Fall 2023

Spirituality as a Coping Mechanism for Academic Stress

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Senior Project Submitted to

The Division of Science, Math, and Computing of Bard College

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December 2023

Table of Contents

Abstract

Current research has emphasized the adverse effects of stress on well-being and mental health. This paper explores the aspect of stress and well-being in the college student population. Students face multiple stressors during their academic life, such as isolation from family, academic stress, social interactions, financial difficulties, love, and a list of requirements for their future careers. During this period, individuals develop skill sets, ideas, mental prototypes, and coping mechanisms that may be used as a guiding point and retrieved later in life. Coping is mobilizing ideas and behaviors to manage internal and external stressful events. It is a word used to distinguish conscious and intentional mobilization of activities from 'defense mechanisms,' which are subconscious or unconscious adaptive responses to reduce or tolerate stress. This paper aims to explore the role of spirituality as a coping mechanism in the undergraduate population and identify if spiritual practices can be an efficient "tool" for academic success. Baseline stress levels and spiritual scores will be determined during the second week of classes, and additional stress levels will be measured right before the first midterm. The study predicts that students who engaged in spiritual activities would show lower stress responses compared to students who did not engage in spiritual activities.

Emerging adulthood is a stage of life marked by identity discovery and transformation as young individuals consider many options in love, employment, and worldviews (Leung & Pong, 2021). In this stage, young individuals explore their identities by seeking purpose and personal meaning while balancing numerous financial, academic, and job obligations. For most young people in developed nations, the years from their late teens to their twenties are a time of tremendous transformation and significance (Arnett, 2000). During this period, many young individuals gain the degree of education and training to serve as the foundation for their future earnings and occupational accomplishments throughout the rest of their professional ventures. Emerging adulthood is a developmental period where social and intimate values can be developed; during this period, humans learn how to cope with stress efficiently. They also establish an independent set of values, which may be retrieved later in life (Arnett, 2000).

Contemporary emerging adults, sometimes known as the "Gen Z" generation, face significant social and economic challenges. For example, to be considered a qualified candidate for occupations formerly deemed entry-level, the labor market today demands potential employees to have both a four-year degree and experience in their field of interest. Additionally, tuition costs have constantly risen, adding to the financial burden of earning a four-year degree. These varied demands have highlighted the need to investigate the influence of stress and the ability to manage stress in the college setting, mainly as emerging adulthood is seen as a critical stage of development for forming good habits and lifestyle patterns (Arnett, 2000). In addition, emerging adulthood serves as a crucial period for developing stress-coping skills.

Stress is described as an organism's physiological and emotional response to its surroundings or events, either in the presence of or by recalling a psychological or physical stressor (Rabkin & Struening, 1976). In today's educational environment, emerging adults face higher-than-average

stress levels, yet they lack access to services to help them deal with such an environment (Brougham et al., 2009). Additionally, given the different internal and external demands put on students, stress has become a component of their academic life. College students may be especially prone to issues linked with academic stress because they are going through personal and social transformations. Therefore, comprehending the causes and consequences of academic stress is critical to devising appropriate and effective therapeutic measures.

According to Lee and Larson (2000), academic stress is caused by environmental stressors, student assessments, and reactions. Academic stress has been linked directly to depression among students; for example, Zhang et al. (2022) demonstrated that adolescents who encountered academic stress were 2.4 times more likely to exhibit depressive symptoms than adolescents who did not experience academic stress.

Epidemiological research suggests that having more stressful events and reporting high-felt stress over a long period are linked to poor mental and physical health (Zhang et al. 2022). Furthermore, the link between higher stressor exposure and increased disease risk has been reproduced using a variety of stressor exposures. A study by Brougham et al. (2009) demonstrates that students may experience stress differently; according to their research, 88% reported moderate to severe stress, with 44% reporting moderate to severe anxiety and 36% reporting moderate to severe depression. Female, rural, low-income, and academically underachieving students were most prone to these mental health difficulties. Nevertheless, it should be noted that stress experienced, whether academic, social, or financial, has the same responses in the body. The stressors activate the hypothalamic-pituitary-adrenal (HPA) axis, which is shown to be a key component in cortisol control; excess amounts of cortisol tend to be disturbing for the body and are linked to multiple components contributing to mental illness.

This is primarily due to the adreno-medullary system, part of our nervous system's sympathetic division, and the adrenocortical axis, which results in the "fight or flight" response (Bourne & Yarosh, 2003). Heart rate, blood pressure, respiratory rate, increased blood flow to skeletal muscles, and other physiological changes can be detected in the body due to stress.

The hypothalamic-pituitary-adrenal (HPA) axis is one of the most commonly referred systems linked directly to physiological changes and is activated as a critical hormonal response to homeostatic strain (stress). All types of stressors generally cause some form of HPA axis alteration, which is a characteristic of the physiological stress response. The HPA axis mobilizes energy reserves by releasing glucocorticoids to ensure that the organism has the resources to respond to a genuine physical injury or prepare for an anticipated threat. Proper stress response regulation is crucial since improper or extended HPA axis activation is energy-expensive and associated with various physiological and psychological illnesses (Herman et al., 2016). The HPA axis is just one of many stress-reactive systems. Stress, for example, stimulates the autonomic nervous system, boosting sympatho-adrenomedullary drive, resulting in a broad response that might optimize survival in the face of adversity (increased heart rate, higher blood pressure, increased hepatic glucose production, and so on). Furthermore, various additional systems have temporal linkages to stressful stimuli, such as prolactin release, gonadal steroid hormone release, and circulating IL6 levels. As a result, while significant, HPA axis activation is only one of several physical responses to stress (Herman et al., 2016).

According to the peer-reviewed Journal "Development of Psychopathology" published by Cambridge University, the functioning of the HPA axis affects children's school adjustment. Furthermore, the student's HPA axis reaction to the beginning of school moderated the intervention's influence on school adjustment. According to Smith et al., (2023), when cortisol

levels in hair are monitored simultaneously (3 months), they are connected to cumulative stressor exposure, rather than perceptions, which are reflected in HPA axis activity. Hair samples may give researchers a window into the past by allowing them to quantify cortisol production before, during, and after the initiation of a chronic stressor.

That said, while the stress experience is the same on a fundamental neural level, the stress response is quite individual. For instance, while financial stress would activate HPA and cause anxiety, frustration, and a possible sense of general alertness, the response to the stress, in other words, the behavior promoted by stress, will vary from person to person. Each external demand is classified as a danger or a challenge, and those who believe in their abilities are more likely to classify the demands as a challenge rather than a danger. This idea suggests that a person's confidence in managing a specific scenario influences whether a task is stressful or frightening rather than a challenge.

The argument should also consider stress levels, while excessive overflow of cortisol is linked to a lack of concentration and motivation. At the same time, the lack of cortisol also has unfavorable effects on the organism. Such a relationship between stress and performance can be demonstrated via The Yerkes-Dodson Law. Yerkes and Dodson (1908) suggest that there is a relationship between performance and arousal. Increased arousal can help improve performance, but only up to a certain point. At the point when arousal becomes excessive, performance diminishes. Therefore, the idea of the optimal stress level for an academic setting varies within different populations. It is also essential to recognize that reduced stress does not guarantee that students will do better; in these conditions, they may regard activities as unchallenging and grow easily bored (Reddy et al., 2018).

Among the characteristics that academic stress may impair are self-efficacy expectations, which are regarded as one of the most important drivers and predictors of student engagement, perseverance, and academic achievement. According to the American Psychological Association , *self-efficacy* is defined as an individual's conviction in his or her ability to carry out the actions required to achieve particular performance goals (Carey et al., 2009). In the same line of thought Julier Clerge (2018) argues that self-efficacy has emerged as a highly effective predictor of students' motivation and learning during the last two decades. Self-efficacy varies conceptually and psychometrically from comparable motivational variables such as result expectancies, self-concept, and locus of control as a performance-based measure of perceived competence. However, researchers simultaneously validated its discriminant and convergent validity in predicting typical motivational outcomes such as students' activity choices, effort, and emotional reactions. Although *self-efficacy* has traditionally been defined as an expectation strongly linked to a specific task or situation, several studies have shown the existence of a more generalized belief—that is, general self-efficacy—which is perceived competence in the face of a wide range of demands (Scholz et al., 2002).

Furthermore, it has been discovered that self-efficacy beliefs are sensitive to modest changes in students' performance contexts, interact with self-regulated learning processes, and moderate students' academic progress. Self-efficacy may be derived from four sources, according to Pfitzner-Eden (2016): mastery experiences, vicarious experiences, verbal persuasion, and physiological and emotional states. Therefore, all four aspects of self-efficacy are essential and directly related to academic environments. However, while self-efficacy has been demonstrated to be a valuable component for predicting student performance, it is not the center of the study, and other common mechanisms actively involved in stress navigation should be considered.

With the development of cognitive and social psychology research, the current line of thought has evolved towards more general coping models (Bonanno & Burton, 2013). For example, according to the same research it has long been considered that problem-focused coping methods are far more adaptable than emotion-focused coping methods. For clarity purposes, problem-focused coping entails confronting stress and taking action to address the underlying cause. In contrast, emotion-focused coping includes managing your feelings and your response to them. For example, problem-focused coping involves planning, problem-solving, or eliminating the stressor. Emotion-focused coping is attempting to cope with your emotional reaction to the stressor. Emotion-focused coping is utilized when you strive to diminish, eliminate, or merely endure your emotional response to a stressor. Some examples are withdrawal, expressing anger and frustration, seeking emotional support, diversions, rumination, and acceptance (accepting that the situation will always remain). Recent research on emotion regulation has concentrated on complementary but conceptually separate techniques targeted primarily at regulating emotion's frequency, experience, and expression (Bonanno & Burton, 2013).

