifically, though, social support has been studied in relation to religious involvement, like in the context of religious individuals in a large southeastern community that reported more frequent religious involvement, social support, and larger social networks, in addition to "more favorable perceptions of the quality of their social relationships than do their unchurched counterparts" (Ellison & George, 1994). In studies examining the relationship between religious social support and mental health outcomes among college students, results suggest that religious support is associated with better mental health outcomes, such as decreased symptoms of anxiety and psychological stress (Hovey et al., 2014; Milevsky, 2017). Furthermore, a study from 2014 (Hovey et al.) supports previous findings that both emotional and instrumental religious support, though emotional more than instrumental support, are particularly important in predicting better mental health outcomes among college students.

Overall, research suggests that religious support, particularly emotional and instrumental religious support, is an important factor in promoting better mental health outcomes among college students and can provide a valuable resource for individuals seeking support and guidance during times of stress or crisis.

Whether the stressor is a life-threatening disease or disability, an environmental disaster, or an interpersonal conflict, the subject's perceived support from God or other congregation members may reduce reaction to the stressor. Two ways that religious support may enhance health and well-being are: (1) assistance from others of their faith may help to offset the harmful effects of stressful life events (the death of a loved one, financial loss), and (2) religious support may be an important determinant of health. This second function is based on the notion that health and well-being are bolstered simply by being embedded in an active and integrated social network. These

benefits arise because being part of a tightly knit group increases self-esteem, bolsters feelings of control and, in some instances, promotes the adaptation of desirable mental health behaviors (Fetzer Institute, 1999).

Based on current findings, studies investigating religious support and mental health outcomes in college students most often examine the variable as a mediator (Brown et al., 2008; Hovey et al., 2014; Milevsky, 2017). Brown et al. (2008) examines how religiousness, spirituality, and social support interplay as they relate to underage drinking behavior among college students. The study suggests that the impact of religiousness and spirituality on mental health outcomes, as reflected by lower rates of underage drinking, might be mediated by the social support individuals receive from their religious or spiritual communities. Similarly, Hovey et al. (2014) examined the role of religious-based emotional support in college students as a mediator between religiosity and depression as a mental health outcome. These results were further supported in a later study (Milevsky, 2017) that also examined social support in first-year college students as a mediator between religiosity and well-being, including depression. In all three studies, the concept of religious social support emerges as a potential mediator between religiosity and various mental health outcomes.

Woods' model (see Figure 2) includes religious coping, like Pargament's model, but also includes religious support as a mechanism in the context of exposure to a traumatic event. The religious support in the model is characterized as emotional or instrumental. Emotional and instrumental support are two types of religious support associated with better mental health outcomes (Schwarzer et al., 2004). Emotional social support refers to the provision of emotional and psychological assistance from religious communities, leaders, and peers. This may include listening, empathy, validation of one's emotions, spiritual guidance, prayer, or other types of

emotional aid (Schwarzer et al., 2004). Research has found that emotional support from religious communities can help individuals cope with stressors and challenges in their lives, promote resilience, and foster a sense of belonging and social support. This type of support is associated with better mental health outcomes such as decreased anxiety, depression, and distress (Hovey et al., 2014). Instrumental support refers to the practical assistance and materials that individuals receive from their social network (Schwarzer et al., 2004). This type of support can provide individuals with the resources and tools they need to cope with life stressors and improve their mental health outcomes. Research has found that instrumental support from religious communities can promote well-being, decrease symptoms of depression, and reduce levels of anxiety and distress (Finch & Vega, 2003; Van Olphen et al., 2003). Overall, emotional and instrumental support are two types of religious support that have been found to be associated with and mediators of the relationship between religiosity and better mental health outcomes.

Religious coping and religious support are viewed as a mediator in the relationship between exposure to trauma and PTSD (Woods et al., 2021). The study by Woods et al. (2021) titled "Social Support, Religious Coping, and Traumatic Stress among Hurricane Katrina Survivors of Southern Mississippi: A Sequential Meditational Model" investigates the relationships between social support, religious coping, traumatic stress, and the mediating role of emotional and instrumental support in the context of Hurricane Katrina survivors in southern Mississippi. The model proposed in the study (see Figure 2) examines the relationships among these variables in the aftermath of a traumatic event like Hurricane Katrina. The model suggests two pathways through which these variables might influence traumatic stress: a negative religious coping pathway and a positive religious coping pathway. The negative religious coping pathway describes that exposure to the exposure to the traumatic event (Hurricane Katrina) is expected to

lead to more negative religious coping strategies, as individuals attempt to make sense of the trauma through religious beliefs and practices. Then, more negative religious coping is hypothesized to lead to decreased emotional and instrumental support. This might occur because negative religious coping could potentially strain social relationships and hinder effective support networks. Furthermore, decreased emotional and instrumental support is then expected to be associated with increased post-traumatic stress disorder (PTSD) symptoms. A lack of support might exacerbate the traumatic stress experienced by survivors. The positive religious coping pathway describes that positive religious coping strategies, regardless of exposure to traumatic event(s), are expected to lead to increased emotional and instrumental support. Then, increased emotional and instrumental support is hypothesized to result in decreased PTSD symptoms. Positive religious coping might foster more resilient support networks, aiding survivors in their recovery from traumatic stress.

