An Examination of Intolerance of Uncertainty, Anxiety, and Spirituality in College Undergraduates

By

Madeline LaPolla

A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
May 4, 2024

Keywords: intolerance of uncertainty, anxiety, spirituality, emerging adulthood

Approved by

Heather Delgado, Chair, Associate Professor of Special Education, Rehabilitation, and Counseling
Jamie Carney, Humana-Germany-Sherman Distinguished Professor of Special Education, Rehabilitation, and Counseling
David Shannon, Humana-Germany-Sherman Distinguished Professor of Education Foundations, Leadership, and Technology
Jessica Tyler, Associate Professor of the Practice, Human Development Counseling Program

Abstract

Feelings of distress over the unknowns of the future refers to an intolerance of uncertainty (IU). IU is significantly linked to internalizing disorders like anxiety. College students are in a unique position of uncertainty and anxiety as they emerge into adulthood. Additionally, external sources of uncertainty, like the economy, may contribute to feelings of anxiety over the future due to negative perceptions of its stability and certainty. Coping skills, like spirituality, may lessen the feelings of IU and anxiety that college students experience. Past research has explored the relationship between IU and spirituality and IU and anxiety, yet there exists a gap in the literature examining all three factors, especially with college students. Thus, the current study aimed to explore the relationship between anxiety, IU, and spirituality in undergraduate college students. Specifically, the study explored the moderating effects of spirituality between IU and anxiety. Results found significant positive correlations between the three variables. However, spirituality was not found to be a significant moderator between IU and anxiety. These results are discussed with implications for counselors and counselor educators.

Acknowledgements

"Trust in the Lord with all your heart, and do not lean on your own insight. In all your ways acknowledge him, and he will make straight your paths."
Proverbs 3:5-6

As it is said, it takes a village to raise a child. Where I have not yet had any children of my own, I have raised this dissertation to maturity, and the same holds true for her upbringing. The members of my village have been of great support and comfort to me over these years, offering me peace through navigating my own uncertainties and anxiety. To them, I dedicate this dissertation.

First, I would like to thank my parents and my family. From the beginning, you have been nothing but encouraging and supportive, patient with the many shifts and changes that came along this journey yet remaining with me throughout it all. I want to thank you for teaching me the value of perseverance and problem-solving, providing me with the skills to conquer anything I set my mind to.

Second, I want to thank my professors, including the members of my committee and my outside reader, Drs. Delgado, Tyler, Carney, Shannon, and Marhsall, over the years for offering me wisdom, guidance, and mentorship throughout this process. From my undergraduate professors who introduced me to the world of research, trusting a young freshman to be a research assistant in a social psychology lab, to my graduate professors who introduced me to clinical mental health counseling and helped me to find my vocational calling within this world, and lastly, to my doctoral professors who trusted in me and offered me a place in this program, expanding upon the influence that I can have as a counselor educator.

Third, I want to thank my cohort members and various friends who offered a supportive shoulder to lean on over the years; my parental support group, if you will. To my cohort, Astra, Emma, Jennifer, Joanna, Kaycee, and Matt, thank you for being an amazing group of individuals to embark on this journey with. To my friends, Claire, Shelby, Olivia, and Ashley, for always being one phone call away, and always open to listening when I needed it the most.

Lastly, it would be remiss of me not to acknowledge my dissertation's daycare, the place where I often went to nurture and raise her, Well Red. Thank you for offering this young doctoral parent a space to work and the caffeine to keep her going.

Table of Contents

List of Tables

Chapter 1

Introduction

Much of life is unknown and unpredictable (del Valle et al., 2022). Even in situations when there is a degree of predictability (i.e., severe weather), several elements will remain uncertain. For instance, meteorological technology can accurately predict the onset of a major storm, but it might not fully predict all details of the phenomenon or the severity of the storm and its resulting damage. The degree of unknown during times of disasters may lead to feelings of uncertainty (Goldmann & Galea, 2014). The inability to fully predict the future may cause individuals distress (Carleton, 2016). Those who experience such stress over the unpredictable may engage in different coping skills to lessen such feelings. This distress surrounding the ambiguity and unpredictability of the future refers to an intolerance of uncertainty (IU) (Bauer et al., 2019; Shapiro et al., 2020).

As a result of IU, individuals may experience a variety of reactions, including worry, anger, panic, and helplessness (Freeston et al., 2020; Shapiro et al., 2020). These reactions to IU have been found in non-clinical populations and may further contribute to the corresponding psychopathological concern. IU is considered a transdiagnostic trait that contributes to the development and maintenance of various internalizing disorders, like Panic Disorder (PD), Major Depressive Disorder (MDD), Post Traumatic Stress Disorder (PTSD), Social Anxiety Disorder (SAD), Obsessive-Compulsive Disorder (OCD), and Generalized Anxiety Disorder (GAD) (McEvoy & Mahoney, 2012; Shihata et al., 2017). Rumination, for instance, is one possible reaction to IU (Satici et al., 2020). One may ruminate on an upcoming event and thoughts of concern over such that may increase feelings of worry and fear. Thus, the reaction to IU could lead to a continuation in the symptoms of these disorders.

One group that uniquely experiences uncertainty within the context of their stage of life and development are undergraduate college students. Where various individuals experience moments of distress and uncertainty, undergraduate college students have specific sources of distress that may increase IU (Reis et al., 2021). These sources primarily consist of the academic requirements of completing a collegiate degree and maintaining a higher-grade point average (GPA) in the process of passing courses. Additionally, some college students may be in financial situations that require them to work either part- or full-time jobs while balancing the demands of their classes and other extracurricular involvements. Further, most undergraduate college students are between the ages of 18-22, which consists of the stage of emerging adulthood, in which young adults gain the most independence they have had in their lives (Arnett, 2000; Dattilo et al., 2022). Though this comes with freedoms, it also may increase feelings of stress and uncertainty as more financial responsibility is now placed upon them. Lastly, college is the first step towards the beginning of the student's entire adulthood future, including their professional identity. Political and economic circumstances, such as political divide, inflation, unemployment rates, and job availability, may contribute to more distress within the student and uncertainty over the future. Feelings of distress over the uncertainty of various facets of present-day life may increase symptoms and feelings of anxiety in college students.

Anxiety, or the concern over future threat, is one possible reaction that individuals may have to IU (Majali, 2020; McEvoy & Mahoney, 2012). Some degree of anxiety is considered protective, as it causes a person to be apprehensive of potential sources of danger (Majali, 2020). However, anxiety may become a hinderance when the amount of anxiety is disproportionate to the possible threat posed by an event. In those circumstances, pathological degrees of anxiety, known as anxiety disorders, may develop (American Psychiatric Association [APA], 2022).

These disorders, including PD, GAD, and SAD, are also the most common mental illness experienced by adults in the US (Anxiety and Depression Association of America [ADAA], n.d.).

Coping strategies may be used to reduce feelings of anxiety. Coping pertains to an individual's attempts to work within a system that has limited resources to meet one's needs (Guo & Shen, 2021). Coping can be problem-focused which aims to solve the current problem, emotion-focused with the aim to decreased negative emotions, or dysfunctional, which is maladaptive (Garcia et al., 2018). Having better coping or more adaptive coping abilities may moderate feelings of IU and anxiety (AlHardi, 2021). Religious coping (i.e., prayer) is an example of adaptive coping that also effectively reduces anxiety and IU (Howell et al., 2019; Achour et al., 2021).

Religiosity generally pertains to the beliefs and practices connected to a more organized religion (Burney et al., 2017; Hill & Pargament, 2008). Within such, one may hold various degrees of spiritual beliefs or spirituality. Spirituality typically refers to one's individualized understanding of purpose and meaning in life that may or may not be connected to an organized system of religion (Burney et al., 2017; Hill & Pargament, 2008). Further, spirituality is an example of a possible adaptive coping mechanism that individuals may engage in to lessen feelings of anxiety and IU (Rosmarin et al., 2011; Ramos et al., 2014). When individuals utilize their spiritual or religious beliefs and practices to cope with uncertainty, they aim to regain a sense of control by placing that uncertainty within the power of a higher being (Howell et al., 2019). It is seen as a protective factor and adaptive coping mechanism during times of distress.

Past research has explored the relationship between IU and spirituality, and IU and anxiety (Ramos et al., 2014; Howell et al., 2019). However, past research has not explored the

relationship between all three factors. Therefore, it was the aim of this study to further explore the relationship between IU, spirituality, and anxiety within the undergraduate college student population. Specifically, the current study posits that spirituality will moderate the relationship between IU and anxiety, in which spirituality decreases IU and anxiety in those with greater levels of spirituality.