The idea has been demonstrated by Bonanno and Burton (2013), who argue that the changing nature of contextual demands over time significantly impacts the diversity in efficacy of regulation techniques. For example, the death of a loved one exposes grieving individuals to a diverse and changeable set of situational demands. This process of dealing with loss accommodates these contrasting needs, in which different coping methods become more or less required and successful over time. Folkman and Moskowitz (2004) discovered in reviewing the coping literature in general that a specific coping technique may be beneficial in one context but not in another.

The simple fact that coping techniques are defined as reactions to a specific issue reveals their situational uniqueness. This has resulted in the recent acceptance of a coping method based on the assumption that a person may mix several techniques, utilizing one or the other depending on the unique scenario they are experiencing (Bonanno & Burton, 2013). Accordingly, the adaptability will be maximized if the individual uses problem-focused coping strategies (e.g., planning and seeking instrumental support) or emotion-centered strategies (e.g., positive reappraisal and seeking emotional support) based on the perceived controllability of the stressor. This study will aim to demonstrate the role of spirituality as a coping mechanism and set a framework for identifying spirituality as an emotion-centered strategy similar to reappraisal and emotional support.

While broadly speaking, there are two general types of coping strategies - problem-focused and emotion-centered, we should be aware of the argument of contextuality. While problem-focused coping strategies may show higher benefits for general stress environments, one has to be aware of what would hold in university settings. A study by Vikas S. Minchekar (2017) revealed that coping mechanisms substantially impacted the academic stress level of college students. In fact the follow up Scheffe's post-hoc test found that students who do not use any form of coping mechanisms suffer greatly from academic stress. Furthermore, students who employ emotion-focused coping techniques during test periods cope with stress better than those who utilize problem-focused solutions. In order to frame spirituality as an emotion-centric mechanism, the following paragraphs will attempt to make specific distinctions between the theological and the emotional component of spirituality.

Emotion-focused coping refers to thoughts and behaviors used during stressful circumstances to lessen the physical and psychological reactions to stress without resolving the underlying

issue. It entails emotional processing (the recognition, knowledge, and acceptance of one's feelings) and emotional expression (the vocal or nonverbal externalization of one's emotions). Endler and Parker (2016) stated that emotion-focused coping might include emotional expression, emotion-oriented, and disengagement or avoidance. Both theoretical and empirical data accepted this distinction. Emotional coping techniques, such as venting, entail interacting with the stressor, whereas avoidance coping strategies, such as denial, involve retreating from the stressor. Endler and Parker (2016), suggest that specific emotion-based methods, such as positive reframing and development or acceptance, may help individuals adjust to the circumstance and occasionally progress towards problem-focused coping. Two examples are cognitive restructuring, which includes questioning and replacing negative thinking patterns with good ones, and mindfulness, which involves concentrating on the present moment and accepting thoughts and feelings without judgment. Therefore, the paper will introduce the transactional stress and an enlarged version of this model, the meaning-making coping model, which focuses more explicitly on components of meaning in coping, in order to frame spirituality as an emotion based coping model.

According to modern research, mindfulness as an intervention in mental health is increasingly being utilized for the younger demographic (Zandi et al., 2021). According to the same study, mindfulness is being present with all that is right now without judging or commenting on what is going on; it involves assisting the individual in understanding that both good and painful feelings can occur. This form of treatment involves different meditations, depression education, body assessment exercises, and many mindfulness activities that demonstrate the link between mood, thoughts, feelings, and bodily sensations. In a cognitive environment, mindfulness develops thinking abilities. Zandi et al., 2021, observed that

mindfulness training accounted for 63% of the difference in emotion-oriented coping ratings between the experimental and control groups according to the Eta coefficient. Mindfulness training has a considerable influence on emotion-oriented coping abilities in this way. Therefore, mindfulness is an emotion-based coping strategy that may be used to decrease or reframe a relationship with a particular stressor. Such reframing has been quite beneficial in the studies regarding transactional stress as defined by Lazarus and Folkman's (1987) transactional model of stress and coping, which defined coping as a process including both cognitive and behavioral reactions that individuals utilize in an attempt to manage internal and external pressures thought to exceed their resources.

According to the transactional stress and coping model, people's coping processes follow a stressor-impact adaptation (Endler & Parker, 2016). This paradigm focuses on cognitive assessments of the circumstance and the coping mechanisms that result from these assessments. Making initial attributions about why the event occurred, establishing the amount to which the occurrence is dangerous, controllable, and predictable, and choosing what can be done are all part of cognitive evaluation. These evaluations, in turn, impact the individual's coping attempts. In terms of previously discussed problem-focused coping and emotion-centered coping, this idea plays out in the following way: Although some types of emotion-focused coping, mainly talking with others about stressful experiences, help cope (Lee and Larson, 2000), other emotion-focused strategies, such as avoidance, are associated with continued distress, whereas problem-focused coping is more consistently associated with better adjustment outcomes. However, this does not indicate that the transactional stress model can be considered a complete system; the restrictions of this theory should be noticed.

Some research indicates that the transactional stress model is restricted in its application to the study of adjustment to catastrophic traumas and loss (Lazarus & Folkman 1987). Coping in such situations, which are not accessible to "problem-solving" procedures, demands a significant amount of intrapsychic cognitive processes or "meaning-making" because individuals can shift the meaning of the stressful experience through cognitive adaptation. The model by Park and Fulkman 1997, differentiates between two levels of meaning: Systems of global meaning and the evaluated meaning of single occurrences. Worldwide meaning encompasses worldwide views as well as global objectives. *Global beliefs* are the fundamental internal cognitive frameworks people build about the nature of the world. These structures direct people throughout their lives by affecting their primary ways of interpreting reality and organizing their long-term aspirations. Appraised meaning of events include appraisals of events as a loss, threat, or challenge, as well as initial causal attributions explaining why the events occurred (e.g., God's will, coincidence), determination of the extent to which the events are inconsistent with one's global system of meaning, and decisions regarding what can be done to cope with the event (Elizabeth et al., 2008).

According to the meaning-making coping model, this disparity between assessed and global meaning is a very unpleasant situation characterized by a sensation of loss of control, predictability, or comprehensibility of the environment. To recover, the gap between the perceived significance of the event and the fundamental beliefs and aspirations it has disrupted must be narrowed (Park & Folkman, 1997). People lessen this disparity by modifying their evaluated meaning of the circumstance, changing their overall beliefs and ambitions, or both. Meaning-making coping is sometimes defined as seeking to perceive the incident in a more positive perspective or cognitively "working through" the event. Following the loss of a loved

one, for example, a person may come to see the occurrence as the hand of a loving God or may reinterpret the catastrophe as a chance to acquire new coping skills or build new sources of social support.

Religion, which may be characterized as "a search for significance in ways related to the sacred" (Pargament, 1997, p. 32), is fundamental to people's model of creating a meaning, however its importance varies widely from person to person (Pargament, 1997, p. 32). Religious meaning creation systems may be complex, informing both global beliefs and aims. Some theories claim that religion develops from a human urge to comprehend the most profound challenges of existence (Pargament, 1997, p. 98). Religion is sometimes characterized as the primary example of a belief system that gives methods to comprehend pain and loss, regardless of whether it originates expressly out of this desire for meaning or serves to provide it for those who embrace religion for other reasons. Religion is a significant philosophical direction for many individuals, influencing their view of the universe and making reality and suffering intelligible and acceptable (Pargament, 1997). Religion typically acts as an individual's basic schema, guiding views about the self, the world, and their relationship (McIntosh, 1995) and giving comprehension of both routine and spectacular events. Because religion serves as the foundation for many people's global beliefs and goals, religious meaning frequently plays critical roles throughout the coping process (McIntosh, 1995). The degree to which religion is engaged in a given individual's dealing with a particular occurrence is primarily determined by the degree to which religion is part of their orienting system. Religion is frequently involved in causal attributions following traumatic events (Bulman and Wortman, 1977). For example, in their study of spinal cord injury victims, Bulman and Wortman (1977) discovered that over a third of the sample spontaneously mentioned God's will as the reason for their injury.

Aside from that, the same occurrence might be interpreted quite differently depending on an individual's religious beliefs. Some people feel that God would not damage or bring upon them more than they could bear, while others believe that God is communicating something significant through the occurrence or that the incident is a punishment from God (Furnham & Brown, 1992). For example, a study of hospice carers discovered that some saw their condition as part of God's design or as a method of obtaining strength or knowledge from God. In contrast, others saw it as an unfair punishment or God's abandonment (Furnham & Brown, 1992).

Stress influences everyone's life; however, seeing stress as an adversary is incorrect since it is frequently beneficial or harmful. Stress is essential for learning and navigating different coping mechanisms and self-efficacy. In other words, how people deal with or react to stress influences how it affects their lives. Therefore, viewing how college students use coping mechanisms to deal with academic stress would be interesting. In recent years, there has been a rising interest in determining the extent to which individuals may mix multiple coping techniques and the adaptive repercussions of this flexibility. Interpersonal relationships, personal circumstances, and the university environment can be sources of academic stress (Arnett, 2000). Kuh (2000) emphasized the importance of a supportive academic environment that helps students achieve academically and socially. This type of setting allows students to satisfy non-academic expectations while also providing assistance that strengthens the student's relationships with fellow students, teachers, staff, and institutional management. However, balancing the new found environment and maintaining good academic achievement might be difficult.