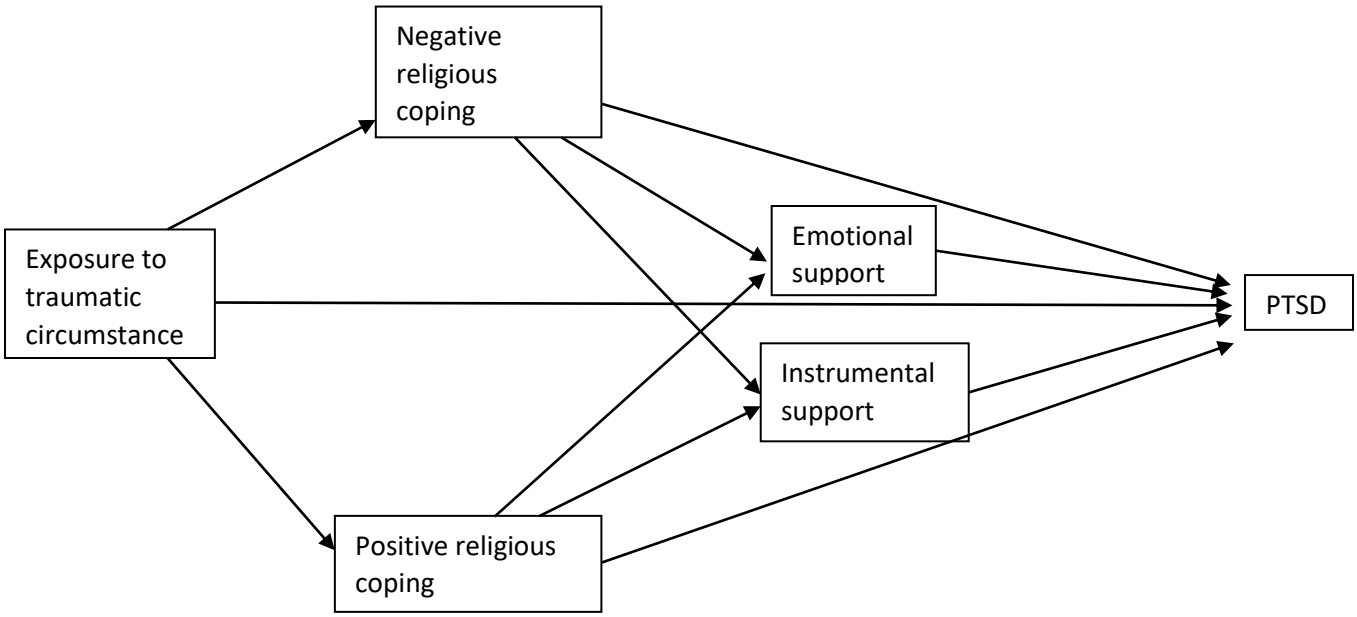
In summary, the model suggests that negative religious coping could lead to reduced support, which in turn is associated with higher PTSD symptoms. On the other hand, positive religious coping could enhance support and consequently reduce PTSD symptoms. The findings of this study support the proposed model to an extent. The researchers found that negative religious coping was positively related to traumatic stress symptoms, partially supporting the negative religious coping pathway. However, contrary to expectations, they did not find a significant relationship between negative religious coping and emotional support, thereby not fully supporting the mediating role of emotional support. Moreover, regarding positive religious coping, the study found that it was negatively associated with traumatic stress symptoms. Additionally, the researchers discovered that positive religious coping was linked to increased emotional and instrumental support, thus partially supporting the positive religious coping

pathway.

Other studies generally align with the conceptual model proposed by Woods et al. (2021). For instance, research with samples of college students has shown that negative religious coping strategies can contribute to poorer mental health outcomes, including higher levels of anxiety and depression (Eskin et al., 2020), which are related to traumatic stress (Sujadi et al., 2023). On the other hand, positive religious coping has been associated with better mental health outcomes (Pargament et al., 1998) and higher levels of perceived social support in college students (Wilson et al., 2021).

However, it is important to note that the relationships between these variables can be complex and might vary depending on factors such as individual differences, cultural backgrounds, and the nature of the traumatic event. While this study and others provide valuable insights, the nuances of these relationships require further exploration and validation across different populations and contexts.

Figure 2 - Wood's Model



The Completed Study

For this study, we utilized affiliation as the mode of conceptualization and described the psychopathology symptoms of religious-affiliated students and non-religiously affiliated students. Religious affiliation, religious intensity, and religious involvement are three distinct dimensions of religiosity that can impact mental health outcomes in different ways. Religious affiliation refers to a person's formal identification with a particular religious group or denomination, whereas religious intensity refers to the degree to which an individual is committed to their religious beliefs and practices. Religious involvement refers to the frequency and depth of an individual's participation in religious activities and communities. Each of these dimensions of religiosity may have different effects on mental health outcomes, and therefore, it is important to measure each one individually to gain a comprehensive understanding of the relationship between religiosity and mental health. However, religious affiliation is often used as the primary measure of religiosity in studies examining the relationship between religiosity and mental health outcomes as it is easier and a more objective measure through self-report surveys. While religious intensity and involvement are important dimensions of religiosity that may also impact mental health outcomes, religious affiliation is often used as a primary measure of religiosity in research due to its ease of measurement and objective nature.

This study assessed psychopathological symptomology including symptoms of anxiety, depression, and PTSD, as they are three of the most common mental disorders affecting college students (ACHA-NCHA, 2022). Data was collected during the first year of the pandemic and the survey was administered to students during the fall of 2020 and spring of 2021 semesters.

The gaps in this literature that this study addressed are that most studies examine religious involvement and that few studies examine religiosity and mental health during the pandemic, with college students, or compare religiously affiliated with non-religiously affiliated.

Religiosity is associated with better mental health outcomes, including lower rates of depression, anxiety (Abdel-Khalek et al., 2019; Jansen et al., 2010), and post-traumatic stress (Dwiwardani et al., 2022, Overcash et al., 1996). However, the relationship between religiosity and mental health is complex, and many factors may influence this relationship, including the type of religiosity measured (affiliation, intensity, or involvement), the context of the study (e.g., during the pandemic, with college students), and the comparison group (e.g., religiously affiliated vs. not religiously affiliated individuals).

Studies that have examined religious affiliation have found that individuals affiliated with a religious group have better mental health outcomes than those not religiously affiliated. For example, one study found that religiously affiliated Hispanic/Latino adults had lower rates of depression and anxiety symptoms compared to those who were not religiously affiliated (Lerman et al., 2018). Additionally, a study of adolescents (students in U.S. grades 6-12) suggested that religiously affiliated participants experienced fewer pandemic-specific stressors and fewer mental health challenges compared to non-religiously affiliated participants (Dyer et al., 2023).

Regarding religious intensity, studies have found that individuals more committed to their religious beliefs and practices have better mental health outcomes than those less committed. For example, one study found that individuals who reported high levels of religious intensity had lower rates of depression compared to those who reported low levels of religious intensity (Jansen et al., 2010).