Literature Review

College Students

Developmental Concerns: Emerging Adulthood

Utilizing theoretical, sociocultural, and subjective evidence, Arnett (2000) argued for a new stage of development between adolescence and young adulthood that was characteristically distinct from other phases of development. At the time his work was published, Arnett (2000) noticed that various young adult milestones, like marriage and parenthood, had shifted in the population from occurring in one's early twenties to their mid- or late-twenties. Additionally, significantly more individuals were pursuing higher education than had previously. As such, Arnett (2000) observed it to be a period of uncertainty over the future as integral decisions regarding romantic relationships, vocational pursuits, and perceptions of the world were yet to be made, allowing one the flexibility to explore multiple facets of their identity. Thus, Arnett (2000) developed a phase of development that reflected these sociocultural shifts while also enhancing present theoretical understandings of development. He referred to this period as 'emerging adulthood'.

Emerging adulthood, the critical stage of development during the ages of 18 to 25, is characterized by a continuation of the identity exploration that began in adolescence, though now with an increased level of independence (Arnett, 2000). Specifically, Arnett (2015) distinguishes

emerging adulthood from adolescence based on five factors: identity exploration, instability, self-focus, feeling in-between, and possibilities/optimism. It is a time when one starts to make decisions that will build the foundation of their future identity as an adult with the goal of enhancing one's ability to be more self-sufficient, as is typically characteristic of adulthood. Such decisions may include forming more committed romantic relationships, pursuing experiences that promote vocational goals, and beginning to learn how to manage the responsibilities of life while also enjoying newly found freedoms and autonomy. It is a period of personal growth and change where one begins to experience what it means to be a culturally defined 'adult' in society while still having guidance and protection from those with more knowledge, wisdom, and experience (Arnett, 2000).

As an emerging adult, one starts to have some, but not all of the responsibilities affiliated with adulthood (Arnett, 2000). An emerging adult may choose to continue living with their parents while also joining the workforce or may decide to live alone while continuing to receive parental financial assistance. An emerging adult with greater access to resources is afforded the ability to engage in greater self-exploration, focus strictly on self-driven pursuits, and worry less about other burdens associated with adulthood (Arnett, 2015). For instance, college students, traditionally being of the ages encompassed in emerging adulthood, with parental financial support have more time to focus on academics and extracurricular collegiate activities than their counterparts without such who have to fill part of their time with work (Perna et al., 2007; Arnett, 2015). Therefore, a college student free from the restrictions of employment has more time for selfish pursuits, where the term 'selfish' refers to considerations for personal desires, rather than a negative character trait.

Emerging Adulthood: Considerations for College Students

11

For college students, the exploration of self that is characteristic of emerging adulthood includes meeting new people, learning new academic subjects, and partaking in new activities within the safety of the policies and confines of a college campus. In alignment with the characteristics of emerging adulthood, college attendance provides a unique setting for identity development within the areas of romance, vocation, and worldview (Arnett, 2000). It is a transitionary period where a young person begins to experience life outside of the environment built around the rules of their parents. They have acquired the ability to set their own rules while also adhering to those of their institution. However, with more autonomy comes more responsibility.

According to the National Center for Education Statistics (2022), approximately 15.4 million undergraduate students were enrolled in a degree-granting postsecondary institution in the US during the fall of 2021, which is about a three percent decrease in enrollment, attributed to the impacts of the COVID-19 pandemic. Attending college provides the opportunity for one to meet peers from more diverse backgrounds, as primary and secondary education is more restricted to unique systemic influences bound within the set parameters of a community that one finds themselves in during these earlier formative years (Bronfenbrenner, 1979). These further aid in the formation of a personal worldview, a component of one's identity development within emerging adulthood (Arnett, 2000).

Learning about the ways of others allows one to better explore and understand themselves within their own culture and their broader world community. Students become exposed to new topics and are provided the space to learn and apply new scholarly material, enhancing one's understanding of the theoretical world and possibly influencing vocational decisions (Arnett, 2015). However, the learning of new topics is not limited to the required

courses of a major or career path and provides a space for learning that is purely for the sake of learning. Further, college campuses offer a plethora of extracurricular activities connected to academics, social pursuits, or recreational activities that students can become involved with. They provide the chance for one to become more connected to their college campus and community, increasing a sense of belonging and purpose, while also developing new skills and meeting new people.

College students are not completely on their own in this phase of life and have access to resources offered by their institution that can offer them guidance. They can begin to learn work-life balance within the context of newly acquired freedoms, including being able to legally purchase substances such as alcohol, marijuana, and nicotine. However, the age and legality of being able to purchase such is dictated by the state. Additionally, this explorative period occurs outside of the rules previously enforced by their parents and society, and can now be self-determined (Arnett, 2015). However, despite some degree of protection from some of the consequences of adulthood, uncertainty remains as the daunting idea of one's future looms greatly within the area of the unknown.

To begin and to later graduate from a university are sources of major change within an individual's life. With change comes uncertainty concerning the outcome of such a decision. For college students, these areas of change and uncertainty include moving away from home for possibly the first time in their lives, living in an unfamiliar community with strangers, learning how to manage time, work, and social life, and continue to cope with any other sources of distress that may arise (Arnett, 2015). Similar changes occur after graduation when one may experience uncertainty over employment security or navigating a new program within higher

education. Such uncertainties may further contribute to the stress generally experienced by college students.

Uncertainty

College students regularly experience various sources of stress that may be classified as personal (i.e., relationships, or social life), academic (i.e., exams/assignments), or financial (i.e., finances, employment) (Reis et al., 2021). Personal and academic sources of stress include stressors related to their classes, extracurricular activities, relationships with family and friends, including developing new connections, and their living environment, such as having to share a space with new and unfamiliar people. Completing a college degree entails successfully passing courses, and often includes pressure to maintain a relatively high grade-point average (GPA) to make students more competitive in the job market or as applicants to higher education programs. In addition to coursework, college students are typically involved in campus organizations, which includes specific demands. For instance, involvement in a sorority or fraternity may include attending mandatory weekly meetings or being present at philanthropic events. A young college student must learn how to balance the demands of a higher education with the obligations of extracurricular involvement while also coping with the uncertainty of their future.

Many changes come with a collegiate career. One of the more significant ones is that of moving away from home and into a new, unknown environment. This change is also symbolic of one's transition from childhood to adulthood, with a symbolic distance being placed between them and their parents. Students must now learn to navigate their college community and campus, learning the streets, buildings, and businesses surrounding them. They may have to move into a dorm, which would involve sharing a space with either one or multiple strangers, including that of a bathroom. The size of their living space in a dorm room may be drastically

different from what they had previously resided in. Additionally, the workload, rigorous schedule, and more intense academic demands of higher education differ from what was previously experienced in high school. Students may struggle to adjust to such and need to learn new time management skills, academic strategies and abilities, and greater self-efficacy overall. For first generation college students, less may be known about the expectations of college, as they lack access to the wisdom and advice of a parent who already navigated such in the past. Thus, they may be failing to utilize helpful resources typically offered to currently enrolled students without knowledge of the existence of such.

Academic tracks are heavily influenced by the decision to pursue a specific major, which is ascribed a coursework sequence to be completed to earn a degree in that area. Academic performance and general career interests are some of the factors that contribute to major switching (Denice, 2021). Choosing a major can be a stressful decision for students, who may feel the weight of such within the context of their future careers, which is one of the developmental areas of exploration for emerging adults (Arnett, 2000; Denice, 2021). It is typical for college students to change their majors often, with research showing that almost thirty-three of students change their major once and about twelve percent change their major twice or thrice; of the twelve percent, about eighty-three percent change their major twice (Denice, 2021). Characteristics of students who are more likely to change their major include being a woman, first-generation college student, having a decreased sense of belonging in college and major area, poor college preparation, and poor pre- and peri-college academic performance (measured by ACT/SAT score and GPA). Thus, the decision to change one's major can be a difficult one, requiring guidance and support.

As one continues to understand who they are and begin to define their identity as a more senior member of society, placed with increased responsibilities, autonomy, and exploration over the possibilities of the future (Arnett, 2000), they also begin to have a new perspective on the happenings in their surroundings that may be combined with worries associated with adulthood. In other words, students no longer have the luxury of obliviousness ascribed to childhood and adolescence as they find themselves observing the world through a lens that highlights the personal impacts of such matters. Many matters of self are connected to the events that occur on all ecological levels, and further contribute to identity development (Bronfenbrenner, 1979). Events that occur on a more social, political, or global level begin to take on a new meaning as one may view such within a more personal context, considering how it affects themselves and their futures, than previously as high school students. Feelings of uncertainty may arise as these events take on new and more deeply personal meaning. Therefore, it is important to consider the role that various sources of change (personal, political, and social) may have on the uncertainty experienced by college students in conjunction with the developmental concerns of emerging adulthood to better foster a more supportive environment.