Previous research has led to a better understanding of coping mechanisms and the behavioral response to stressors (Brougham et al., 2009). These behavioral adjustments are taught through modeling, societal expectations, and personal experiences as part of development (Brougham et

al., 2009). While under stress, people use coping techniques gained from earlier experiences to better deal with current pressures (Brougham et al., 2009). Depending on how the action relieves stress, coping mechanisms can be beneficial or harmful. In other words, when people are exposed to a stressor, they deal with it based on their coping styles. Coping styles are a collection of generally consistent features that govern an individual's behavior in reaction to stress. They are constant throughout time and settings. Coping is often separated into reactive coping (a reaction to the stressor) and proactive coping (aiming to neutralize future stressors) (Brougham et al., 2009). People with predominantly proactive coping styles function better in stable circumstances because they are more regimented, inflexible, and less reactive to stimuli. In contrast, reactive people perform better in more unpredictable environments (Brougham et al., 2009).

Positive coping methods reduce stress by breaking it down into manageable chunks. In contrast, harmful coping mechanisms ignore or dismiss the stressor (e.g., denial, overeating, and procrastination). For example, studies have found that students who are stressed out are more likely to eat junk food, are less likely to exercise, and sleep less than their counterparts who are not stressed out (Brougham et al., 2009). Additionally, recent research has suggested that spirituality-based responses may be efficient, positive coping mechanisms in reaction to stress and connected with increased life satisfaction (Leung & Pong, 2021). Spirituality is a good predictor of life satisfaction and a possible mediator of stress, well-being, and beneficial health behaviors across studies (Leung & Pong, 2021). This study will consider one coping mechanism in particular: spirituality.

Nevertheless, more research must study these characteristics in the emerging adult population. Further research on spirituality and coping mechanisms has confirmed the association between

spirituality and beneficial health behaviors and the possible role of spirituality as a mediator for positive coping behaviors and coping mechanisms in response to stress. Researchers concluded that these data show that spirituality might lead to students using good stress management techniques. Although some researchers have used the terms spirituality and religion interchangeably, the two concepts are separate (Canda & Furman, 2004). Spirituality is described as the relationship one has with God, or whatever one considers his/her Ultimate, and how that relationship gives one a feeling of meaning, purpose, and mission in life (Canda & Furman, 2004). Spirituality refers to nature, music, art, family, community, or ideas and ideals that provide meaning and direction. Religion, conversely, is the concrete embodiment of the spiritual connection in the shape of particular beliefs and practices shared by others who have had comparable transcendent experiences. A study by Leung and Pong (2021) demonstrated how students who linked their academic achievement to their spirituality blamed their failure on a lack of spirituality. The research also revealed that spiritual strength helps college students build stronger resilience.

According to Phillip Sheldrake, Spirituality is now widely considered innate in all people, religious or not. This idea has a lengthy history. The term derives from Christianity. Initially, 'the spiritual' was contrasted with 'fleshly,' which signified worldly or hostile to God's spirit. Until the European Middle Ages, this disparity was typical. Today's spirituality is concerned with what is holistic, involves a search for meaning, is related to 'thriving,' and calls for a self-reflective existence rather than an unexamined life. Several religious spiritualities are included in this definition: Jewish, Christian, Islamic, Hindu, and Buddhist.

Similarly, the definition of "modern-day Western" spirituality can be traced back to Plato and, much like Sheldrake, can be considered as a form of search for meaning. Philosophers of

Western traditions portray Platonism as a spiritual tradition defined by a blend of philosophy and religion. The Platonistic concept holds that anything with individuality is changeable and belongs to the Lower Realm. However, God is an everlasting principle who radiates immutable intelligible Forms in the Upper Realm. According to Plato, ascension to heaven from the "cave" or world of shadows could occur only if the inverted soul was converted via "intellectual vision" or "ascetic paradigm." Plato is credited with inventing the modern notion of spirituality, which is now essential to all three monotheistic faiths.

Analytical philosophy of religion has historically concentrated nearly entirely on specific philosophical issues pertaining to religion. These include, but are not limited to, the presence of God and his qualities, the language used in religion, and the rationale behind religious beliefs. Many academics in the discipline have started interacting more closely with scientific findings. According to Sheldrake, as opposed to trying to provide a universal approach for every scenario in which the philosophy of religion and the sciences may interact, philosophers of religion would be better served by concentrating on specific and local issues. Progress in philosophy can only be achieved by using philosophical tools to study specific and well-defined concerns, as no one approach works for all philosophical problems, and scientific fields with religious implications also have different methodologies.

Spirituality and religion are two distinct ideas. According to Mikhael Sergev in his collection of essays "Theory of Religious Circles," Until recently, most analytic and continental Western philosophers understood spirituality as a religious term. Any nonreligious spirituality was either ignored or condemned as irreversibly ambiguous. This is a philosophical reaction to the growing number of spiritual but nonreligious people living in secular nations and the increased contact between many spiritual traditions in a globalized age. A diverse range of approaches (African,

Indigenous, Indian, Stoic, and Sufic viewpoints, as well as Western analytic and continental perspectives) offer new ideas, many of which are voiced by emerging voices. Similarly, the distinction between spirituality and religiosity can be observed in various cultural and philosophical contexts.

It is critical to distinguish between religiosity and spirituality since they are different. However, an overlap certainly requires clarification; spirituality is the possession of religious principles and beliefs. A Buddhist, for example, will consider mindfulness practices part of their spirituality. Giving to the underprivileged is part of a Muslim's spirituality (zakat). Serving food to the homeless is part of a Christian's spirituality. The study of God is referred to as religiosity. It is generally an in-depth examination of a religious book. There are other approaches to this; for example, systematic theology, in which you create categories of common issues found in the text and then bring together what the entire text has to say about that subject area. However, theology is a separate field of study, and there are many more methods to analyze a given text than systematic theology.

It is important to have clarity while defining spirituality, religion, and faith. In modern everyday language these three names are used interchangeably. Each of these phrases, however, has its definition. For example, the idea of spirituality comprises over 13 conceptual components (Victor & Treschuk, 2019). It differs from religion and faith in that it is abstract and subjective. Spirituality may be defined as a connection with God, nature, others, and one's surroundings. Spirituality is related to life's quality and significance.

Conversely, religion is associated with traditional ideals and practices associated with a particular group of people or faith (Victor & Treschuk, 2019); according to the same source, Tradition, rules, and culture guide religion. Religion is described as a personal collection of

religious attitudes, beliefs, and practices and an institutionalized system of religious attitudes, beliefs, and practices. Religion is the worship or service to God or the supernatural. Religion and spirituality are frequently related to faith. Faith, which refers to one's relationship with God, is more personal, subjective, and profound than organized religion. A professional grasp of spirituality needs to be improved. It is critical that the holistic approach to nursing attempts to comprehend the notion of spirituality.

Defining these notions is challenging; also, it is impossible to establish a universal definition due to the diversity associated with both of these concepts. Spirituality may be represented through various religious practices, such as rituals and adhering to religious principles. Even persons who do not identify as religious might experience a spiritual dimension. According to researchers, the concepts of religion and spirituality are distinct (Fowler, 2017), and using the term religion synonymously with spirituality is erroneous.

Spirituality and religious belief studies include determining the association between religiosity and various health indices and strategies for incorporating religiosity into mental health intervention programs. At this point, it is essential to note that religion and spirituality are two distinct notions. Religion encompasses spiritual expression via membership in organized societies and traditions that share these ultimate concerns. Spirituality can be religious or nonreligious. The number of research looking at the psychological and psychosocial aspects of religion and spirituality in people's lives and the link between religiosity/spirituality and physical and mental health is growing. In this regard, the World Health Organisation made the first worldwide contribution in 2006 under quality of life research. This study investigated religion and spirituality as components of quality of life. Religion and spirituality significantly impact the

quality of life in all cultural situations, according to data collected from 18 different nations (Delle Fave et al., 2013).

The literature examines the idea of well-being under subjective and psychological well-being categories. The subjective judgment of one's life is called subjective well-being. This examination encompasses cognitive states or emotions such as marital, professional, and life satisfaction (Diener, 2000). Subjective well-being includes high levels of good affect, low levels of negative affect, and contentment in many aspects of life, such as employment, marriage, profession, and so on (Diener, 2000). Psychological well-being, on the other hand, is a concept based on an individual's psychological functioning and includes dimensions such as self-acceptance, having a 'purpose' in life, having positive interpersonal relationships, thinking and acting autonomously, environmental dominance, and personal development (Huppert, 2009). The current study aims to demonstrate that spirituality can be a helpful coping mechanism in an academic environment. Specifically, students with higher levels of spirituality will show lower levels of perceived stress and increased well-being and experience lower academic anxiety levels during an academic exam.

Method

Participants

Participants were recruited from a required psychological statistics course at Bard College, NY. All participants indicated their Gender and Age. The total of 7 participants (female 6, non binary 1) were recruited. Originally, we had 11 participants; however, while the first measure of the test was completed by all 11 participants, the second measure was only completed by 7 participants. One participant was excluded from the data set due to skipping the Daily Spiritual Experience scale. This resulted in a final sample of 6 participants.

Measures

Perceived Stress Scale (PSS)

The PSS is a widely-used psychological tool for assessing stress perception. It measures how stressful things in one's life are perceived to be. Items were created to capture how unexpected, unmanageable, and overburdened respondents' lives are. The scale also contains several straightforward questions concerning present stress levels. Cohen et al. (1983) established connections between the PSS and the following variables: stress, self-reported health, health service usage, health behavior measures, smoking status, and help-seeking behavior. However, because assessed stress levels are likely to be impacted by everyday difficulties, significant events, and changes in coping resources, the predictive validity of the PSS is projected to decline rapidly after four to eight weeks. The scale contains questions such as “in the last month, how often have you been upset because of something that happened unexpectedly?” Participants respond on a Likert scale ranging from 0 (never) to 4 (very often). Individual PSS ratings range

from 0 to 40, with higher levels indicating greater perceived stress. Scores ranging from 0 to 13 indicate little stress. Scores ranging from 14 to 26 indicate severe stress. Scores ranging from 27 to 40 indicate considerable perceived stress (Cohen, S., Kamarck, T., & Mermelstein, R. 1983).