Studies that have examined religious involvement have found that individuals who participate more frequently in religious activities have better mental health outcomes than those who participate less frequently. For example, one study found that individuals who attended religious services more frequently reported higher levels of social support and lower rates of

psychological distress compared to those who attended religious services less frequently (Ellison & George, 1994).

During the COVID-19 pandemic, there has been increased interest in the relationship between religiosity and mental health. Some studies have found that positive religious coping strategies can help individuals cope with the stress and uncertainty of the pandemic and may be associated with better mental health outcomes, such as reduced anxiety (DeRossett et al., 2021; Imran et al., 2022) and depression (Captari et al., 2022; Zarrouq et al., 2021). However, other studies have found that the pandemic has disrupted religious practices and communities, which may have negative impacts on mental health outcomes (Copeland et al., 2023; Jacobi et al., 2022)

While there is evidence to suggest that religiosity is associated with better mental health outcomes (Hackney & Sanders, 2003; Koenig et al., 2012), there are still gaps in our understanding of this relationship. Future studies should continue to examine the different dimensions of religiosity (affiliation, intensity, and involvement) and their impact on mental health outcomes, as well as the potential mediating mechanisms and moderators of this relationship. Additionally, studies focusing on different populations, including during crises such as the COVID-19 pandemic, may help elucidate this relationship.

Studies have found that positive religious coping and religious support may serve as mediators in the relationship between religiosity and better mental health outcomes (Mesidor & Sly, 2019). Positive religious coping, which involves seeking spiritual support and guidance to find meaning and purpose in difficult situations, has been found to be associated with decreased levels of anxiety, depression, and distress (Pargament et al., 1998). Religious support, which includes emotional and instrumental support from religious communities and leaders, has also

been found to be associated with better mental health outcomes, such as decreased symptoms of depression and anxiety (Hovey et al., 2014).

Furthermore, there are still gaps in understanding the extent to which positive religious coping and religious support help account for the relationship between religiosity and better mental health outcomes, particularly during the pandemic and among college students. Some studies have found that positive religious coping and religious support significantly mediate the relationship between religiosity and mental health outcomes in these populations (Krok, 2014a; Milevsky, 2017). However, there is a need for more research to examine positive religious coping and religious support as specific mechanisms that impact mental health outcomes, and to examine these mechanisms as potential moderators. While positive religious coping and religious support may serve as mediators in the relationship between religiosity and better mental health outcomes, further research is needed to fully understand the extent of their impact, particularly in the context of the COVID-19 pandemic and among college students.

This study asked, are there differences in mental health symptoms between religious/non-religious participants during the pandemic? If so, is this difference accounted for, in part, by positive religious coping and religious support? The ultimate question we hoped to answer with this study was, for those who are religious, does religious coping and support benefit them regarding psychopathological symptoms. I hypothesized that religious-affiliated college students will have lower levels of symptoms of depression, anxiety, and/or PTSD compared to nonreligious-affiliated students. I also hypothesized that positive religious coping and religious support help account for the relationship between religious affiliation and lower symptoms.

Methods

The research aims that were addressed in this report are part of a larger cross-sectional online survey study that examined psychosocial and demographic risk and protective factors of PTSD during the pandemic (2020-21 academic school year) in a sample of undergraduate students from a large southeastern public university. During the COVID-19 pandemic, the survey was administered in the fall 2020 and spring 2021 semesters. The survey was administered online using the ECU-supported Qualtrics survey development software program to enhance participant safety during the pandemic and reduce participant burden by allowing participants to complete assessments outside of a lab setting and at a time and place convenient to them. This also allowed for data to be recorded automatically and electronically. Using data collected during the pandemic provides a specific stress context in which to examine religious affiliation, positive coping, and support in relation to mental health in college students. Students' religious affiliations, experiences with religious support and coping, and self-reported psychopathological symptoms were assessed quantitatively.

Participants

Students were recruited using several methods: 1) Introductory Psychology courses, 2) a random sample of students, oversampled for male students and people of color, provided by the Survey Review and Oversight Committee, 3) emails to student organizations reflective of diversity requesting they share the study information with their members, and 4) emails to advisors, faculty, and other staff requesting they share the study with students. Participants in Introductory Psychology courses were given research credit for participating. All other participants were entered into a gift card raffle held each semester. The inclusion criteria were: 1) being a student at East Carolina University, and 2) being 18-29 years of age.

Procedures

Institutional Review Board approval was obtained prior to starting the study (see appendix A). Participation in the study included one online survey which included: 1) reading a consent form and consenting to participate, 2) completing a survey, and 3) reading about mental health resources. Upon going to the survey website provided to interested students during recruitment, students were presented with the consent form, which gave a brief explanation of why the study is being done, what participants were asked to do in the study, and any possible harms or discomforts, as well as benefits, participants may experience if they chose to participate in the study. At the end of the consent form, participants were asked to select one of the following two options: "Yes, I would like to continue to the next part of this study," or "No, I would not like to continue with this study." Only participants who selected "Yes, I would like to continue to the next part of this study," were advanced on to the survey. When responding to the item requesting age, students selecting ages less than 18 or over 29 were exited from the survey due to not meeting the age eligibility requirement. When responding to the item asking about their student status, individuals indicating they were not ECU (East Carolina University) students were exited from the survey due to not meeting that eligibility requirement.

Measures

The survey assessed demographic/background information (e.g., gender, race/ethnicity, age, parent education, student year, sexual orientation), PTSD symptoms, PTSD risk factors (e.g., various COVID-related aspects such as getting COVID and being in a high-risk medical group; prior trauma, depression, and anxiety symptoms, maladaptive coping strategies), and PTSD protective factors (e.g., family support, adaptive coping strategies, various aspects of religiosity/spirituality). Engagement items were included throughout the survey to enable determination of participant engagement in the survey process (e.g., when you see this item,

select “strongly agree”). Of the constructs measured in the larger study, those relevant to addressing the aims of this report are described below and include religious affiliation, religious coping, religious support, and psychological symptomology (depression, anxiety, and PTSD symptoms).