Change and Uncertainty

Uncertainty of the future includes concern over the changes that may occur, those that may be predicted, such as changes with age, and those that could never be known, like an unprecedented global pandemic (AlHadi et al., 2021). Change can be uncomfortable and difficult to adapt to, potentially leading to clinical levels of difficulties in adjusting to such. For example, the DSM-5-TR (APA, 2022) includes Adjustment Disorder as a diagnosis referring to the emotional struggles (anxiety and depression) that one may experience in adjusting to changes in life. The impact of change can further increase feelings of uncertainty as one struggles to

navigate the unpredictability of the outcomes of a change (Arbona et al., 2021). Change can come in many forms, ranging from small personal life changes to major social and political changes. The following discussion highlights a few of the changes and associated uncertainties that emerging adults, particularly college students, may experience.

Personal Change

Living Situation and Uncertainty. Personal change as a college student may include moving to a new location without one's parents and adjusting to a completely unknown environment. Arnett (2000) highlights residential change as being a defining feature of emerging adulthood. For many emerging adults, this stage of life may involve more residential change than was previously experienced. This is an individualized matter, as people may move a lot as children, but this is most likely the first time someone has left their home and lived semi-autonomously without adult supervision. For college students, these residential changes may involve initially living in a shared dorm space with strangers, living intimately and learning to cohabitate with people who are not family. From dormitory life, students move into other possible living situations, like a house, apartment, or sorority or fraternity. Where dorm living university-determined has rules and restrictions determined, off-campus housing is determined by lease agreements with no supervision. College students, therefore, must now learn how to care for a living space, communicate with landlords concerning any needed fixes to the property, and share more than just a bedroom with others.

Belonging and Uncertainty. When an individual first becomes a part of a new organization, they often do not know many of the people within such and must engage in social interactions to meet others. This is seen in college freshmen who come to universities as new members of the institution, unfamiliar with most of the student body and uncertain about what

their future will entail at this new place. As humans, we have a need to belong, including belonging to a new environment, such as a college or university (Baumeister & Leary, 1995). A modern, common way that individuals connect with others is with social networking sites, like Snapchat, Instagram, and Facebook. As of 2021, individuals ages 18-29 consisted of 65% of Snapchat users, 71% of Instagram users, and 70% of Facebook users (Auxier & Anderson, 2021). Participation on social media and social networking sites can negatively impact feelings of belongingness within college students as they continuously are exposed to content, including that of the lives of their peers and celebrities, and compare one's own life to that of another (Spitzer et al., 2022). As students see others on social media appearing to be social and having fun, they may negatively compare themselves to others, feel disconnected, and may have a fear of missing out (FoMO) on that which is perceived as normal for their cohort (Roberts & David, 2020).

Additionally, the media may serve as a source of stress for college students (First et al., 2021). Mass and social media help spread information about the current state of matters in the world in a fast and efficient way, which includes news that is daunting and stress-inducing. Media exposure to stories reporting on disasters and traumatic events may negatively impact mental health by increasing feelings of stress and depression (Holman et al., 2014; First et al., 2021). Moreover, the constant availability of information circulated on social media, both positive or negative, about current events can increase feelings of fear, anxiety, and uncertainty (Baerg & Bruchmann, 2022). This was recently studied within the context of the COVID-19 pandemic where individuals with more IU who consumed more information about the pandemic had an increase in health anxiety, fear of COVID-19, and more social distancing behaviors (Baerg & Bruchmann, 2022). Information about current events can be easily created and spread

through mass and social media channels. Feelings of uncertainty may also arise around the

validity of the information being spread, especially that which pertains to the political leaders

providing the information (Bertuccio & Runion, 2020; Obaid Al Saidi, 2020; Sibley et al., 2020).

Financial Uncertainty. Other sources of uncertainty for college students include present

and future financial burdens. Striving for the ability to be self-sufficient as an emerging adult

includes the ability to be financially independent (Arnett, 2000). Financial stressors pertain to

those related to finances (i.e., income, utilities, bills) and employment (Reis et al., 2021). The

economy contributes greatly to an individual's financial stress, which may be further impacted

by the related economic factors of inflation, unemployment, and increased costs of living.

Socioeconomic stressors during crises increase post-traumatic stress symptoms and rumination,

which further contributes to an intolerance of uncertainty (Celik et al., 2021). Recent economic

concerns have been greatly impacted by the results of the COVID-19 pandemic, leading to

uncertainty over future finances and employment status (Kecojevic et al., 2020). During the

pandemic, businesses closed, and hours of employment were reduced, leading to a decrease in

earned income and take-home wages. To combat such, the US government offered economic

relief loans, and stimulus checks (Internal Revenue Service [IRS], 2022).

Changes in the economy continue to impact our economy, including the rising inflation

rates and costs of living (U.S. Bureau of Labor Statistics, 2024). This is especially stressful for

college students who typically have fewer financial resources due to their student status yet are

still impacted by the rise in prices that contribute to the cost of living. Connected with such,

graduating college students who hope to enter the job market may hold concerns over future job

security with worries surrounding unemployment. As of late 2023, the unemployment rate in the

United States 3.7% with approximately 6 million individuals being unemployed (U.S. Bureau of

Labor Statistics, 2023). Thus, financial uncertainty may be of particular concern for college students.

As emerging adults, transitioning into a role of greater involvement in society, college students may begin to have an increased interest in and awareness of the happenings in the world around. They may view these social and political events from a new perspective and with greater consideration for the impact such has on themselves and their world. Further, college students may also start to consider their position within the conflict, their stance within a social divide, and the ways they can be agents of change regarding the matter.

Political Change

Political factors that are either global or domestic may contribute to the uncertainty and stress experienced by undergraduate college students. Political entities, such as a country's government, the legal decisions made by that group, and the sociocultural characteristics of a country indirectly affect but remain influential in the development of a person (Bronfenbrenner, 1979). College students are uniquely impacted by these exosystemic and macrosystemic factors due to their current stage of development and its characteristics, like gained independence and emergence into adulthood (Arnett, 2000). Consider historically the impact that the Vietnam War and the draft had on college students who actively protested on college campuses, like Kent State University, over the government's decision to enforce a draft that greatly impact that generation (Lewis & Hensley, n.d.). Governmental decisions have repercussions for all stakeholders effected, including college students beginning to define their identities as adults in society.

For college students, political change and politics more generally take on a new meaning of importance as they become more integrated into the adult sector of society. In addition to greater exploration of one's personal worldviews (Arnett, 2000), college students also begin to

consider their grander role within the world of politics. Consider the fact that a bachelor's degree typically takes between four to five years to complete, during which time elections, including the presidential election, are bound to occur in the United States. This is uniquely relevant to college students who have recently acquired the legal right to vote as they typically begin college around the age of 18. Therefore, these major elections may hold new meaning for young voters starting to understand the responsibility of being an educated voter and paying closer attention to politics than they had previously. Further, where college students may have been exposed to such matters during their younger years, they now must do so outside of the context of the beliefs of their parents and form their own. Regardless, whether elections are over legislative actions or the election of new leaders, uncertainty over their outcome and the future of the country remain until the results are announced. However, the recent rise in attitudes of suspicion over the legitimacy of election results may lead to additional uncertainty over the nation's future as it relates to a core democratic foundation of the US government – the peaceful transfer of presidential power (Anderson & Coduto, 2022; Eggers et al., 2021).

      Other political events characterized by instability and chaos can also result in uncertainty. For instance, on January 6, 2021, rioters staged an insurrection on the US Capitol building and forcibly pushed their way onto the premises while Congress was in session due to frustrations over the results of the election (Hawkins & Simon-Roberts, 2022; U.S. Department of Justice, 2021). An event of this nature had never occurred before within the US and has been considered a "moment of national uncertainty", specifically due to its connection to the election and occurring only two weeks before the 2021 presidential inauguration (p. 321, Coduto & Anderson, 2021; Anderson & Coduto, 2022). The aftermath of the event highlighted a pre-existing political divide within the general population over the election's outcome and newly

emerging beliefs about the legitimacy of the insurrectionists (Anderson & Coduto, 2022; Eggers et al., 2021). Further, due to the predominance of the participation of White rioters, discussion of racism associated with the government arose over the less aggressive security response seen at the event in comparison to the intense police response witnessed at Black Lives Matter protests (Hawkins & Simon-Roberts, 2022). For college students, the insurrection and concerns over the validity of an election of this magnitude may increase feelings of uncertainty over the stability of a nation they are emerging into (Coduto & Anderson, 2021; Anderson & Coduto, 2022).