The Daily Spiritual Experience Scale (DSES)

The DSES will be used to measure spirituality. The DSES is a 16-item self-report questionnaire that examines typical daily experiences of transcendent connection (Underwood 2011). Awe, appreciation, mercy, a sense of connection with the transcendence, and compassionate love are among the constructs included. The DSES also contains measurements of discernment/inspiration and a strong sense of inner serenity. Initially designed for health research, it is now widely utilized in the social sciences, program evaluation, and assessing changes in spiritual experiences through time. An example item includes, “I experience a connection to all of life”; participants respond on a binary scale with options of 0 (No) or 1 (Yes). Most analyses have found a unifactorial loading of all 16 items on a single factor, as well as high inter-item correlation using statistical approaches like Cronbach's alpha (Underwood 2002, 2011). This motivates the current research study to use a mean score for the entire DSES. The easiest approach to score the entire DSES is to use a mean score, which is calculated by summing all item scores and dividing by 16. For the following reasons, this is preferable than a total sum score: Using mean scores allows for more in-depth examination of individual items or subgroups, it can compensate for missing responses by dividing the total by the number of answered questions, and mean scores allow for easier comparison with other studies that used a 6-item version or only 15 items (Underwood 2011).

The DSESs psychometric qualities are high and generally unifactorial, with Cronbach's alphas ranging from 0.86 to 0.98. That being said, certain studies found two components of the

DSES (Underwood 2011). It should be noted that some research that found such a split employed the scale without the introduction lines that allow for substitute language for the term "God." The inclusion of introduction phrases and the availability of formats with alternate in-line wording assist to minimize this divide, although it may still exist. In the original DSES format, eight entries mention the word "God," whereas the other eight do not.

Academic Anxiety Scale

The Academic Anxiety Scale is a relatively new academic anxiety measure that was created and psychometrically verified in 2019 (Cassady 1996). Evidence from reliability and validity suggests that this scale is good in assessing university students' reported stressors that lead to academic anxiety. The scale contains questions such as “I often worry that my best is not as good as expected in school” and offers a Likert scale as input varying from 0 (not at all typical of me) to 4 (very typical of me). Scoring is as simple as adding each item (range = 11-44). Finch et al. (2023) established cut scores for several "levels" of Academic Anxiety depending on the total score: No Academic Anxiety - 11-14, Mild Academic Anxiety - 15-20, Moderate Academic Anxiety - 21-29, and High Academic Anxiety - 30-44.

Procedure

The study was approved by Bard College’s Institutional Review Board. Participants were recruited from the major-required statistics class, PSY 202: Design and Analysis in Psychology, offered in Fall 2023. At the beginning of the fourth class, students were introduced to a small slideshow presentation which contained basic information about the study, and asked students for participation. The presentation stated the hypothesis, and very brief mechanics of the study. Students were aware that upon participation they would have the opportunity to enter the

drawing to win one of the three $25 gift cards. They were also informed that the study would ask them to complete certain scales at two distinct time points, and specified the rough time period, such as second week of classes as a first measure and week before midterms as a second measure. After the lecture, on the same day, an email was sent to participants, asking them to join the study. The link contained a consent form, and after consent, a survey consisting of demographic information such as gender and age, the Perceived Stress Scale, the Daily Spiritual Experience Scale, and the Academic Anxiety Sale. The survey was made in Qualtrics (Provo, UT). Data analysis for the study used Jamovi (Version 2.3, The jamovi project, 2023). Analyses were pre registered and are included in the Appendix of this project.

Results

The significance level used in this study was $\alpha = 0.05$. The study also used 95% confidence intervals. A correlation matrix was created to see if spirituality was correlated with perceived stress and academic anxiety. The results did not indicate any significant association between spirituality and perceived stress at both time-points, with $r(4) = 0.573$, $p = 0.235$, CI [0.94, -0.44], [0.91, -0.62], for the first assessment and $r(6) = -0.207$, $p = 0.693$, CI [0.72, -0.87,], [0.94, -0.43] for the second assessment. In addition, the study examined the relationship between academic stress and academic anxiety individually for both time-points with the mean score on the perceived stress scale being 20.5 at time one and the mean score on the academic anxiety scale being 24.3 at time one (see table 1). For the first measurement of Perceived Stress and Academic Anxiety there was no significant effect observed with $r(6) = 0.736$, $p = 0.095$ and CI (0.94, -0.43). However, for the second measurement (the week before the midterm), the correlation between Perceived Stress and Academic Anxiety was statistically significant, with $r(6) = 0.944$, $p < 0.05$ (figure 1). The mean score for Perceived Stress was 22.6 at time two and the mean score for the academic anxiety scale was 25.5.

However, an interesting trend can be noticed during the second measure. While it makes sense that Perceived Stress and Academic Anxiety would be related due to stress of midterms, study observed a negative correlation direction between spirituality and perceived stress on the second measure $r(4) = -0.207$, $p = 0.693$. While the effect is not significant, the change of direction from positive (second week of classes) to negative (week before midterms), is an

interesting finding that would require further exploration. A similar effect was observed between spirituality and the second measure of academic stress with $r(4) = -0.071$, $p = 0.894$.

Descriptives

	N	Mean	Median	Mode	SD
Daily Spiritual Experience Scale	6	1.34	1.25	1.25 [a]	0.276
Academic Anxiety Scale (1)	6	24.33	23.50	15.00 [a]	7.257
Perceived Stress Scale (1)	6	20.50	21.00	14.00 [a]	4.231
Academic Anxiety Scale (2)	6	25.50	25.00	25.00	5.431
Perceived Stress Scale (2)	6	22.67	22.50	17.00 [a]	4.367

[a] More than one mode exists, only the first is reported

Table 1. Descriptive statistics (Mean, Median, Mode, and SD)

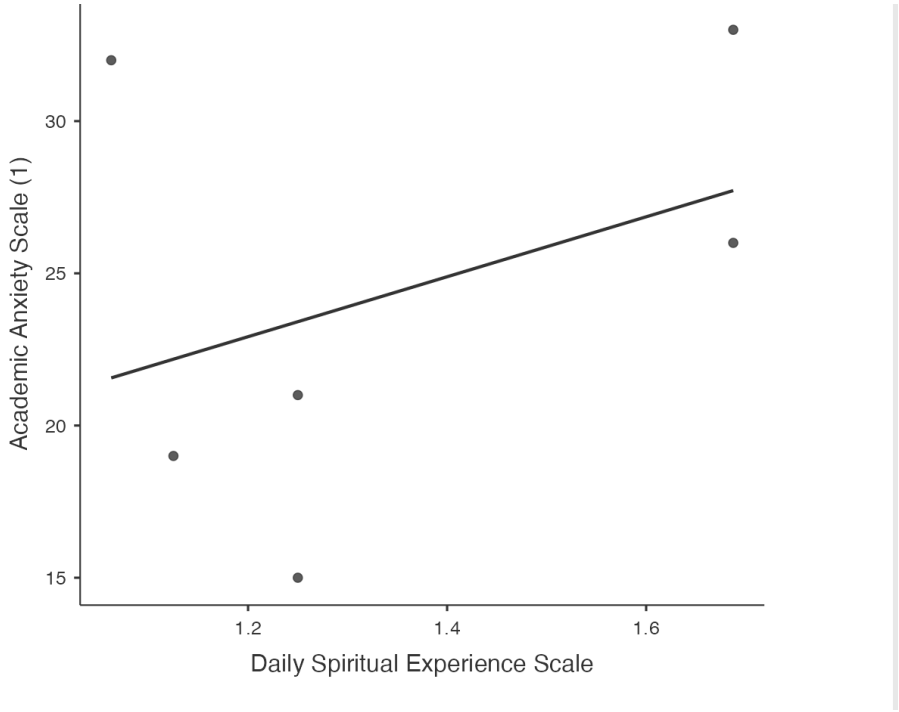

Figure 1.1 Spirituality, which was measured once during second week of classes and academic anxiety correlation time point 1.

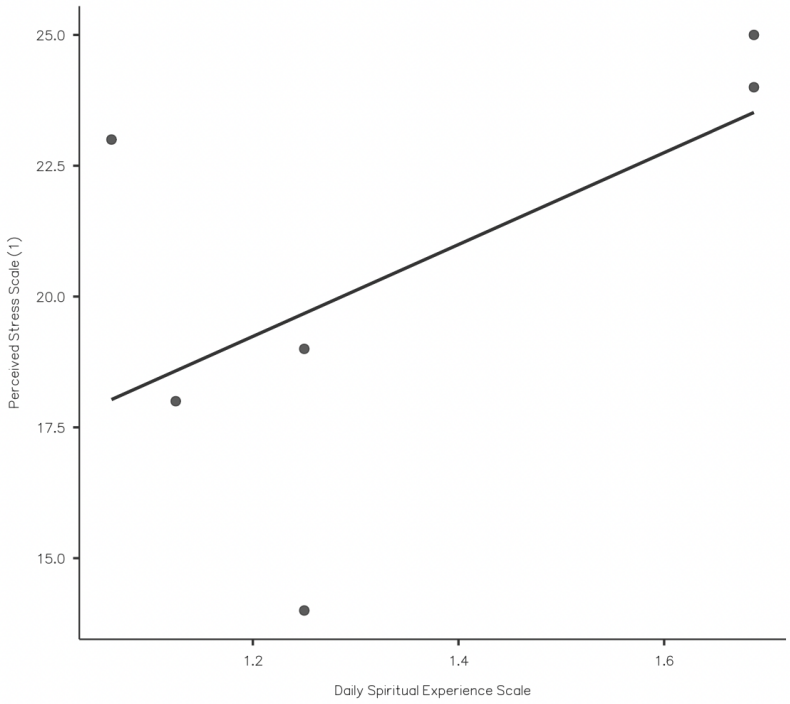

Figure 1.2 Spirituality, which was measured once during second week of classes, and perceived stress scale correlation at time point 1