Religious affiliation, coping, and support

Religious affiliation and religious support were assessed with the 40-item Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS) (see Appendix B). Of the 40 items, only 3 were used in the survey for this study and are included in the appendix. The BMMRS assesses a multitude of constructs including daily spiritual experiences, meaning, values, beliefs, forgiveness, private religious practices, religious/spiritual coping, religious support, religious/spiritual history, commitment, organizational religiousness, and religious preference. Positive religious coping was assessed with the 7-item Positive Religious Coping Subscale of the 14-item Brief Religious COPE (see Appendix B).

Religious affiliation: The item that assessed religious affiliation was meant to ascertain the religious tradition or denomination with which an individual identifies. religion or religious preference they identify with, or closeness to, a given religious community or tradition. Thus, this assessment may or may not indicate current church membership or current participation. The item asked the respondent to select their religious or spiritual preference and to specify their branch if possible after selecting. The possible options were Atheist, Agnostic, or No Religion; Baha’i; Buddhist; Christian, Protestant (e.g., Methodist, Lutheran, Baptist); Christian, Eastern Orthodox; Christian, Roman Catholic; Christian, other (e.g., Mormon); Hindu; Jewish; Muslim; Shinto; Taoist; or Wiccan or other ritual magic. Participants were categorized as religiously affiliated or non-religiously affiliated based on their responses to this item. Respondents that

selected “atheist, agnostic, or no religion” were categorized as non-religiously affiliated, while respondents that selected from the other provided options were categorized as religiously affiliated. The respondent also had the option of selecting “Another religious or spiritual group not specified here” and describing their preference if they did not see it listed (Fetzer Institute, 1999). From these responses, those that aligned with “atheist, agnostic, or no religion” were included as non-religiously affiliated. The responses that aligned with the other provided options were included as religiously affiliated. Exclusions from these responses were made if the respondent indicated their preferences were spiritual (not religious), if they did not provide enough additional information on their preference to be categorized, or if their response was inconclusive and unable to be definitively categorized.

Positive religious coping*:* The 14-item Brief Religious COPE assesses two patterns of religious/spiritual coping with stressful life events: positive religious/spiritual coping reflective of benevolent religious methods of understanding and dealing with life stressors; and negative religious/spiritual coping reflective of religious struggle in coping (Pargament et al., 2011). We modified some item wording (from “God” to “God or the spiritual being(s) in which I believe”) to be more inclusive. Respondents rated each item using a scale from 1 (Not at all) to 4 (A great deal). The responses were summed with the total score for the subscale ranging from 7 to 28 and higher scores indicating higher positive religious coping (Pargament et al., 2011).

Research suggests that the Brief RCOPE is a reliable and valid measure. The positive religious coping (PRC) subscale has demonstrated good internal consistency across various samples, though these have been largely Christian and American. For concurrent validity, cross-sectional studies have found that PRC is significantly and positively correlated with well-being constructs and is occasionally inversely related to indicators of poor functioning (e.g., anxiety

and depression). Furthermore, the incremental validity of the Brief RCOPE shows that PRC has been predictive of outcome variables after other relevant demographic and psychosocial variables have been controlled. In a previous study, the median Cronbach alpha for the positive religious coping (PRC) scale was 0.92, with the highest alpha being 0.94 (Pargament et al., 2011). The Cronbach alpha in the present study was .968. There is support for the reliability of the BMMRS with an Alpha r of .81 for the domain of positive coping, .86 for the domain of congregation benefits, and .82 for public religious activities. These domains represent the items evaluating religious/spiritual coping and support (Fetzer Institute, 1999).

Religious support: The items that assessed religious support ask about select aspects of the social relationships between study participants and others in their shared place of worship or general similar theologies. Specifically, the items asked about anticipated support. The possible responses ranged from 1 (A great deal) to 4 (None). The items were reverse-scored and summed so that a higher score reflects greater religious support (Fetzer Institute, 1999). With the adapted survey for the current study, the total score for this measure ranged from 2-8 with higher scores indicating higher religious support. The Cronbach alpha in the current study was .935.

Psychopathological symptomology

Anxiety symptomology was assessed using the 7-item Generalized Anxiety Disorder Scale-7 (see Appendix B). Respondents were asked items that correlate with anxiety symptomology and to rate their frequency of experiencing these symptoms over the past two weeks. Respondents rated each item using a four-point scale ranging from 0 (Not at all) to 3 (Nearly every day). Items were summed, with total scores ranging from 0 to 21 and higher scores reflecting greater anxiety severity. The GAD 7 scoring guide has four categories of anxiety severity based on the total of the seven questions. The GAD 7 score interprets scores of 0 – 4 as “None to Minimal Anxiety”,

5 – 9 as “Mild Anxiety”, 10 – 14 as “Moderate Anxiety”, and 15 – 21 as “Severe Anxiety”. A cutoff point of 10 was identified to indicate clinically significant anxiety. The internal consistency of the GAD-7 in previous studies was good (Cronbach $\alpha = .92$) (Spitzer et al., 2007). The Cronbach alpha in the present study was .912. Test-retest reliability was also good (intraclass correlation = 0.83). For criterion and construct validity, GAD-7 self-report scale diagnoses were compared with independent diagnoses made by mental health professionals, functional status measures, disability days, and health care use (Spitzer et al., 2007).

Depressive symptomology was assessed using the 8-item Patient Health Questionnaire – 8 (see Appendix B). Respondents are asked items that correlate with depressive symptomology and to rate their frequency of experiencing these symptoms over the past two weeks. Respondents rated each item using a four-point scale ranging from 0 (Not at all) to 3 (Nearly every day). Items were summed, with total scores ranging from 0 to 24 and higher scores reflecting greater depression severity. Scores for the first two questions are summed separately, and a score greater than 3 indicates anxiety. Scores for the last two questions are also summed separately, and a score greater than 3 indicates depression. Scores for items 3-6 are summed and the scores are interpreted as no/normal depression (0-2), mild depression (3-5), moderate depression (6-8), and severe depression (9-12). The cutoff score indicating clinically significant depression is 10. In addition to making criteria-based diagnoses of depressive disorders, the PHQ-8 is also a reliable and valid measure of depression severity (Kroenke et al., 2009). The Cronbach alpha in the present study was .897.