War and Uncertainty. Where this study is predominately focused on the stressors within the US, it is important to consider the ways in which global crises may be impacting 1) a sense of stability and safety within the US and 2) college students who are either directly or indirectly associated with a country currently in conflict. Presently, violence, uncertainty, political turmoil, and divide plague the global community. As with most global matters, countries not directly involved in these events can still be impacted because of the interconnectedness of geopolitics. The direct or indirect exposure to these events may be traumatic for college students, impacting academic performance due to an increase in negative mental health outcomes, such as anxiety and stress (Artime et al., 2019). Thus, it is important to consider the effects of war on college students in regard to mental health, academic performance, and uncertainty. Notably, war and violence are presently occurring within Ukraine. This conflict has been examined within the context of its impact on college students, contributing to considerations for the unique needs of this population during tumultuous times, along with the developmental impacts over the unknown and uncertainty of one's future.

Within the stress and uncertainty of an unprecedented COVID-19 pandemic, Eastern Europe additionally experienced global unrest with increased threats from the Russian

government, who actively continue to pursue the conquest of Ukraine (Brumfiel, 2022). Such a threat was initially launched in February 2022 when Russia fully invaded Ukraine (Polovko & Glotov, 2023). Later in June 2023, Ukrainian President Volodymyr Zelenskyy announced increasing concerns over a possible threat of the destruction of the six-reactor Zaporizhzhia Nuclear Power Plant by Russian forces (Gambrell, 2023). No attack occurred, but the threat alone caused increased fear of nuclear destruction around the world. Around the same time, uncertainty and fear arose as a private military contractor, Yevgeny Prigozhin, threatened to overthrow the Russian government with personal armed troops (Associated Press, 2023). The attack, however, was aborted due to negotiations made by President Alexander Lukashenko of Belarus (Frants, 2023). Regardless, such events only increased uncertainty and worries over the future of both the nations directly involved, and the threat of involvement of other countries, including the US, who has provided Ukraine with humanitarian assistance, troops, and billions of dollars in security assistance (US Department of State, 2023; US Department of Defense, 2024).

Where these events have greatly impacted the global community, they have also had unique direct impacts on the college students residing within or near these effected areas. Similar to educational changes during the pandemic, the war initially forced Ukrainian universities to shut down and later move to an online format. Online instructional experiences during the pandemic provided instructors with the skills and confidence to employ such due to the war (Sytnykova et al., 2023). This came with unique difficulties, however, due to air raids, inconsistent electricity, and being forced to leave their homes, making it harder to access online platforms for classes (Polovko & Glotov, 2023). As such, students had to learn to adapt and engage in increased independent study.

While college students were able to adjust and continue their studies, the events of the war had negative impacts on their mental health. Preliminary studies on the impact of the Russo-Ukrainian War on Ukrainian college students and personnel have found increased fear, despair, anxiety, depression, exhaustion/burnout, loneliness, nervousness, substance use, unhealthy eating, and anger (Kurapov et al., 2023; Polovko & Glotov, 2023). Differences in these impacts were found within college role (student vs. personnel) and gender (females vs. males). For instance, students (vs personnel) had higher levels of fear-related responses and decreased resilience. Some of these negative feelings, such as anxiety, were directed towards concern over the future of their nation (Polovko & Glotov, 2023). Increased anxiety, stress, and depression were also found in Polish college students amidst the impacts of both the war and the COVID-19 pandemic (Hisato et al., 2023). Yet, students were able to still persevere with their studies during the conflict and found positives within the experience.

Within the chaos and uncertainty of war, students displayed resilience, finding the ability to continue their education online as a form of distraction, certainty, and an aspect of their life they could control (Polovko & Glotov, 2023). Additionally, having compassionate and understanding instructors positively impacted their wellbeing and ability to persevere during a tumultuous time. Lastly, the conflict forced college students to think of the future of their nation and their role within it, providing additional motivation to study so as to combat misinformation and overcome the tragedy. Thus, the experiences of college students impacted by the events of the Russo-Ukrainian War demonstrate how uncertainty over the future due to political changes can affect this population. Further, such an event offers an example of the way college students must consider the current status of politics within their nation and begin to understand its impact on their lives.

Social Change

Women's Rights and Uncertainty. Recently, the Supreme Court of the United States (SCOTUS) made a historical decision to overturn Roe v. Wade (1973) and Planned Parenthood v. Casey (1992), a court case that resulted in the national legalization of abortions and determined the unconstitutionality of the government's involvement in the decision-making process of women concerning their own medical care. In other words, the case determined that women had a constitutional right to make autonomous decisions about their medical treatment, specifically reproductive and abortion healthcare, without the interference of the US government. This case, which was decided on January 22, 1973, was overturned about 50 years later on June 24, 2022, when SCOTUS made the decision concerning the legality of abortion care to be a state and not a federal matter in Dobbs v. Jackson Women's Health Organization (2022). In doing so, several states (e.g., Arkansas, Mississippi, Missouri, Oklahoma) enacted 'trigger laws' which immediately went into effect, restricting women's access to abortion care and banning abortions, in some circumstances without any exceptions (Shapiro et al., 2022).

When that decision was made, a significant change in the rights of women in the US occurred, affecting approximately 167.5 million women including restrictions to access to abortion care (US Census Bureau, 2020). The intersectional concerns with gender, race, and socioeconomic status (SES) demonstrate that this monumental decision will have a greater impact on marginalized women, who may experience unique matters of uncertainty (Coen-Sanchez et al., 2022). Female college students may have increased concerns over the accessibility and affordability of necessary healthcare, including contraceptives, and the ability to make autonomous medical decisions, leading to feeling uncertain about their futures (Judge et al., 2017). Such uncertainties may also depend on the state in which the student resides, as the

25

SCOTUS decision provided states with the authority to dictate their own laws regarding abortion access. It is also critical to note that not all women align in their views on the matter of access to abortion care with some identifying more with pro-life or pro-choice perspectives. Therefore, for female students who agreed with the decision to overturn the legislation, they may have experienced decreased feelings of uncertainty and concern with a more optimistic view of the future over this massive social change. Thus, as with any change, opinions on the matter may vary, and the feelings associated with the different outcomes may as well.

Where the matter of reproductive rights in relation to the overturning of Roe v. Wade (1973) and Planned Parenthood v. Casey (1992) is unique to American college students, other events in connection to women's rights have occurred globally. For instance, recent movements aimed to end the oppression against women have arisen in Iran. In September 2022, Mahsa Amini, a 22-year-old woman of Kurdish descent, died while in the custody of the Iranian police (Associated Press, 2022). She had been arrested by the country's morality police who accused her of wearing the required hijab too loosely. Her death sparked outrage in Iran and later globally, as women and men actively protested; women also publicly cut their hijabs and hair in protest (Gambrell, 2022). As a result, multiple individuals had been injured, died, or were arrested. This event, which received mass global media attention, impacts both men and women generally, as well as college students uniquely. The stakes of their wellbeing and rights take on a new meaning as they become more aware of such issues politically, as well as consider the personal implications for such for them within society. These social changes may increase feelings of uncertainty over their own futures, as they navigate the arising changes occurring within their lifetime.

Intolerance of Uncertainty

Uncertainty refers to "a subjective negative state characterized by the presence of negative emotions experienced in response to unpredictable conditions and the feeling that there is not enough information to cope with them" (del Valle et al., 2022, p. 2). Within uncertainty, is a fear of the unknown (FOTU), which refers to "an individual's propensity to experience fear caused by the perceived absence of information on any level of consciousness or point of processing" (Carleton, 2016; p. 31). As such, FOTU may serve as foundational to anxiety and neuroticism. Additionally, that which is unknown pertains to the perception of an "absence of information" or, rather, not having all the details necessary to be certain about the future (Carleton, 2016; p. 31). Thus, this fear contributes to the feelings of anxiety that result from such. Having some degree of uncertainty and fear over the unknown is expected, as nothing can be predicted with complete certainty can therefore become intense and distressful (Carleton, 2016; Carleton, 2016a; del-Valle et al., 2022).