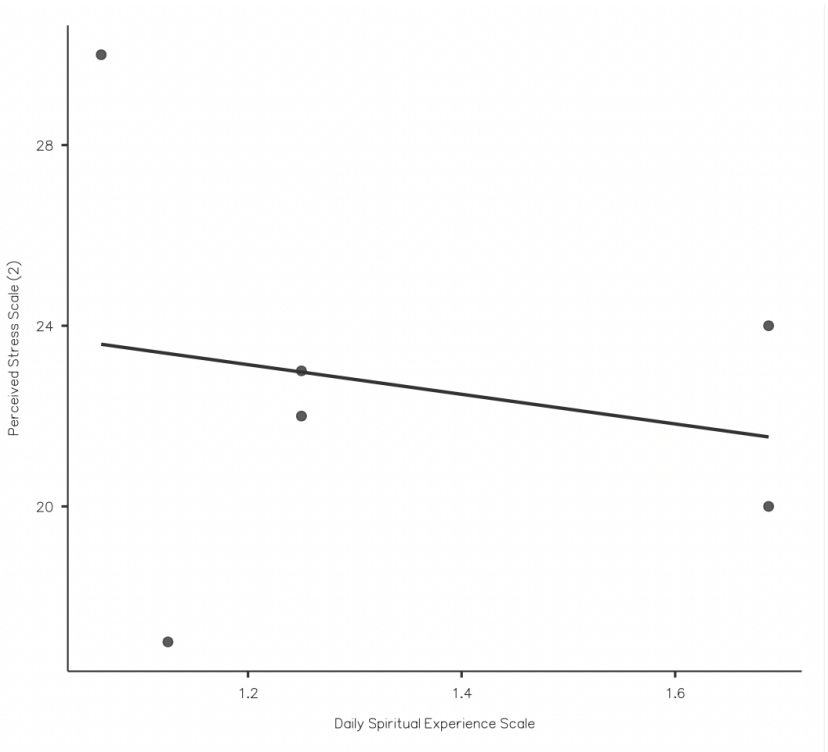

Figure 2.1 Perceived stress and spirituality (spirituality was measured once during second week of classes) one week before midterms at time point 2

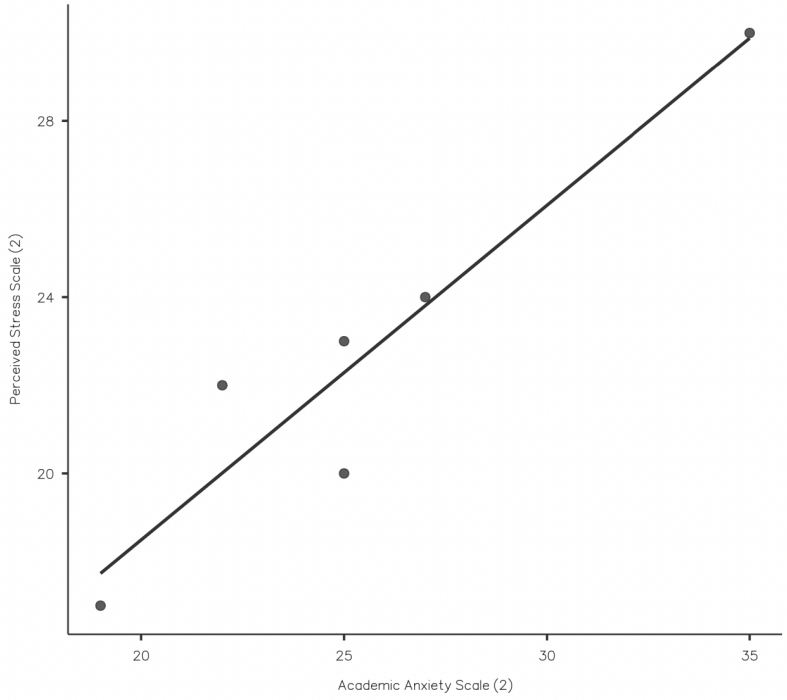

Figure 2.2 Perceived stress scale and academic anxiety scale one week before midterms time 2.

Discussion

The study found no relationship between the variables of interest. As described in the results section, there was no significant relationship between spirituality and perceived stress. Such conclusions are non-congruent with previous research stating that spirituality positively affects perceived stress (Arnett, 2020; Brougham et al., 2009; Kuh, 2000; Victor & Treschuk, 2019; and Fowler, 2017). While spirituality turned out to be a weak predictor for perceived stress at follow-up, the study did find a significant relationship between perceived stress and academic anxiety at follow-up. Despite the small sample size, a solid relationship was found between perceived stress and academic anxiety preceding the midterm exam.

However, the non-significance of the main results does not mean that the study would have been more effective. In other words, while research did not find evidence to support rejecting the null hypothesis, it did offer some strength and reinforced already existing ideas. For example, the relationship between perceived stress and academic anxiety is evident in previous literature (Arnett, 2020; Brougham et al., 2009; Kuh, 2000; Victor & Treschuk, 2019; and Fowler, 2017).

A strength of the study involves the stressors used (i.e., a naturalistic stressor), which were effective at increasing academic stress and may be used in other studies. The research was heavily concerned with providing participants with more natural rather than deliberate stress (i.e., not manipulating stress in the lab). Repeated evaluations in daily life—in our case, two measures collected, both occurring in the daily life experiences of a statistics class student—allow for collecting ecologically valid data on dynamic, within-person processes. These approaches are widely used to research stressors and stress responses and have a wide range of

value and applications. The field might benefit from more conceptual complexity in characterizing intraindividual stress reactions in everyday life.

Stress is described as an organism's physiological and emotional response to its surroundings or events, either in the presence of or by recalling a psychological or physical stressor (Rabkin & Struening, 1976). Making the distinction between exposure to stressful situations and reactions to these experiences is crucial when researching stress. Examples of such occurrences include losing your job or being divorced. The bodily, emotional, and cognitive reactions that these stressful experiences elicit are known as stress responses. However, such a definition should also emphasize the intensity of stress.

In our case, the stressor was a midterm exam, a short, naturalistic stressor of relatively low intensity. In the short term (acute), stress can make us feel more energized, remember things better, and be more driven to overcome obstacles (Yerkes & Dodson, 1908). Due to the nature of our experiment and the choice of a naturalistic stressor, its intensity may have needed to be increased to produce adequate stress levels (intensity and duration).

Behavioral coding, physiological markers, and self-report measures can all be used to quantify stress reactions. These reactions to stressful stimuli include feelings, thoughts, actions, and bodily reactions. Self-reports of perceived stress connected to a particular stressor or one's circumstances in life are one of the easiest ways to quantify stress reactions (Cohen et al., 1983). The 10-item Perceived Stress Scale is a self-report tool that gauges how overwhelmed a person feels by their present circumstances. Responses to acute stressors have been examined in regulated laboratory environments and real-world situations. Follow-up work might measure stress and its relationship to spirituality in a laboratory environment and observe if the intensity of the stress results in the perception of stress and spirituality. Additionally, follow-up studies

might use physiological markers of stress, such as inflammation and cortisol levels, rather than self-reporting while still using a naturalistic stressor.

Stress scales like the Trier Social Stress Test (TSST) provide a useful in-lab stressor (Kirschbaum et al., 1993). The TSST is a standardized laboratory stress test in which participants must complete mental arithmetic and deliver a speech to evaluators. Stress is brought on by having participants speak in an interview-style format in front of an interview panel that offers no support or criticism and then take an unexpected mental math exam. Such a laboratory-induced stressor might help demonstrate a relationship between spirituality and stress if it exists.

Additionally, the measurement of spirituality can be reconsidered. There are two ways to define spirituality in psychological/health research. Some scholars have described spirituality as "a relationship with a Transcendent Being (or whatever is considered ultimate), informed by a certain spiritual tradition, which fosters a sense of meaning, purpose, and mission in life" (Li et al., 2018). Other researchers define *spirituality* as "the feelings, thoughts, experiences, and behaviors that arise from a search for the sacred" (Hill et al., 2000). The current study tried to combine both definitions and to define spirituality as a relationship with a Transcendent Being (or whatever is considered Ultimate), without informed spiritual tradition, which fosters the feelings, thoughts, and experiences of finding peace and meaning in life. Participants were asked to frame spirituality according to their perception of the concept, whether they believed in God, spirits, the universe, crystals, etc.

The current study assessed spiritual beliefs with the Daily Spiritual Index Scale (DSES; Underwood, 2011), encompassing ideas like wonder, thankfulness, mercy, a sense of oneness with the sublime, and love. The justification for using the DSES was due to the specific

realization of spirituality mentioned in the previous paragraph. However, other scales with different subscales should also be considered for future work. For instance, two 10-item measures, one for existential well-being and the other for religious well-being (RWB), make up the widely used Spiritual Well-Being Survey (SWBS) in the United States (Ellison, 1983), or the Spirituality Index of Well-Being (SIWB) which is a scale used to assess how spirituality affects an individual's subjective well-being.

Additionally, due to the different measurements of the variables of interest, the sample size of 6 participants can be considered a weakness in the ability to conclude the experiment. While studying a much larger sample, it would be interesting to think about the relationship between spirituality and perceived stress.

Similarly, the second major weakness of the study stems from its use of a specific geographic location, which limits generalizability. The participants were recruited from a required statistics course at Bard College, New York. Most of the participants in the class plan to major in psychology; therefore, one possible weakness drawn from this procedure is convenience sampling. In other words, participants recruited from the class might have yielded skewed results. Certain groups within the population may be over- or under-represented without random selection. This disparity might result in distorted results and misleading portrayals of the group under investigation. Because of the danger of sample bias, convenience sampling might result in biased results, especially in such a small sample.