PTSD symptoms were assessed with the 20-item PTSD Checklist for the DSM-5 (PCL-5; Weathers et al., 2013) with reference to stressful experience(s) resulting from the COVID-19 pandemic. Respondents rate each item using a 5-point scale ranging from 0 (Not at all) to 4

(Extremely). A total symptom severity score (range - 0-80) can be obtained by summing the scores for each of the 20 items, with higher scores indicating greater symptom severity. Initial research suggests that a PCL-5 cutoff score between 31-33 is indicative of probable PTSD. It is valid and reliable, useful in quantifying PTSD symptom severity, and sensitive to change over time in military service members and undergraduate students (Weathers et al., 2013). The Cronbach alpha in the present study was .954.

Data Analysis

The data was analyzed using SPSS (Statistical Package for Social Sciences) version 23. Cronbach alphas was calculated for each multi-item measure. Descriptive statistics were calculated for demographic and key study variables. Correlations among key study variables were conducted. Hypothesis 1 was tested using a series of analyses of variance (ANOVAs) comparing the means scores of depression, anxiety, and PTSD symptoms between religiously affiliated and non-affiliated students. Three ANOVAs were run – each examining one of the symptom outcomes between the two groups. A series of Chi-square tests were also used to test the association between religious affiliation and the positive screens of depression, anxiety, and PTSD.

Hypothesis 2 was tested using Hayes' Process macro model 4 for SPSS to examine positive religious coping and religious support as potential parallel mediators that help account for observed relationships of religious affiliation with depression, anxiety, and/or PTSD symptoms. Three separate mediation models were run – each examining one of the symptom outcomes.

Results

Sample

An initial sample of 769 participants accessed the survey; 24 were removed (11 for non-

engagement, 13 due to lack of clear designation of religiously affiliated or not), which resulted in the final sample size of *N*= 745. Table 1 shows the descriptive statistics for the demographic characteristics of the sample. The majority of the sample were female, White, not Hispanic or Latino/ax, and continuing generation students (refer to Table 1).

Table 1

Demographic characteristics of the sample

	#	%	*M*	*SD*
Age				
			19.95	2.552
Gender				
Male	211	28.3		
Female	522	70.1		
Transgender	5	0.7		
Non-binary	5	0.7		
Do not identify as male, female, transgender, or non-binary	1	0.1		
Race				
American Indian or Alaska Native	3	0.4		
Asian	24	3.2		
Black	104	14.0		
Native Hawaiian or other Pacific Islander	3	0.4		
White	543	72.9		
Multiracial	49	6.6		

Other race	12	1.6
Ethnicity		
Not Hispanic or Latino/ax	664	89.1
Hispanic or Latino/ax	80	10.7
Generation		
First generation	248	33.3
Continuing generation	495	66.4

Descriptive Statistics for Study Variables

Table 2 displays the descriptive statistics of the study variables (religious affiliation, support, coping; and mental health variables) for the total sample. The key study variables included generalized anxiety disorder symptoms (Generalized Anxiety Scale-7), depressive symptoms (Patient Health Questionnaire-8), PTSD symptoms (PTSD Checklist for DSM-5), religious affiliation, religious support (Brief Multidimensional Measure of Religiousness/Spirituality), and positive religious coping (Brief Religious COPE). The majority of the sample were religiously affiliated, and of those that reported religious affiliation, most were Christian. For the total sample, scores for religious support were moderate and scores for positive religious coping were low. Additionally, scores on psychopathology symptoms for the total sample indicated moderate depression, mild anxiety, and low PTSD, as interpreted according to their measures (refer to table 2).

Table 2

Descriptive Statistics for Key Study Variables

	#	%	*M*	*SD*

Religious affiliation	589	79.1		
Religiously affiliated				
Buddhist	5	0.7		
Christian (Protestant)	238	31.9		
Christian (Orthodox)	21	2.8		
Christian (other)	178	23.9		
Hindu	4	0.5		
Jewish	8	1.1		
Muslim	8	1.1		
Roman Catholic	106	14.2		
Wiccan or other ritual magic	8	1.1		
Another religious/spiritual group not specified here	15	2.0		
Not religiously affiliated (*Agnostic, Atheist, or No Religion)*)	154	20.7		
Religious support			5.28	2.358
Positive religious coping			8.61	7.245
Psychopathology symptoms				
Depression			7.66	5.885
Anxiety			7.22	5.587
PTSD			17.48	16.893

Correlations Among Key Study Variables

Table 3 presents the correlations among the key study variables. Pearson correlations were used in examining relationships among all study variables (religious support, positive religious coping, depression, anxiety, PTSD symptoms) except the religiously affiliated variable. Spearman correlations were used to examine relationships of the religiously affiliated variable with all other key study variables (religious support, positive religious coping, depression, anxiety, PTSD symptoms). Weak negative but statistically significant correlations were observed between religious affiliation and symptoms of depression, anxiety, and PTSD, and strong positive correlations with religious support and positive religious coping. Positive religious coping and religious support were both weakly, negatively correlated with symptoms of depression, anxiety, and PTSD. Positive religious coping and religious support were strongly positively correlated. All symptom measures were strongly positively correlated with each other.

Table 3

Correlations Among Study Variables

	Religious affiliation	Religious support	Positive religious coping	Depression symptoms	Anxiety symptoms
Religious support	.520**				
Positive religious coping	.585**	.579**			
Depression symptoms	-.188**	-.306**	-.179**		

Anxiety symptoms	-.143**	-.246**	-.102**	.765**	
PTSD symptoms	-.128**	-.234**	-.073*	.710**	.691**

* p < .05, ** p < .01, *** p < .001

Hypothesis 1: ANOVAs

To examine the differences in symptoms of depression, anxiety, and PTSD between religiously affiliated and non-religiously affiliated students, a series of one-way ANOVAs were conducted (see Table 4). The results revealed a significant main effect of religious affiliation on symptoms of depression, anxiety, and PTSD. Post hoc tests using the Bonferroni correction indicated that religiously affiliated students had significantly lower levels of depression compared to non-religiously affiliated students. Similarly, religiously affiliated students exhibited lower levels of anxiety compared to non-religiously affiliated students. Religiously affiliated students reported lower levels of PTSD compared to non-religiously affiliated students (refer to Table 4). These findings support Hypothesis 1 which proposed that religious-affiliated college students would have lower levels of symptoms of depression, anxiety, and/or PTSD compared to nonreligious-affiliated students.