FOTU may be manifested through an intolerance of uncertainty. Fear of the uncertainty and ambiguity of the future refers to intolerance of uncertainty (IU) (Bauer et al., 2019; Shapiro et al., 2020). FOTU is related to IU, which can be considered the "dispositional incapacity to endure the aversive response triggered by the perceived absence of salient, key, or sufficient information, and sustained by the associated perception of uncertainty" (Carleton, 2016; p. 31). Additionally, IU is the "tendency to fear the unknown and to worry excessively about potential future negative outcomes, regardless of the probability of their occurrences" (Arbona et al., 2021, p.702). Individuals will engage in adaptive or maladaptive coping to manage their IU and regain a sense of control over the future, including fear, avoidance, distraction, anger, mistrust,

rumination, denial, fatigue, and worry (Carleton, 2016; Carleton, 2016a; Boswell et al., 2017; Freeston et al.; 2020; Satici et al., 2020; Shihata et al., 2017; Rettie & Daniels, 2020).

IU has been found to be connected to various clinical and non-clinical psychological concerns. IU is considered a transdiagnostic maintaining trait associated with various internalizing disorders, including generalized anxiety, post-traumatic stress, obsessive-compulsive, panic and panic attacks, social anxiety, and depression (Shihata et al., 2017; Shapiro et al., 2020). In non-clinical populations, it may increase such emotions as worry, frustration, anger, rage, helplessness, guilt, sadness, and grief (Freeston et al., 2020; Shapiro et al., 2020). McEvoy and Mahoney (2012) found that IU was significantly related to neuroticism, and symptoms of social phobia, panic disorder, agoraphobia, OCD, GAD, and depression. Within the context of COVID-19, greater IU was correlated with higher mental symptoms, including anxiety, depression, and insomnia (AlHadi et al., 2021). This may in part be due to the variety of uncertainties individuals faced because of the pandemic.

IU during Disaster

Natural disasters negatively impact one's mental health (Goldmann & Galea, 2014; Rettie & Daniels, 2020). Experiencing the trauma of a natural disaster increases the likelihood of developing such disorders as Major Depressive Disorder (MDD), Post-Traumatic Stress Disorder (PTSD), and substance use (Goldmann & Galea, 2014). Certain risk factors, like previous mental health concerns, a limited support system, severity of the exposure to the trauma and post-disaster stressors (e.g., illness, financial hardship, displacement, physical ailments) may influence the impact of the trauma and the trajectory of recovery from such within an individual. For instance, consider the effects of the recent COVID-19 pandemic. IU predicted psychological distress in college students in India during the pandemic (Varghese & Delariate, 2021). AlHadi

and colleagues (2021) found greater associations of depression, anxiety, and stress with being female, younger in age, COVID-19 contact history (confirmed, uncertain, and suspected), and prior mental illness in a Saudi Arabian population. Other risk factors for increased psychological impact from COVID-19 in college students included being a woman, less than average income SES, spending more than eight hours on a device, being 18-24 years old, and knowing someone who was infected with COVID-19 (Browning et al., 2021). Thus, it is essential to consider the impact that a disaster like the pandemic may have long-term on one's mental health and within these populations seen as being most at risk.

Uncertainty may increase the impact of disaster-related effects (Galea & Goldmann, 2013; Rettie & Daniels, 2013). For example, there were and remain several unknowns regarding the pandemic and its impact. During the height of the pandemic, these unknowns included the efficacy of the measures used to combat the virus, worry over the possibility of loved ones becoming ill, the trajectory of the pandemic, and the validity of the information being shared about it. Concerning COVID-19 and IU, studies have shown increases in psychological distress, maladaptive behaviors, and clinical implications, such as panic disorder, anxiety, and depression (Satici et al., 2020; Qui et al., 2020; Rajkumar, 2020). In Turkey, fear and rumination were found to be responses to uncertainty regarding the pandemic (Satici et al., 2020). Prior levels of IU and choice in coping strategies were found to significantly impact mental health outcomes within the pandemic (AlHadi et al., 2021). Thus, unprecedented times may negatively impact the mental health outcomes of individuals effected by such, including feelings of uncertainty. It is important for mental health professionals, including counselors and counselor educators, to better understand these factors both within and outside of the context of disasters to better work with clients and students to lessens concerns over uncertainty.

IU during the Mundane

Uncertainty exists outside of the context of major natural disasters and unprecedented events (del Valle et al., 2022). Much uncertainty resides within the more mundane factors of daily living that may also result in as much distress as caused by major events, but within a different context. The most basic of upcoming events like going to work, running errands, visiting a friend or family, or simply being in public can result in feelings of uncertainty. Each of these activities has their own unknown elements, such as a lack of predictability over how the activity will go, if it will be successfully accomplished or completed, or if any obstacles will arise, and if so, how they will be navigated. For instance, one who is embarking on a trip may have uncertainty over their travel plans as it is completely unpredictable how those plans will unfold. Obstacles in the event of traveling include travel delays, lost reservations, cancelled flights, lost luggage, bad weather, and turbulence. Thus, the uncertainty of an event as simple as traveling can increase worry, fears, and anxiety within the traveler.

The typical events of life that each person encounters regularly encompass a degree of uncertainty as nothing is fully and completely predictable. Struggles with these uncertainties can lead to IU and reactions of distress (Shapiro et al., 2020). Such reactions relate to the presenting concerns that counselors may see within their clients, including symptoms connected to various mental disorders, which are highly prevalent within the US (National Alliance on Mental Illness [NAMI], 2022). Approximately 1 in 5 adults (52.9 million) will experience a mental illness; 1 in 20 adults (14.2 million) will experience a serious mental illness. The three largest demographic groups with the highest annual prevalence rates of mental illness in US adults include individuals who identify as lesbian, gay, or bisexual (47.4%), non-Hispanic mixed/multiracial (35.8%), or non-Hispanic White (22.6%). Of mental health disorders experienced by adults in the US, the

highest prevalence rates are that of anxiety disorders at 19.1% or about 48 million people. IU is significantly connected to the maintenance and development of internalizing disorders, such as GAD, MDD, OCD, and SAD (Shihata et al., 2017). Thus, it is important for counselors and counselor educators to be knowledgeable about the ways in which such may manifest in their clients or students. Better understanding the impact and reactions people may have due to IU can help inform the ways in counselors and counselor educators interact or treat their students or clients.

Additionally, health-related concerns continue to be prominent. These concerns may be especially poignant if one has a pre-existing health condition that decreases their immune system and increases one's chances of contracting illnesses, and may increase anxiety, decrease daily functioning, and lower the physical and environmental (i.e., finances) wellbeing of an individual, a relationship that has been found to be moderated by IU (Shoychet et al., 2022). Additionally, higher IU was found to have a strong relationship with anxiety sensitivity connected with COVID-19, and increased the likelihood of catastrophizing worries, stockpiling, and cleaning (Saulnier et al., 2022). It is unknown to what extent the level of impact the pandemic will have both short- and long-term in various areas (health, financial, economic, personal). Due to these remaining uncertainties, it is important to consider their implications on mental health, particularly anxiety.

Anxiety

Anxiety pertains to concerns over future threats of danger and can act as a protective factor against such (Majali, 2020). Experiencing a small amount of anxiety can be a healthy and protective response to concerns within one's lived experiences. It is the "suite of anticipatory affective, cognitive, and behavioral changes in response to uncertainty about a potential future

threat" (Grupe & Nitschke, 2013 p. 1). Anxiety can further be conceptualized as either trait or state, where state anxiety refers to a more temporary form of anxiety experienced during specific situations, and trait anxiety is more permanent and generalized, applicable to several situations (Spielberger, 1972). In addition, it can be a motivating factor to help manage the stress commonly experienced in life. For instance, one might be a little anxious about doing well on an upcoming exam, and the anxiety over such will encourage the individual to study. However, excessive anxiety can cause increased distress within an individual and negatively impact one's mental wellbeing, leading to a more pathologized form of anxiety (APA, 2022).

Anxiety and Emerging Adulthood

One group to experience unique sources of stress, which may impact anxiety, are emerging adults (Reis et al., 2021). Within this group, college students may be especially impacted by such due to the additional stress of navigating the developmental tasks of emerging adulthood and the rigorous academic expectations of a higher education degree. The American College Health Association (ACHA) conducts regular reports on the status of wellbeing amongst college students (undergraduates, graduates, and professionals) within the United States. In its most recent report, the National College Health Assessment III (ACHA, 2023) consisted of a response sample of about 78,000 college students (71.4% identifying as undergraduate students) and examined a plethora of health-related factors. ADHD or ADD (12.6%), anxiety (34%), depression (24.3%), sleep difficulties (23.4%), and stress (40.2%) were among the top five concerns identified within the sample of all respondents as having the greatest impact on academic performance. The report also assessed the prevalence of diagnosed chronic mental health conditions. Most students reported being diagnosed with an anxiety disorder (35.8%), followed by depression (27.9%) and ADD/ADHD (12.5%). Thus, the stress that students

experience within college uniquely impacts mental health and may increase levels of clinical anxiety.