This idea of recruiting participants from other classes to increase the number of participants in the study was heavily discussed; however, for the experiment, I decided to stay away from various classes and only recruit participants from the statistics course. Justification for such a decision can be heavily attributed to the different class structures which different professors

offer. In other words, every class is different; some offer midterms in early October, some offer midterms at the end of the month, and some do not require written exams. Measurement of stress at different points like this would have prevented problems for data collection. However, factors such as class timing, essay style or multiple choice exams, and grading difficulty would cause additional compounding factors which would have been impossible to control during the study's time frame. Nevertheless, results indicate incongruence with the past literature. According to numerous studies, emerging adulthood is a crucial time period for developing coping mechanisms (Arnett, 2000).

In particular, we know that in Western cultures, emerging adulthood has become a separate stage of life for young people (Arnett, 2000). Most emerging adults are in a phase of transformation and discovery as they study their life options and eventually arrive at more enduring choices in love, employment, and worldview. Even in industrialized cultures, not all young people see their late teens and twenties as years of transformation and adventure. Some people do not have the opportunity to utilize those years as a voluntary period; others may be predisposed by personality or situation to limit their investigations or seek a very early end to them. Nevertheless, having a sense of purpose in life is connected with favorable mental health outcomes. It leads to hope, whereas meaninglessness is associated with poor mental health and suicidal ideation among college students (Dogra et al., 2011). Dogra et al., 2011 participants stated that they find significance in their connections with family and friends, their values and purpose in life, academic accomplishment, and service to others.

The purpose of this study was to look at the connections between academic stress, spirituality, and academic anxiety. While the majority of the findings found no significant associations, the presence of high perceived stress has been linked to increased levels of anxiety.

Despite earlier studies suggesting that spirituality is closely connected to stress perception (Arnett, 2000), the current study could not reach similar results. Although there was considerable overlap between spirituality and religion, most participants defined *spirituality* as a connection with oneself, others, nature, a higher power, and the quest for purpose in life.

Future research should expand the scope beyond psychology students and emphasize a much more diverse body of participants compared to the current study. For instance, participants in the current study were all college students of relatively similar academic backgrounds and academic structures in a small liberal arts college. It would be interesting if we could measure the perceived stress and spirituality of students of different academic majors or geographical locations. An argument can be made that due to the nature of Bard College, praised as extremely liberal (Becker, 2015), one cannot find enough interest from students to study or engage in spiritual or religious activities. However, this may not be the case, as Bard does offer various religious and spiritual activities over the semester. Notably, the campus offers multiple religious services on campus and off campus. Additionally, Bard offers students the opportunity to engage in various religious/spiritual traditions by offering numerous activities from those religious/spiritual traditions, such as Christian Services, Jummah prayers, Buddhist meditation, cooking and baking for Shabbat, and the Bard Parsha circle. These opportunities imply that Bard students do engage in spirituality since there is apparent interest in spirituality or religion due to these campus activities.

Little empirical research has sought to establish whether or not specific components of religiosity contribute uniquely to subjective well-being in high vs low life-stress subsamples. The expanding body of social science research on stress perception, social support, and other factors may provide relevant empirical insight on this subject. In particular, a body of research indicates

that people experiencing high-stress levels related to recent life events benefit most from functional, need-based social support (Cohen & Wills, 1985). Although there are many different theoretical interpretations and empirical measurements of social support, two commonly stressed stress-relieving elements are the sense of being cared about, loved, esteemed, and valued and the knowledge that help is easily accessible when needed (Cohen & Wills, 1985). It is evident that people's perceptions of support extend beyond their interactions with others; to varied degrees, people also sense similar functional support qualities in their relationships with God (Cohen & Wills, 1985).

Nevertheless, replicating the study with a much bigger sample would be interesting. Possible future research directions include thinking about the bigger picture of stress. While the current research only identified one possible stressor (i.e., academic stress), future research may only focus on psychosocial stressors in first-year students and see if the social isolation experienced by many first-year students (Arnett, 2000) can be linked to the development of different coping methods. Additionally, one can focus on students' financial struggles by sampling individuals with on-campus jobs.

Additionally, it would be interesting to try to contrast the idea of spirituality across different cultures. Studies examining the psychological and psychosocial dimensions of religion and spirituality in individuals' lives, as well as the relationship between spirituality and religion and mental and physical health, are becoming more advanced. The World Health Organisation made the first global contribution under the quality of life research category in 2006. This study looked into spirituality and religion as aspects of life quality. Therefore, as a future study, it would be interesting to use the Data obtained from The World Health Organization in regard to spirituality

and religion and try to apply it across different cultures in different stressful situations, in both naturalistic and controlled environments.

For instance, In his work "Spirituality, Psychiatry and Participation: A Cultural Analysis", Dinesh Bhugra suggests that terms like spirituality and religion are not helpful when comparing cultures. After analyzing the growing differences between Eastern and Western societies, it highlights how the terms religion and spirituality are employed in literature in various ways and the need for conceptual clarity in this area. The term "spirituality", as it is used today in Western societies, originates from two sources: Christian spirituality and "New Age" thought, which frequently appropriates concepts from Eastern religious traditions. This schism has complicated societal roots, including the rise of individualism, the search for meaning, and dissatisfaction with materialism and scientific rationality (Bhugra, p. 534).

Additionally, the convictions practiced in China, India, Southeast Asia, Japan, and other regions are usually considered Eastern religions. While most Eastern faiths are polytheistic, most Western religions are monotheistic, meaning they worship one God. The majority of other non-Eastern countries practice one of the Western religions. India has several Eastern religions, including Buddhism, Hinduism, Sikhism, and Jainism. East Asian cultures practice a wide variety of faiths, including Buddhism in its various forms, Taoism, Confucianism, and Shinto. The core principles of Taoism are love, moderation, and humility for all those pursuing enlightenment. Shinto emphasizes faith as a healing force, spirit possession, and divination. The foundations of Confucianism are rites, dignity, and merit. Eastern faiths are typically polytheistic, which indicates that the people worship several gods. Eastern and Western faiths differ significantly and are appropriate for diverse populations worldwide. What unites them is a faith of one kind or another in the existence of religion in the world.

While religion occasionally has impacts comparable in different cultures (such as improved health, prosociality, and traditional values), these relationships are frequently weakened or nonexistent in Western environments, particularly concerning morality. There are times when religion has the opposite consequences in East Asian environments (e.g. lessened prejudice). These findings indicate a relationship between cultural and religious elements (Cohen & Hill, 2007). Suppose we follow this logic and introduce cultural and religious elements. In that case, most Eastern cultures are collectivist cultures - prioritize the needs and objectives of the group over the wants and demands of any one person. In contrast, western cultures are more individualistic, a society where the individual comes before the group. Individualistic societies emphasize qualities such as distinctiveness or originality.

Additionally, future studies would benefit from emphasizing individualistic vs collectivist cultures more. For instance, it would be interesting to see how the perception of spirituality within those cultures would be expressed in stress perception. In particular, we know that Jews, Catholics, and Protestants showed varying correlations and endorsements of intrinsic and extrinsic religiosity (Cohen & Hill, 2007), supporting the hypothesis that intrinsic religiosity is associated with personal religion, whereas extrinsic religiosity emphasizes community and ritual.

Some religious cultures value social ties as a crucial component of religious life, and group affiliations are considered significant, even defining, aspects of religious identity. These cultures are similar to the collectivistic cultures that are more frequently studied (such as Hindu India and several East Asian countries). Religious cultures that emphasize collectivism view people as inherently linked to their communities, and other such religions include Jewish Catholic and non-Catholic Christian denominations are examples of such faiths. However, such an attitude towards religion is not present in the modern-day United States. A considerable number of

statistical surveys indicate that Americans do not view religion as a public matter but rather as private and individualistic, as demonstrated by the Pew Research Center located in Washington, D.C.- It offers data on social concerns, public opinion, and demographic changes influencing the global and American economies. A recent publication shows a slight but statistically significant decline in the number of people who say they pray daily, frequently attend religious services, and value religion highly.

One of the explanations for the decline in traditional religious practices and beliefs corresponds with shifts in the religious diversity of the American population. An increasing percentage of Americans identify as spiritually agnostic or atheist, and many more say they practice nothing in particular as their religion. The percentage of adults who identify as religiously unaffiliated has increased from 16% in 2007 to 23% (Pew Research Group, 2015). Additionally, because of the history of the church-state connection, an individualistic interpretation of religion appears to have been even more prevalent in the American setting in the past. It was not always believed that religion in the U.S. should be kept strictly private and personal. Since the First Amendment only forbids government-sanctioned religion, there was an established religion during a large portion of early American history, which persisted well after the Revolutionary War. Religion became more of a private affair after being disestablished entirely, accomplished in 1833 when Massachusetts abandoned established religion (Gilder Lehrman Institute 2021).

In addition to measuring spirituality, future research may focus on personality traits and see if there would be a significant link between spirituality, personality, and perceived stress. For instance, it would be interesting to use Big Five personality traits and see how they relate to the expression of spirituality. According to Levy & Lounsbury, 2011, in Western cultures,

individual religiosity is often linked to agreeableness, conscientiousness, and honesty/humility and is unrelated to neuroticism, extraversion, and openness to experience. Such studies of personality and spirituality are widely studied in Individualistic (western) cultures. However, such statements regarding more collectivist (eastern) cultures cannot be made.

It has long been believed that solid evidence links personality to religiosity, as demonstrated by the relationships between the Big Five and religiosity (Levy & Lounsbury, 2011). However, in theory, there is an additional reason for those correlations: It would be interesting to see if Personality changes in general may result from religiosity. Consequently, longitudinal studies are required to, for instance, examine the cross-cultural impacts of the Big Five on religiosity changes or examine the cross-cultural effects of religiosity on changes in the Big Five, and lastly, compare the sizes of the two types of cross-cultural effects. On the other hand, hardly any research would provide a definitive link between personality and cross-cultural expression of spirituality.