Table 4

ANOVA results

Variable	Religiously affiliated		Not religiously affiliated				
	M	*SD*	*M*	*SD*	*F (df)*	*p*	η^2
Depression	7.08	5.664	9.86	6.190	28.525	<.001	.037

symptoms					(1)		
Anxiety symptoms	6.84	5.545	8.68	5.523	13.664 (1)	<.001	.018
PTSD symptoms	16.27	16.182	22.05	18.700	14.730 (1)	<.001	.019

Table 5

Chi-square results

	Chi-square	*df*	*p*	*#*	*%*
Depression symptoms	15.063	1	<.001	246	33.2
Anxiety symptoms	8.970	1	<.003	245	32.9
PTSD symptoms	8.336	1	<.004	157	21.1

Hypothesis 2: Mediation

Hayes' PROCESS macro for testing parallel mediation revealed there was a significant total effect between religious affiliation and symptoms (depression B = -2.77, p <.001; anxiety B = -1.94, p <.001; PTSD B = -5.99, p <.001). Significant paths from religious affiliation to positive religious support (B = 3.16, p <.001) and religious affiliation to positive religious coping (B = 9.83, p <.001). Significant paths from positive religious support to symptoms (depression B =-.71, p <.001; anxiety B = -.62, p <.001; PTSD B = -1.89, p <.001); and positive religious coping to PTSD symptoms only (B = .25, p = .02). When positive religious support & coping entered the relationship between religious affiliation and symptoms, the direct effects were not

significant for depression, anxiety, or PTSD symptoms. In addition, the 95% confidence intervals for positive religious support for depression, anxiety, and PTSD symptoms did not include 0; and for positive religious coping and PTSD symptoms did not include 0. Hence, positive religious support is considered as a mediator for religious affiliation on depression, anxiety, and PTSD symptoms; and positive religious coping is considered as mediator for religious affiliation on PTSD symptoms.

Discussion

The outcomes of this research provided insight into the differences in mental health outcomes between religiously affiliated and non-religiously affiliated college students with mediation by religious coping and support. This chapter provides a description of the findings, how they relate to previous research, and their implications. The limitations and recommendations for future research are also discussed.

The present study aimed to investigate the relationships between religious affiliation, positive religious coping, and religious support with symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) in college students during the fall 2020 and spring 2021 academic semesters, specifically in the context of the COVID-19 pandemic. Given that COVID-19 restrictions started in the early months of 2020, these semesters comprised the first full academic year in the pandemic. Restrictions on gathering and the closure of places of worship or the transition to virtual religious service are suggested as being linked to changes to people's engagement with religious activities and connection with their communities. With the suggested disruptions to religious coping and support, it was fitting for the context of the pandemic to investigate the relationship between religious affiliation and psychopathology symptoms, with positive religious coping and religious support as mechanisms. The objectives were to examine

whether religiously affiliated college students have lower levels of symptoms compared to non-religiously affiliated students, and if so, to examine whether positive religious coping and religious support mediate these relationships.

We hypothesized that religiously affiliated college students would exhibit fewer symptoms of depression, anxiety, and PTSD compared to non-religiously affiliated students. Findings revealed a significant main effect of religious affiliation on symptoms of depression, anxiety, and PTSD. Moreover, religiously affiliated students had significantly lower levels of depression, anxiety, and PTSD compared to non-religiously affiliated students.

The findings of this research study align with a consistent pattern in previous research, indicating that religious affiliation is associated with fewer symptoms of depression, anxiety, and, in a few studies, PTSD. Previous studies have also focused on affiliation, but some have also found similar relationships with other constructs of religious intensity and involvement. Furthermore, these findings are in line with the broader body of research of religiosity and mental health outcomes, particularly those conducted among college students, in the U.S. and globally, as well as in the context of the pandemic. The study's results suggest the significance of religious affiliation as a protective factor for college students, especially during the challenging context of the pandemic. Importantly, the study suggests that religious affiliation might serve as a transdiagnostic protective element, potentially contributing to better mental health across various symptoms.

Additionally, it was hypothesized that positive religious coping and religious support would mediate the observed relationships between religious affiliation and lower symptom levels. Findings revealed that positive religious support is considered as a mediator for religious affiliation on depression, anxiety, and PTSD symptoms; and positive religious coping is

considered as mediator for religious affiliation on PTSD symptoms.

The findings of this research study are consistent with previous research in supporting the protective role of religiosity in mental health and highlighting the mediating role of positive religious coping and religious support. Previous studies have explored related mechanisms such as beliefs, commitment, and experience and have examined similar relationships with depression, anxiety, and PTSD, but less information is known about the relationship between these mechanisms and PTSD in this context than of depression and anxiety. Moreover, the study's results align with previous research involving college students, in the U.S. and globally, and in the context of the pandemic.

From these findings, the role of positive religious support emerges as a crucial mediator in this relationship. Specifically, the study reveals that being religiously affiliated is linked to experiencing positive religious support, which, in turn, corresponds to lower levels of mental health symptoms. This mediation implies that religious communities and the support they provide play a pivotal role in mitigating the impact of stressors on mental health among college students during the pandemic. Furthermore, the study indicates that positive religious coping operates as a mediator only in the relationship between religious affiliation and symptoms of post-traumatic stress disorder (PTSD). In this context, positive religious coping appears to play a significant role in reducing the severity of PTSD symptoms among religiously affiliated college students. These findings are consistent with previous research, which often emphasizes the role of religious support over positive religious coping as a mediator.

It is important to note that the study's results may suggest a specific role for positive religious coping in the context of trauma. While positive religious coping does not emerge as a mediator for depression and anxiety symptoms in the current study, it plays a significant mediating role for

PTSD symptoms. This could suggest that positive religious coping becomes particularly relevant in times of trauma or highly distressing events.