Anxiety and Mental Health

Rates of anxiety and depression have increased because of the recent COVID-19 pandemic (del Valle et al., 2022). Disordered-levels of anxiety can be best understood within the Diagnostic and Statistical Manual, 5th Ed (DSM-5-TR), which categorizes a series of disorders as anxiety disorders (APA, 2022). Physical and emotional systems are connected to anxiety (NAMI, 2017). Physical symptoms of anxiety include shortness of breath, racing heartbeat, sweating, tremors, headaches, fatigue, insomnia, and upset stomach. Emotional symptoms of anxiety include apprehension, dread, tension, restlessness, irritability, and hypervigilance. Additionally, anxiety disorders are the most prevalent mental disorders experienced yearly by adults in the US (ADAA, n.d.).

Anxiety disorders may be related to specific incidents (i.e., social situations and Social Anxiety Disorder) or be more general, where anxiety is experienced in a higher variety of occurrences (i.e., Generalized Anxiety Disorder; GAD) (APA, 2022). GAD is a psychiatric disorder characterized by excessive, uncontrollable worry and anxiety with certain physiological symptoms (headaches, fatigue, muscle tension, irritability, trouble concentrating, restlessness, trouble sleeping) that have resulted in significant impairment in various areas of functioning for the individual. Worry is "apprehensive thoughts about future events with uncertain and uncontrollable outcomes" (Liu & Zhong, 2020, p.1). Worry is seen as a central component of anxiety disorders, such as GAD, in which the worry one feels over such uncertainty leads to feelings of anxiety. Thus, individuals may worry about the uncertainty of the future, which leads to feelings of anxiety. This is especially prevalent given the current economic, political, and

social uncertainties faced within the world, and the prevalence of adults suffering from anxiety disorders presently in the US.

Anxiety and Uncertainty

Anxiety is significantly related to IU in that IU further perpetuates and maintains symptoms of worry and anxiety both clinically and non-clinically (Dugas et al., 1997; Qui et al., 2020; Rajkumar, 2020; Satici et al., 2020). However, IU and anxiety may also contribute to resiliency (Duru et al., 2022). IU has been found to be connected to anxiety within the context of difficulties making career-based decisions (Arbona et al., 2021). When addressing aspects of IU in treatment, individuals had a clinically significant decrease in GAD scores and worry (Chigwedere & Moran, 2022). Models of anxiety, such as the IUM, demonstrate a connection between IU and anxiety (Behar et al., 2009). The basic components of the IUM are IU, negative problem orientation, cognitive avoidance, and positive beliefs about worry (Behar et al., 2009; Groves et al., 2019). Individuals with GAD will develop increased worry over the ambiguity of future events or IU through these elements. In addition, worry and anxiety increase and are maintained through the two feedback loops of negative problem orientation and cognitive avoidance (McEvoy & Mahoney, 2011). Further, research on the IUM has found a positive relationship between IU and worry that is mediated by negative problem orientation and positive beliefs of worry (Groves et al., 2019). Thus, for one who struggles with such matters of anxiety, worry, and uncertainty must learn how to adaptively cope with these feelings.

Anxiety and Coping

Individuals may regularly engage in various coping strategies to reduce feelings of anxiety. Having more adaptive coping abilities can moderate negative emotions like anxiety and IU (AlHadi, 2021). Based off Lazarus and Folkman (1984), Guo and Shen (2021) define coping

as "the cognitive and behavioral efforts made by an individual to control the imbalance when external or internal demands exceed the resources available to the individual" (p.5). Coping strategies can be problem-focused, emotion-focused, or dysfunctional (Garcia et al., 2018). Problem-focused coping pertains to engaging in problem-solving actions to reduce stress, while emotion-focused coping pertains to coping strategies that aim to reduce emotions from anxiety, like using humor. Dysfunctional coping refers to maladaptive coping strategies, like denial or substance use. Examples of more adaptive forms of coping include using emotional support, humor, acceptance, positive reframing, and religion (Carver, 1997).

Religious coping (i.e., prayer) is an adaptive form of coping that is effective in reducing anxiety (Achour et al., 2021). It has further been found to significantly reduce anxiety related to IU (Howell et al., 2019). Additionally, spirituality has also been found to decrease feelings of anxiety (Ano & Vasconcelles, 2005; Ramos et al., 2014). Spirituality is related to religious coping in that an individual may hold spiritual beliefs outside of or within the context of an organized religion (Burney et al., 2017; Hill & Pargament, 2008). Spirituality, then, may also be an adaptive form of coping with uncertainty by regaining some sense of control by placing the control within another (Howell et al., 2019). Thus, it may serve as a variable that mediates the relationship between anxiety and IU, and a possible source of coping for those struggling with such.

Spirituality

In research, defining the specific delineation between spirituality and religiosity is quite difficult and has caused various researchers to consider the differentiation themselves (Hill et al., 2000; Zinnbauer et al., 1997). Religiosity and spirituality are similar constructs with important distinctions that are often used interchangeably (Hill et al., 2000). For example, religion can be

considered a more formal, fixed, and institutionalized belief system, whereas spirituality pertains to a broader idea of beliefs that is more individual, experiential, less formal, and subjective (Williams-Smith & McMillian, 2022; Burney et al., 2017; Hill & Pargament, 2008). However, one can also be spiritual and religious, finding an aspect of spirituality within their religiosity (Schnell, 2012). This further makes a clear distinction between the two difficult to define.

The current study aimed to define spirituality under the following definitions. Burney et al. (2017) define spirituality as, "the process of seeking personal authenticity, genuineness, wholeness as well as developing a greater connectedness to self and others through relationships and community; refers to deriving meaning, purpose, and direction in life" (p.1481). Delaney et al. (2011) further define spirituality as, "multidimensional, encompassing a personal, interpersonal, and transpersonal context consisting of three interrelated domains – self-discovery, relationships, and eco-awareness" (p.11). The Association for Spiritual, Ethical, and Religious Values in Counseling (ASERVIC) even released the, "ASERVIC White Paper" (n.d.) to provide counselors with a clearer understanding of the distinction between the two variables. It offers the unique insight into spirituality as being a "tendency that moves the individual toward knowledge, love, meaning, peace, hope, transcendence, connectedness, compassion, wellness, and wholeness" (p 1). These are certainly all values that can be dictated by the ideology of a religion.

Therefore, spirituality is more than just one's religious beliefs, but it also does not exclude holding such either (ASERVIC, n.d.). In the current study, spirituality refers to the personalized construct centered around the search for and understanding of one's purpose and life's meaning in whatever way an individual defines that may or may not include religion or religious identity. Due to the subjective and personal nature of spirituality and spiritual beliefs, the current study aimed to have participants self-define what spirituality meant to them, while

recognizing the limitation provided by the selection of a measure that provided a directive in the definition of such (more discussed in limitations).

Spirituality and Wellbeing

Individuals may find that holding spiritual beliefs helps reduce psychological distress. Spirituality has been found to have a significant and positive relationship with psychological wellbeing (Burney et al., 2017). Portnoff and colleagues (2017) found that spirituality significantly decreased depression and suicidal ideation in participants from the US, China, and India, which also showed that spirituality acted as a strong protective factor across various spiritual traditions. For women in the military, faith (which can be connected to religion/spirituality) was reported as a source of strength during deployment (Berkel et al., 2019). Incorporating spirituality into mental health treatment (i.e., Cognitive Behavioral Therapy; CBT) has significantly decreased GAD symptoms (Ramos et al., 2014). For individuals with cardiovascular disease, participating in an individualized spirituality-based intervention significantly increased their quality of life (Delaney et al., 2011). In college students, spirituality was found to be a positive coping skill against the academic stressors associated with college (Ekwonye et al., 2020; Betts et al., 2023). Spirituality may also be connected to IU, often helping decrease feelings of distress by placing worries over the future within the control of another (Howell et al., 2019).