While future directions for measuring stress can be considered relatively straightforward, measuring spirituality, on the other hand, is quite difficult. One of the most contentious issues among psychologists is the concept of spirituality. Since spirituality has been shown to positively impact people's psychological well-being, it is vital to have a reliable instrument for measuring this idea.

Conclusion

Spirituality has been linked to various health benefits; multiple studies across different disciplines, such as psychology and medicine, have demonstrated the importance of spiritual practices when it comes to mental health, acceptance of an illness, and physical recovery (Arnett, 2000; Leung et al., 2021; Reddy et al., 2018). The current study aimed to frame the benefits of spirituality in the context of academia. In particular, the study was introduced as a way to see if spirituality would be a beneficial coping mechanism for undergraduate students. The study was conducted at Bard College in the fall of 2023 and recruited psychology students enrolled in mandatory statistics courses. Three scales were used, although two of them were used for two different time points - Perceived Stress Scale, Daily Spirituality Experience Scale, and Academic Anxiety Scale. Measurement and Data collection were divided into two-time frames. During the first time frame (second week of classes), the Perceived Stress Scale, Daily Spiritual Experience Scale and Academic Anxiety Scale were distributed to participants. During the second time frame (the week before the statistics midterm), the perceived stress scale and academic anxiety scale were distributed to participants. The results indicated no significant effect across spirituality and perceived stress. Indicating that spirituality has no effect on academic stress coping. Such findings go against the findings presented in earlier studies (Arnett, 2020; Brougham et al., 2009; Kuh, 2000; Victor & Treschuk, 2019; and Fowler, 2017). The study did indicate a significant effect between the perceived stress scale and the academic anxiety scale; this result was intuitive and suggests that students' scores had increased significantly on both scales the week before the exam.

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Appendix A

Sample Participant Consent Form

Purpose:

The purpose of this study is to examine the relationship between spirituality and stress. The study will assess the baseline stress levels during the first week of the fall 2023 semester, and as a comparison it will assess stress levels on the day of the first midterm exam. The study will also use a spirituality index for determining the spirituality component of the participant.

Procedure:

The study will be conducted electronically. If you agree to be in this study, you will be asked to do the following: Answer questions about your experiences at two individual time points, one this week and a second later this semester. The total time required to complete the study should be approximately 6 minutes at two times during the semester. Upon participating in the study you will be automatically entered into a drawing for 25$ e-gift cards, a total of three e-gift cards. If all students participate, there will be 60 participants in this study, and thus you will have at least a 5% chance of winning one of the gift cards. Debriefing should occur as soon as a participant has concluded the research activity. As an extra precaution, when the research is done, an email will be sent to all participants to guarantee that all participants (those who completed and those who may have quit mid-way) receive a debriefing form.

Benefits/Risks to Participant:

There are no known benefits to participating. Risks are minimal, although the surveys may include items about stress, which may result in minor discomfort, the online nature of the study also may also decrease this discomfort. Sensitive information such as GPA, or private information which may help to identify a participant (major, course load, etc) won't be collected. The environment of the study would not induce risks such as mental fatigue, embarrassment,discomfort, frustration, guilt, or shame.

Voluntary Nature of the Study/Confidentiality:

Your participation in this study is entirely voluntary and you may end your participation in the study at any point during the experiment, or choose to skip any questions with which you are uncomfortable. Your email address will be connected to your responses on the questionnaires; however the only person who will have access to such information will be my advisor, Prof. Dainer-Best. The confidentiality of the study is a high priority. Information that would make it possible to identify you or any other participant will never be included in any sort of report. Your data may be shared in aggregate as part of the reporting of results.

Contacts and Questions

If you have questions about the experiment or if you want your data to be dropped from the experiment please email me at zk9247@bard.edu. If you require further assistance with

anxiety or nervousness caused by your participation, feel free to email Bard Counseling Services, at counselingservice@bard.edu or visit their website at https://www.bard.edu/counseling/.

Statement of Consent:

I have read the above information. I have asked any questions I had regarding the experimental
procedure and they have been answered to my satisfaction. I consent to participate in this study.
Name of Participant_____Date: _____

(please print)

Signature of Participant _____
Age: (Note: You must be 18 years of age or older to participate in this study.)
Email:

Appendix B

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.
Name _____
Date_____
Age _____ Gender (Circle): M F Other
Bard Email: _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? 0 1 2 3 4
2. In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2 3 4
3. In the last month, how often have you felt nervous and "stressed"? 0 1 2 3 4
4. In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2 3 4
5. In the last month, how often have you felt that things were going your way? 0 1 2 3 4
6. In the last month, how often have you found that you could not cope with all the things that you had to do? 0 1 2 3 4
7. In the last month, how often have you been able to control irritations in your life? 0 1 2 3 4
8. In the last month, how often have you felt that you were on top of things? 0 1 2 3 4
9. In the last month, how often have you been angered because of things that were outside of your control? 0 1 2 3 4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

In case of additional Questions Feel free to contact me at zk9247@bard.edu

Appendix C

DAILY SPIRITUAL EXPERIENCE SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling yes/no felt or thought a certain way. Name _____

Date_____

Age _____ Gender (Circle): M F Other

Bard Email: _____

The version below mentions the word GOD or DIVINE, however the terms such as those can be used interchangeably with UNIVERSE, MERCY, WALKING, NATURE, and SPIRITUALITY and does not necessarily imply Religion.

Regarding scoring of this version, a simple yes/no should be adequate.

Recently . . .

1. Have you been spiritually touched by the beauty of creation? Yes/No

2. Have you felt God's presence, or the presence of the divine or holy? Yes/No

3. Have you experienced a connection to all of life? Yes/No

4. Have you felt close to the divine or transcendent as expressed in other words? Yes/No

5. Have you desired to be closer to God or in union with the divine? Yes/No

6. Have you felt God's love or divine love for you directly? Yes/No

7. Have you felt God's love or compassionate love for you through others? Yes/No

8. Have you felt selfless caring for others? Yes/No

9. Have you accepted others even when they have done things you think are wrong? Yes/No

10. Have you found strength in your spirituality or religion? Yes/No

11. Have you found comfort in your spirituality or religion? Yes/No

12. Have you felt guided by God in the midst of daily activities? Yes/No

13. Have you asked for God's help in the midst of daily activities? Yes/No

14. During worship, or at other times when connecting with God, have you felt joy that lifts you out of your daily concerns? Yes/No

15. Have you felt thankful for your blessings? Yes/No

16. Have you felt deep inner peace or harmony? Yes/No

Appendix D

Academic Anxiety Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.
Name _____
Date_____
Age _____ Gender (Circle): M F Other
Bard Email: _____

Please complete the following items using the four-point scale below.

1 = Not at all typical of me
2 = Somewhat typical of me
3 = Quite typical of me
4 = Very typical of me

1	I often worry that my best is not as good as expected in school.	1	2	3	4
2	I tend to put off doing school work because it stresses me.	1	2	3	4
3	I often worry that I am not doing assignments properly.	1	2	3	4
4	I am less confident about school than my classmates.	1	2	3	4
5	I have a sense of dread when I am in my classrooms.	1	2	3	4
6	I tend to find my instructors intimidating.	1	2	3	4
7	I spend much of my time at school worrying about what is next.	1	2	3	4
8	There is something about school that scares me.	1	2	3	4
9	I'm concerned about what my classmates think about my abilities.	1	2	3	4
10	I often feel sick when I need to work on a major class assignment.	1	2	3	4
11	I have a hard time handling school responsibilities.	1	2	3	4

Appendix E

Preregistration

Based on the OSL/PT Preregistration Template. Fill below headings with your own information.,

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Preliminaries

Study Title:

Spirituality as a Coping Mechanism for an Academic Stress

Investigator's Name and Affiliation

Zurab Kherodinashvili, Bard College

Date of Preregistration

IRB Status

- Approved, date:

Variables

What are your independent / grouping / predictor variables (including mediators and moderators) ? Explain how you operationalize each variable.

Independent Variable is Spirituality.

> Spirituality would be defined as personal quest for seeking meaning in life

What are your dependent / outcome variables? Explain how you operationalize each variable.

Dependent variable: Perceived Stress

Stress would be defined as the body's response to academic-related demands that exceed adaptive capabilities of students

List any exploratory variables. These are variables that you included in your study, but are not central to your main predictions.

Age and Gender.
Academic Anxiety Scale.

Did you create new, or modify existing, variables for this study? (Delete all that do not apply)

- Some, or all, variables have been used in prior, published research, and no modifications were made

Hypotheses

What are your primary study hypotheses / research questions?

People who score higher on Spiritual index scores have a lower stress increase between two points of measurement than people who do not display high on spirituality.

Do you have any exploratory hypotheses / research questions? If so, describe them below:

Can spirituality be used as a coping mechanism?
How can spirituality relate to self-efficacy?

At the time of this preregistration, describe the status of data collection (delete those that do not apply):

- Data collection is in progress but data is not visible to the researcher

If you indicated above that data collection is 'complete' or 'in progress,' have you (or anyone else) already conducted any statistical analyses?

- No data analyses have been performed

Sampling

What is your target sample size?

27

How was your target sample size determined? (Delete all that do not apply)

- Target sample size based on constraints / convenience (e.g., size of subject pool, available money to pay participants, access to participants)

Other: Due to the structure of the experiment and nature of the study, I only have access to the one class.

How will you determine when to stop collecting data (i.e., your stopping rule)? (Delete all that do not apply)

A particular amount of time has passed (e.g., the end of the semester)

The Data collection will be stopped week before the midterm exam, which would be October 18-23.