Practical Implications

Interpretation of results will help in identifying at-risk college students and developing effective coping and support strategies. One suggested strategy for colleges and universities implementing interventions is to create virtual or socially distanced community-building opportunities, such as online support groups or forums, to provide systems of support akin to what religiously affiliated students experience in their religious communities.

However, based on these findings, it is important to identity at-risk students who may be more vulnerable to mental health issues. While the study highlights the protective nature of religious affiliation, it does not necessarily label non-religious students as at-risk. Instead, it emphasizes the importance of recognizing the mental health needs of students who may not have access to similar sources of support, including students who are not part of a religious community or religiously affiliated.

As such, colleges and universities can implement a range of initiatives in terms of services and support. These may include expanding mental health services and resources, offering virtual counseling options, providing mindfulness and stress management programs, and promoting inclusive non-religious sources of support and community engagement for non-religiously affiliated students. While some institutions have made efforts to support students in this regard during the pandemic, there is room for improvement in addressing the unique challenges of the pandemic, especially for non-religiously affiliated students.

The outcomes of this study hold significant promise in enhancing the identification of college students who may be at heightened risk for mental health challenges, thereby offering a pivotal

contribution to the realm of student well-being. By establishing the protective role of religious affiliation and the mediating influences of positive religious coping and religious support on symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD), this research will hopefully aid in developing more targeted and effective screening protocols for mental illness. Institutions of higher education, armed with a nuanced understanding of the protective factors at play, could implement early intervention strategies to identify and assist students who may be struggling with their mental health. This could involve tailored outreach efforts to religiously affiliated students as well as the incorporation of culturally sensitive mental health services that integrate positive religious coping strategies. Moreover, the insights obtained from this study could catalyze the development of evidence-based coping and support programs that draw from religious and spiritual frameworks, potentially yielding more holistic and resonant approaches to mitigate the adverse effects of stressors and foster emotional resilience in college students.

While they are not necessarily identified as at-risk, it is still essential to consider intervention strategies tailored to non-religiously affiliated students to improve their mental well-being, as they reported more symptoms of psychopathology compared to religiously affiliated students. One potential intervention strategy is the development and promotion of secular support communities or groups that can offer a sense of belonging and social support similar to what religious communities provide to their members. Another potential intervention strategy could involve implementing mental health education programs that address the unique needs and challenges of non-religiously affiliated students, including information and coping strategies for managing stress, anxiety, and trauma without utilizing religious coping and support. Some examples of secular coping practices include mindfulness, yoga, or other relaxation techniques. Moreover, mental health professionals and counselors could be trained to be sensitive to the

diverse belief systems and worldviews of non-religiously affiliated students, ensuring that they receive culturally competent care. By creating secular support communities, offering mental health education programs, and promoting secular well-being practices, educational institutions and mental health professionals can contribute to the well-being and mental health of non-religiously affiliated students, narrowing the gap in mental health outcomes between religiously affiliated and non-religiously affiliated individuals. For religiously affiliated and non-religiously affiliated students, the study's findings have the potential to foster a more compassionate and comprehensive approach to student well-being by better identifying those in need and empowering institutions to offer effective, contextually relevant support.

Limitations

Several limitations should be considered when interpreting the results. With a majority White female undergraduate student body in the fall 2020 and spring 2021 semesters at East Carolina University, the study may be considered representative of ECU's undergraduate student body at the time (East Carolina University, 2022). However, the study's reliance on a sample drawn from a single university presents a limitation to the generalizability of its findings. The participants were exclusively recruited from a specific southeastern public university, which might not adequately represent the diverse landscape of college students across different institutions and regions. Consequently, the outcomes of the study may not be universally applicable to the broader college student population. Variations in demographics, cultural backgrounds, academic pressures, and individual experiences across universities could contribute to distinct patterns of religious affiliation, coping mechanisms, and mental health outcomes. Therefore, caution is warranted when attempting to generalize the study's results beyond the boundaries of this university.

Furthermore, the study's cross-sectional design introduces limitations in establishing cause-and-effect relationships among the variables under investigation. Cross-sectional studies provide a snapshot of data at a specific point in time, making it challenging to ascertain the temporal sequence of events. In this study, while relationships between religious affiliation, coping, support, and mental health symptoms were examined, it is not possible to determine the direction of causality. For instance, the study's findings regarding the potential mediating role of positive religious coping and religious support in reducing symptoms of PTSD for those who are religiously affiliated do not imply a definitive causal relationship. It is plausible that individuals with better mental health may be more inclined to engage in positive religious coping or seek out religious support. Longitudinal or experimental designs are necessary to establish a clearer understanding of the causal relationships among these variables.

The limitations of the study stem from its restricted sample from a single university, which may hinder generalizability to the wider college student population. Additionally, the cross-sectional design prohibits the establishment of definitive cause-and-effect relationships. Acknowledging these limitations is crucial for interpreting the study's findings accurately and for guiding future research endeavors in this domain.

Future Research

The study opens several avenues for future research. Firstly, further exploration into the broader concept of spirituality, as compared to the more structured constructs of religion (including affiliation, coping, and support), could provide valuable insights into its relationship with mental health symptoms and potential underlying mechanisms. Investigating how spiritual beliefs and practices intersect with psychological well-being and symptoms could yield a more comprehensive understanding of the impact of spiritual experiences on college students' mental

health.

Second, employing a random selection of participants in a multi-site or national study would enhance the external validity of the findings. This approach could address the current study's limitation of limited generalizability due to its single university sample. By encompassing a diverse array of colleges and universities, a more representative sample would enable researchers to capture a wider range of cultural, demographic, and regional perspectives, potentially revealing more complex relationships between religious affiliation, religious coping, religious support, and mental health. Third, incorporating clinical assessments alongside self-report measures could enhance the validity of future findings as well as yield a more clinically informative picture. This approach would address the current study's reliance on self-reported symptoms and potentially provide a more nuanced view of the relationships under investigation.

Lastly, the adoption of quasi-experimental and longitudinal designs represents another direction for future research. Such designs could help establish causal relationships between religious variables, support and coping mechanisms, and mental health outcomes. By tracking changes over time, researchers could uncover the dynamic interplay between these factors, providing deeper insights into how they contribute to college students' mental well-being.