Spirituality and IU

Few studies have explored the relationship between IU, anxiety, and spirituality, especially among undergraduate college students. Spirituality and religiosity allow one to perceive unknown or uncertain future events as being within the control of a higher power or some other control factor specific to their belief system (Howell et al., 2019). In this sense, an

individual is viewing the uncertainty and ambiguity of the future as truly out of their own control and being fully within that of another. Therefore, one can find strength from spirituality to help cope with IU.

Past studies have explored the relationship between IU, religiosity, spirituality, and psychological distress. Spirituality has been proposed as being incorporated into a cognitive model of worry and intolerance of uncertainty (Rosmarin et al., 2011). Bardeen and Michel (2017) found a significant interaction between IU, depression, and religiosity, in which a positive relationship between IU and depression became greater at lower (vs. higher) levels of religiosity. Additionally, coping-based motives of religion were associated with more significant depression in participants with greater than average levels of IU and with less depression in participants with less than average IU (Howell et al., 2019). For individuals with greater than average IU, religiosity was associated with less depression and lowered fear of negative evaluation.

Concerning the COVID-19 pandemic, various groups turned to religious and spiritual beliefs to cope with the anxiety of the situation. Muslim academics who used religious coping strategies had significant decreases in anxiety (Achour et al., 2021). Positive religious coping significantly moderated feelings of hope and wellbeing during the pandemic in individuals in Colombia and South Africa (Counted et al., 2020). Adolescents in Turkey turned to religious coping to help with feelings of anxiety and isolation during the pandemic (Kadiroğlu et al., 2021). Thus, incorporating spirituality and religious beliefs and practices helped to reduce negative psychological emotions associated with the stress of the pandemic and may apply to other disasters, like financial distress and economic uncertainty, which are unique concerns for emerging adults.

Spirituality and College Students

Identity exploration is one of the five factors of emerging adulthood (Arnett, 2015). One component of identity exploration includes the development of a personal worldview, which encompasses personal values, morals, and existential beliefs. Growing up, people are influenced by the culture of their parents and the community they have been placed within (Bronfenbrenner, 1979; Arnett, 2015). This includes an expected and rather forced adherence to the spiritual practices and beliefs of their parents or parental figures (Betts et al., 2023). The collegiate environment, with its own culture, represents a societal microcosm away from parental influences, and therefore offers students a space to dive deeper into personally held beliefs (Betts et al., 2023; Mayhew et al., 2020). Exposure to different people, viewpoints, and material provided in college courses challenges their lived experiences and forces one to reconsider the universality of such (Nordstrom, 2015; Mayhew et al., 2020). Students may purposefully seek to expand their knowledge of other belief systems through the coursework offered in colleges (Betts et al., 2023). Additionally, these new sources of information add to the fabrication of newly developed beliefs (Mayhew et al., 2020). Thus, college students begin to explore new sources of meaning-making within the context of their newly restructured worldview (Arnett, 2015; Mayhew et al., 2020).

Existential beliefs, such as meaning making and purpose, are connected to spirituality, which may be an important element in the self-exploration that occurs in emerging adulthood (Burney et al., 2017; Ekwonye et al., 2020). Having left the environment curated by their parents, college students are provided with the opportunity to explore their own spirituality and to integrate such into a personal worldview that may or may not be aligned with what they were raised in. The decision to continue the practices of their family or to explore other possibilities is a personal choice that must be made by the emerging adult. Students may be motivated to engage

in faith, religion or spirituality for a variety of reasons. Betts and colleagues (2023) identified six themes of motivation amongst college students regarding their choice to engage in faith, spirituality, or religion. Out of the six, the top three (listed in ranked order) included purpose, for others, and personal growth. Within the theme of 'purpose', students identified their faith, spirituality and/or religion as a source of meaning, and a coping mechanism against adversity, anxiety, stress, and the uncertainties in life. For students who identified 'for others' as a motivation of engagement included the sense of belonging to a community of like-minded individuals, as well as the desire to share their faith with others. Lastly, increasing one's knowledge and understanding of both one's own and other denominations of faith, spirituality, and/or religion served as motivation for engagement.

For a new student entering the new environment of their college, their spiritual/religious identity can serve as a protective factor against the stressors of adjusting to college, such as belonging, by providing one access to a familiar community (Betts et al., 2023). Consider the fact that many colleges have religious/spiritually affiliated student organizations, such as Hillel (Judaism) or Cru (Christian). This provides students with the opportunity to connect with like-minded individuals in a way that is less organic than simply meeting strangers. Again, though, this is an environment that a student must seek out for themselves and choose to pursue involvement in on their own.

Therefore, spirituality, held either within or outside of religion, may serve as a protective factor against the anxiety and the uncertainties of the future. Further, spirituality is an important aspect of the identity exploration found within emerging adulthood (Arnett, 2015; Ekwonye et al., 2020). For college students, spirituality can serve as a source of meaning, purpose, and strength in coping with struggles and stress (Ekwonye et al., 2020; Betts et al., 2023). It is

important for counselors and counselor educators to consider the implications that anxiety, IU, and spirituality may have in assisting college students in navigating the demands of college.

Summary: IU, Anxiety, Spirituality, and College Students

Research has shown connections between IU, religiosity, and internalizing symptomology in different populations but has not yet explored the relationship between IU, spirituality, and anxiety in college undergraduates, specifically with consideration for mental health professionals, such as counselors (Bardeen & Michel, 2017; Howell et al., 2019; Rosmarin et al., 2011). Counselors have an ethical obligation to be multiculturally competent and able to understand and incorporate the worldviews of their clients into therapy, including their spiritual beliefs (ACA, 2014; Ratts et al., 2016; Robertson & Young, 2011). Therefore, it is important to study how counselors can use their client's spirituality to combat IU, a critical transdiagnostic trait in developing and maintaining internalizing disorders. Further, despite research showing that college students need mental health services, many do not receive the treatment they deserve (Brown, 2020). Therefore, the current study aimed to explore the relationship between spirituality, anxiety, and IU within the undergraduate college population while considering the implications of the results within the context of the counseling profession.

Definition of Terms

Emerging Adulthood: the critical stage of development during the ages of 18 to 25 characterized by a continuation of the identity exploration that began in adolescence, though now with an increased level of independence (Arnett, 2000).

Uncertainty: "A subjective negative state characterized by the presence of negative emotions experienced in response to unpredictable conditions and the feeling that there is not enough information to cope with them" (del Valle et al., 2022, p. 2).

Intolerance of Uncertainty (IU): Distress surrounding the ambiguity and unpredictability of the future (Bauer et al., 2019; Shapiro et al., 2020).

Anxiety: Concerns over future threats of danger and can act as a protective factor against such (Majali, 2020)

Spirituality: The personalized construct centered around the search and understanding of one's purpose and life's meaning in whatever way an individual defines that may or may not include religion or religious identity (ASERVIC, n.d.; Burney et al., 2017; Delaney et al., 2011)

Chapter 2

Methodology

The purpose of this quantitative study was to explore the relationship between spirituality, anxiety, and intolerance of uncertainty (IU) among college undergraduates. Specifically, the study sought to determine if spirituality moderated the relationship between IU and anxiety. The variables of the study included the independent variables of IU and spirituality, the moderator variable of spirituality, and the dependent variable of anxiety. Past research has demonstrated empirically significant relationships between these variables separately, such as IU and anxiety (Dugas et al., 1997; Shihata et al., 2017; Rajkumar, 2020; Satici et al., 2020; Qui et al., 2020;), IU and spirituality (Rosmarin et al., 2011) and spirituality and anxiety (Ano & Vasconcelles, 2005; Ramos et al., 2014) within undergraduate college students. Thus, the present study expanded upon this existing literature while also addressing a research gap concerning the examination of all three of these variables together within this population.

Research Questions

The research questions for the current study include:

1. What is the relationship between anxiety, IU, and spirituality in undergraduate college students?

2. Does spirituality moderate the relationship between anxiety and IU in undergraduate college students?

Participants

To estimate sample size, G*Power 3 software (Faul et al., 2007) was used to conduct a power analysis for a linear multiple regression (R^2 increase) with 3 predictors. To reduce Type I and Type II errors, input parameters for analysis included a medium effect size of 0.15, a = 0.05,

and power of 0.95. The results of the power analysis showed a required total sample size of n = 119. The participants of the present study were undergraduate college students from a Southern university in the United States. To be eligible to participate in the study, students had to be currently enrolled at the institution and be at least 18 years of age.