Research Design

What type of research design are you using? (Delete all that do not apply)

- Correlational Study

The study is a correlational design with two time point measurements.

Data Analysis Plan

What will be your criterion for determining statistical significance?

- $p < .05$

Will your tests of significance be:

- Two-tailed

Will you exclude participants from data analysis based on any of the reasons listed below? (Delete all that do not apply)

- No

What criterion (if any) will you use to determine whether a participant is an outlier?

- None

Which statistical tests will you use to conduct your data analyses? (Delete all that do not apply)

- Regression
    - I will be using regression to conduct the correlational design. The first variable used will be the change in stress during the time period between first and second PSS measurement. While the predictor variable will be the score on the Spirituality index.
    - The score on the Academic anxiety scale will be used as a variable and will be correlated to the perceived stress score.

For How can spirituality and its relation to the self efficacy the subscale of DSES will be used in order to observe relationship if any, between self efficacy and spirituality.

If relevant, describe what types of follow-up tests you will perform (e.g., Tukey post-hoc; simple main effects). If you will conduct planned comparisons, explain the nature of those comparisons below:

N/A

For the analyses listed above, will you include any covariates or control variables? If so, describe them below and provide a justification:

N/A

Appendix F

BARD IRB – Proposal

On the Proposal you will be asked to complete the following:

What is the title of your project - Spirituality as a Coping Mechanism for Academic Stress

When do you plan to begin this project? (Start date): Fall 2023, First week of Classes

Describe your research question(s):
a). How can spirituality be used for stress management
b). Can spirituality affect Academic Stress

Describe the population(s) you plan to recruit and how you plan to recruit participants. Please submit all recruitment material, emails and scripts to IRB@bard.edu.

The population will be Bard college students from Design & Analysis II (PSY 202) and likely a second class in Mathematics Calculus 2 (MATH 142 C) or another similar course. Permission has been given by the instructor of PSY 202 and MATH 142 C, and would be sought from any other instructor before beginning. I have asked the instructors to email the IRB their permission. Materials used would be surveys: the perceived stress scale to measure initial and secondary stress levels; the Daily Spiritual Experience scale to assess the nature of spirituality of participants; and Academic Anxiety Scale to determine general anxiety of a participant for academic term. These surveys are included in the appendix. Participants will also fill out a brief demographic survey. The recruitment flier with information about the experiment or presentation (2-5 mins) can be given during the first week of classes. This flier is also included in the appendix, including a short recruitment script.

Will your participants include individuals from vulnerable or protected populations (e.g., children, pregnant women, prisoners, or the cognitively impaired)?
No.

If your participants will include individuals from the above populations, please specify the population(s) and describe any special precautions you will use to recruit and consent.

Approximately how many individuals do you expect to participate in your study?
60

Describe the procedures you will be using to conduct your research. Include descriptions of what tasks your participants will be asked to do, and about how much time will be expected of each

individual. NOTE: If you have supporting materials (printed surveys, questionnaires, interview questions, etc.), email these documents separately as attachments to IRB@bard.edu. Name your attachments with your last name and a brief description (e.g., "WatsonSurvey.doc").

The procedure for the data collection will occur during the first week of classes. Participants will be presented with the opportunity to participate in the study in class. A short presentation will be given about the nature of the experiment, and participants interested will provide consent and email addresses. After consent, participants will be emailed a link to the surveys run through Qualtrics, a secure online platform for data collection. The surveys will assess demographics, Perceived Stress, academic stress, and Spirituality. The Perceived Stress Scale has 10 Items in total, and takes approximately 2 minutes to complete. Additionally, the participants will fill out the Daily Spiritual Experience Scale, with roughly the same amount of Items (16 Items total). This will be the end of part one of the data collection.
Part 2 of the data collection will resume in the week of the first exam, where before the exam, the same participants will be invited to fill out the PSS and academic stress scales again. Participants will be invited via email but only Prof. Dainer-Best will have access to data including identifying information. Prof. Dainer-Best will provide de-identified data to me for analysis.
Following the end of data collection (and after the exam), participants will be emailed the debriefing statement. Answer questions about your experiences at two individual time points, one this week and a second later this semester. The total time required to complete the study should be approximately 6 minutes at two times during the semester. Upon participating in the study you will be automatically entered into a drawing for 25$ e-gift cards, a total of three e-gift cards. If all students participate, there will be 60 participants in this study, and thus you will have at least a 5% chance of winning one of the gift cards. Debriefing should occur as soon as a participant has concluded the research activity. As an extra precaution, when the research is done, an email will be sent to all participants to guarantee that all participants (those who completed and those who may have quit mid-way) receive a debriefing form.

Describe any risks and/or benefits your research may have for your participants.

The risks demonstrated in the study will be related to natural stress levels a student might exhibit before the midterm. In addition to that the experiment will not induce nor contribute to any other risks that might negatively affect the participant. In addition the questionnaires provided are relatively short with Perceived Stress Scale containing 10 Items, Daily Spiritual Experience Scale containing only 16 items and academic anxiety scale containing 11 items. To address any concerns about confidentiality, Qualtrics is a secure password-protected system and no identifying information will be available outside of that system.

There would be no risk for the participants since the surveys used will be confidential - the contact information for the participants will only be known to my advisor. The identification of the participants is necessary due to the nature of the experiment for the following reasons: a) I am measuring stress at two time points for comparison for the same participant. b) Spirituality index will be assigned to individuals separately therefore the identification of the participant with name or ID will be useful for connecting Stress Levels to Spirituality Scale.

Describe how you plan to mitigate (if possible) any risks the participants may encounter.

Risk of anonymity - I will mitigate this risk by disclosing the names of participants to only my advisor for the project.

Describe the consent process (i.e., how you will explain the consent form and the consent process to your participants):

The motivation of the study will be presented to the participants via short presentation, if participants will be willing to participate the short consent form will be given upon which participants will read the purpose of the study, the tasks from which the data will be collected, The nature of the participation will be explicitly stated.

Have you prepared a consent form(s) and emailed it as an attachment to IRB@bard.edu?
Note: You must submit all necessary consent forms before your proposal is considered complete.
Yes.

If you are collecting data via media capture (video, audio, photos), have you included a section requesting consent for this procedure(s) in your consent form(s)?

I will not be collecting data via media capture or anything of similar nature.

If your project will require you to employ a verbal consent process (no written consent forms), please describe why this process is necessary and how verbal consent will be obtained and stored.

My project will not require me to employ a verbal consent process. After the presentation is given, the interested individuals will have the opportunity to request the written consent form upon completion of the written consent form participants will be enrolled in the study.

What procedures will you use to ensure that the information your participants provide will remain confidential and safeguarded against improper access or dissemination?

Since the nature of the study requires the identification for the participants due to the measurements of the stress levels on two distinct time points, the identifying information will be disclosed only to my advisor, not me.

Will it be necessary to use deception with your participants at any time during this research? Withholding details about the specifics of one's hypothesis does not constitute deception, this is called incomplete disclosure. Deception involves purposefully misleading participants about the nature of the research question or about the nature of the task they will be completing.

No.

If your project study includes deception, please describe here the process you will use, why the deception is necessary, and a full description of your debriefing procedures.

No.

For all projects, please include your debriefing statement. (This is information you provide to the participant at the end of your study to explain your research question more fully than you may have been able to do at the beginning of the study.) All studies must include a debriefing statement. Be sure to give participants the opportunity to ask any additional questions they may have about the study.

Debriefing statement: The study aimed to understand how spirituality can affect stress perception. The measurement of stress took place on the first week of classes when the stress levels are near baseline levels. The second measurement of stress took place during the week of the first midterm, to see how much stress you were experiencing.
When it comes to the spirituality component of the study, it was determined by a questionnaire during the first week of classes. It should be mentioned that the questionnaire does not measure belief in God, nor is it affiliated with any religious institution, but rather it is just a measure of how often one may engage in spiritual activities, such as repetitive acts, meditations, prayers, knitting, walking, and so on. A high score on this measure does not mean that you are a religious person nor does it imply that you are more inclined to be one. All of the responses that you provided in the experiment are completely confidential, and no results of this study will ever link you to your responses.
If you have questions about the experiment or if you want your data to be dropped from the experiment please email me at zk9247@bard.edu. If you require further assistance with anxiety or nervousness caused by your participation, feel free to email Bard Counseling Services, at counselingservice@bard.edu or visit their website at https://www.bard.edu/counseling/

If your recruitment materials or consent forms will be presented in languages other than English, please translate these documents and email copies to IRB@bard.edu. I have submitted all of my translated materials.

Appendix E

Debriefing Statement

The study aimed to understand how spirituality can affect stress perception. The measurement of stress took place on the first week of classes when the stress levels are near baseline levels. The second measurement of stress took place during the week of the first midterm, to see how much stress you were experiencing.
When it comes to the spirituality component of the study, it was determined by a questionnaire during the first week of classes. It should be mentioned that the questionnaire does not measure belief in God, nor is it affiliated with any religious institution, but rather it is just a measure of how often one may engage in spiritual activities, such as repetitive acts, meditations, prayers, knitting, walking, and so on. A high score on this measure does not mean that you are a religious person nor does it imply that you are more inclined to be one. All of the responses that you provided in the experiment are completely confidential, and no results of this study will ever link you to your responses.
If you have questions about the experiment or if you want your data to be dropped from the experiment please email me at zk9247@bard.edu. If you require further assistance with anxiety or nervousness caused by your participation, feel free to email Bard Counseling Services, at counselingservice@bard.edu or visit their website at https://www.bard.edu/counseling/

If your recruitment materials or consent forms will be presented in languages other than English, please translate these documents and email copies to IRB@bard.edu. I have submitted all of my translated materials.