Conclusion

This study's findings emphasize the protective nature of religious affiliation with the psychopathology symptoms of college students during the pandemic, consistent with previous research on the "faith factor." The evidence presented here suggests that religiously affiliated college students report fewer symptoms of depression, anxiety, and PTSD when compared to non-religiously affiliated students. This study also highlights the mediating roles of religious support in the relationships between religious affiliation and all three mental health outcomes,

and of positive religious coping in the relationship between religious affiliation and PTSD. The mediating role of positive religious support reinforces the importance of religious communities in promoting better mental health for religiously affiliated college students. Additionally, the study's revelation about positive religious coping's specific mediation in the context of PTSD aligns with the notion that this coping mechanism might be particularly impactful during traumatic experiences. In navigating the complexities of mental health support in institutional settings, this research offers valuable insights into the protective role of religious affiliation and its associated mediating mechanisms of religious support and positive religious coping in promoting the psychological well-being of college students during the pandemic.

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Appendix A

IRB (Institutional Review Board) Approval Letter

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284**
rede.ecu.edu/umcirb/

Closure Notification

From: Social/Behavioral IRB
To: Sarah Vanacore
CC: Christyn Dolbier 5/10/2022
Date: FR00002097
Re: 2022 Final Report for UMCIRB 20-001928
Posttraumatic Stress Disorder Specific to the Coronavirus Pandemic: Risk and Protective Factors Among College Students

I am pleased to inform you that your request to close this study has been approved on 5/10/2022.

It is your responsibility to ensure that you retain all research related documents, including the consent form(s), if applicable, for a period of no less than three years. If you have any questions or need for any reason to re-open this research study, please contact the UMCIRB office prior to implementing any research actions.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00000705 East Carolina U !RB #1

(Biomedical) IORG0000418

IRB00003781 East Carolina U !RB #2

(Behavioral/55) IORG0000418

Appendix B

Survey

***Patient Health Questionnaire-8 (*Kroenke, et al., 2009)**

This measure consists of the survey items used to assess symptoms of depression in this study.

Over the last 2 weeks, how often have you been bothered by any of the following problems?

1. Little interest or pleasure in doing things

2. Feeling down, depressed, irritable, or hopeless

3. Trouble falling or staying asleep, or sleeping too much

4. Feeling tired or having little energy

5. Poor appetite or overeating

6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down

7. Trouble concentrating on things, such as schoolwork, reading or watching television

8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual

***Generalized Anxiety Disorder-7* (Spitzer, et al., 2006)**

This measure consists of the survey items used to assess symptoms of anxiety in this study.

Over the last two weeks, how often have you been bothered by any of the following problems?

1. Feeling nervous, anxious, or on edge

2. Not being able to stop or control worrying

3. Worrying too much about different things

4. Trouble relaxing

5. Being so restless that it is hard to sit still

6. Becoming easily annoyed or irritable

7. Feeling afraid, as if something awful might happen

Posttraumatic Stress Disorder Checklist **(Weathers et al., 2013)**

This measure consists of the survey items used to assess symptoms of PTSD in this study.

This set of questions asks about problems you may have had resulting from the coronavirus situation.

The coronavirus situation has negatively affected some people more than others. We are interested in **very stressful experiences <u>resulting from the coronavirus situation</u>, specifically those involving actual or threatened death, actual or attempted suicide, serious illness or injury, or sexual violence**.

This very stressful experience could be something resulting from the coronavirus situation that **happened to you directly, something you witnessed, or something you learned happened to a close family member or close friend**.

Also, this **could be a single event** (for example, a loved one who is at high risk for death if they get the coronavirus) or **multiple similar events** (for example, repeated abuse in the place you had to move to because of the coronavirus).

Keeping this <u>stressful experience(s) resulting from the coronavirus situation</u> in mind, read

each of the problems on this page and then select one of the circles to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
10. Blaming yourself or someone else for the stressful experience or what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities that you used to enjoy?
13. Feeling distant or cut off from other people?
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or

have loving feelings for people close to you)?

15. Irritable behavior, angry outbursts, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?
17. Being “super alert” or watchful or on guard?
18. Feeling jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

Brief RCOPE **(Pargament, et al., 2011)**

Positive Religious Coping Subscale

This measure consists of the survey items used to assess positive religious coping in this survey.

Think about how you have tried to understand and deal with major problems in your life over the past month. To what extent is each involved in the way you cope?

Please note: We are using the terms “God or the spiritual being(s) in which I believe;” however, we realize that these terms may not apply to your specific beliefs or practices. You may substitute the name of your choice (e.g., Allah, G-d, gods/goddesses, etc.

1. Looked for a stronger connection with God or the spiritual being(s) in which I believe.
2. Sought God’s or the spiritual being(s) in which I believe’s love and care.
3. Sought help from God or the spiritual being(s) in which I believe in letting go of my anger.

4. Tried to put my plans into action together with God or the spiritual being(s) in which I believe
5. Tried to see how God or the spiritual being(s) in which I believe might be trying to strengthen me in this situation.
6. Asked forgiveness for my sins.
7. Focused on religion or my spiritual beliefs to stop worrying about my problems.

Modified Brief Multidimensional Measure of Religiousness/Spirituality **(Fetzer Institute, 1999)**

This measure consists of the survey items used to assess religious affiliation and support in this study.

Religious Preference

What is your religious or spiritual preference? [with "please specify branch" after each]

Atheist, Agnostic, or No Religion

Baha'i

Buddhist

Christian, Protestant (e.g., Methodist, Lutheran, Baptist)

Christian, Eastern Orthodox

Christian, Roman Catholic

Christian, other (e.g., Mormon

Hindu

Jewish

Muslim

Shinto

Taoist

Wiccan or other ritual magic

Another religious or spiritual group not specified here (please describe):

Religious Support

These questions are designed to find out how much help the people in your religious or spiritual community would provide if you need it in the future. Examples of community include a church, synagogue, mosque, temple, or other groups that you are involved in with regard to your religion or spirituality.

24. If you were ill, how much would the people in your religious community 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 religious community be willing to give you?

1 - A great deal

2 - Some

3 - A little

4 - None