In total, 169 college undergraduate students participated in the study. Only participants who answered 80% of the questions were included. Of this total, 25 participants were removed due to incompletion, resulting in a final total of 144 participants (see Table 1). Regarding demographic information, two participants did not disclose any information on the demographic questionnaire, and one participant did not report their year in school but completed the other questions. The age range of participants was 18-23 with an average (*M*) age of 19.73 (*SD* = 1.35). Most participants identified as female (70.1%, n = 101) with 27.8% (n=40) identifying as Male, 0.7% (n=1) identifying as Non-binary/third gender, 0% preferring not to say, and 0% identifying as Other. Concerning racial identity, 0% identified as American Indian/Indigenous Group/Alaska Native, 2.1% (n=3) identified as Asian/Asian American/Pacific Islander, 6.3% (n=9) identified as Black/African American, 0.7% (n=1) identified as Hispanic/Latino/Latina, 0% identified as Middle Eastern/Arab, 87.5% (n=126) identified as White/Caucasian, 1.4% (n=2) identified as Multiracial/Biracial, and 0.7% (n=1) identified as Other. Regarding year in college, 31.9% (n=46) of participants were 1st Year/Freshman, 23.6% (n=34) of participants were 2nd Year/Sophomore, 18.1% (n=26) of participants were 3rd Year/Junior, 21.5% (n=31) of participants were 4th Year/Senior, and 2.8% (n=4) of participants were Fifth year or above. In summary, participants were on average 19.73 years of age, and predominantly identified as female, White/Caucasian and being a 1st year/Freshman in college.

Participants were also asked about their religious identity, specifically if they identified with a religion and, if so, which one. This was self-identified by participants and provided through a write-in format; participants did not select pre-written options. Out of 142 of the participants who completed the demographics questionnaire, 116 (80.6%) identified with a specific religion. Most participants who identified with a religion identified themselves as Christian (n=115) with one participant identifying as Hindu. With a write-in format, answers ranged from the identification of specific denominations of Christianity to a more general 'Christian' or 'Christianity' response; thus, 89 participants answered either 'Christian' or 'Christianity' without including any more specifying information as some participants answered with a specific denomination and the word 'Christian/Christianity'. Of the remaining 33 participants who identified with Christianity, the specific Christian denominations reported included Catholicism/Catholic/Roman Catholic (n=12), Baptist (n=4), Nondenominational Christian (n=4), Methodist (n=3), and Episcopal (n=1); two participants reported being 'Protestant Christian'.

Table 1

Demographic Information

Demographic	Identity	N	Percentage
Gender	Male	40	27.8%
(n = 142)	Female	101	70.1%
	Non-binary/Third	1	0.7%
	Prefer Not to Say	0	0%
	Other	0	0%
Race/Ethnicity	American Indian/Indigenous Group/Alaska	0	0%
(n = 142)	Native	3	2.1%
	Asian/Asian American/Pacific Islander	9	6.3%
	Black/African American	1	0.7%
	Hispanic/Latino/Latina	0	0%
	White/Caucasian	126	87.5%
	Middle Eastern/Arab	2	1.4%
	Multiracial/Biracial	1	0.7%

	Other		
Year in College	1st Year/Freshman	46	31.9%
(n = 141)	2ndYear/Sophomore	34	23.6%
	3rdYear/Junior	26	18.1%
	4th Year/Senior	31	21.5%
	5th Year or Above	4	2.8%
Religious	Yes	116	80.6%
Identity	No	26	18.3%

Procedure

Following IRB approval, a Qualtrics survey was created, which included the information

letter (See Appendix A), an opportunity to consent to participation, the instruments of the study,

and a demographics questionnaire. All data was collected anonymously through the Qualtrics

survey as no personal or identifiable information was collected, including IP addresses. Data

collection methods included convenience and snowball sampling. The Qualtrics survey was

distributed along with the IRB approval letter in an email to instructors within the College of

Education at the university who taught undergraduate courses to be forwarded to those whom

they taught. Additionally, the Qualtrics survey was uploaded onto SONA, a data collection

software, in which undergraduate students taking courses within the College of Education could

access research surveys and participate for course credit, which was 0.5 credits for the present

study. Data collected by participants who accessed the study through SONA were collected

confidentially, as personal information of participation was recorded by the software in order to

grant credit. Only the primary researcher was able to access such information, however, no

personal information regarding how a participant answered the survey was collected, as the

information was still anonymously gathered through Qualtrics.

Participants either accessed the survey either through an instructor or through SONA.

Both methods of distribution directed participants to the same survey on Qualtrics. After giving

consent, participants completed three surveys, including one on IU (Intolerance of Uncertainty

Scale; Buhr & Dugas, 2002; Freeston et al., 1994), anxiety (Beck Anxiety Inventory; Beck et al.,

1988), and spirituality (Spiritual Wellbeing Scale; Ellison, 1983; Paloutzian & Ellison, 1982), as

well as a demographic questionnaire (see Appendices B-E). The survey took participants

approximately 15-30 minutes to complete. For participants who accessed the survey through

SONA, the primary researcher granted them participation credit through the SONA platform that

notified the researcher of such.

Measures

Intolerance of Uncertainty Scale

Intolerance of Uncertainty was measured using the Intolerance of Uncertainty Scale

(IUS; Buhr & Dugas, 2002; Freeston et al., 1994) (see Appendix B). The scale was originally

created in French (Freeston et al., 1994) and later translated into English (Buhr & Dugas, 2002).

The 27-item self-report measurement assesses feelings towards uncertainty, ambiguity, and the

unknowns of the future. Examples of items include, "It's unfair not having any guarantees in

life"; "When I am uncertain, I can't go forward"; "One should always look ahead so as to avoid

surprises". Items are scored on a 5-point Likert scale ranging from 1 ("Not at all characteristic of

me") to 5 ("Entirely characteristic of me") with scores ranging from 27 to 135 and higher scores

indicating higher levels of IU. The English-version of the IUS has been found to have strong

psychometric validity and reliability, including strong internal consistency (α =.94), and good

five-week test-retest reliability ($r = 0.74$) (Buhr & Dugas, 2002). The reliability findings of the

present study were consistent with past research ($\alpha = 0.95$). See Table 2 for the means, standard

deviations, and reliability statistics of all measures used in the present study.

Beck Anxiety Inventory

Anxiety was measured using the Beck Anxiety Inventory (BAI; Beck et al., 1988; see Appendix C). The BAI is a 21-item self-report measure that assesses common symptoms of anxiety, including numbness, indigestion, and nervousness. Items are scored on a 4-point Likert scale ranging from 0 ("Not at all") to 3 ("Severely – I could barely stand it"), with higher scores indicating greater severity of anxiety. Scores range from 0-63 and are interpreted according to four levels of anxiety that correspond with a total score range: minimal anxiety (0-7), mild anxiety (8-15), moderate anxiety (16-25) and severe anxiety (26-63). The BAI has been found to have good internal consistency (α =.92) and one week test-retest reliability ($r = 0.75$) (Beck et al., 1988). Additionally, the BAI was found to have good psychometric properties within a non-clinical, undergraduate population (Creamer et al., 1995). The BAI has also been found to have good convergent validity with other measures of anxiety, including the Hamilton Anxiety Rating Scale ($r = 0.51$), the State-Trait Anxiety Inventory ($r = 0.47$-0.58), the anxiety portion of the Symptom Checklist-90 ($r = 0.81$), and good divergent validity from measures of depression like the Hamilton Depression Inventory ($r = .25$) (Fydrich et al., 1992; Julian, 2011). The reliability findings of the present study were consistent with past research ($\alpha = 0.93$) (see Table 2).

Spiritual Wellbeing Scale

Spirituality was measured using the Spiritual Wellbeing Scale (SWBS; Paloutzian & Ellison, 1982; Ellison, 1983; see Appendix D). The SWBS is a 20-item self-report measure that assesses perceived spiritual wellbeing and consists of two subscales: Religious Wellbeing (RWBS; relationship to, satisfaction with, and connection to God) and Existential Wellbeing (EWBS; life satisfaction and purpose). Odd numbered items were utilized to compute the RWBS score with scores ranging from 10-60 on three levels: sense of unsatisfactory relationship with God (10-20), moderate sense of religious wellbeing (21-49), and positive view of one's

relationship with God (50-60). Even numbered items were utilized to compute the EWBS score

with scores ranging from 10-60 on three levels: low satisfaction with one's life and possible lack

of clarity about one's purpose in life (10-20), moderate level of life satisfaction and purpose (21-

49), and high level of life satisfaction with one's life and a clear sense of purpose (50-20). All

items on the SWBS were utilized to compute the overall spiritual wellbeing score. On the

SWBS, items are scored on a 6-point Likert scale with scores ranging from 1 (Strongly Agree) to

6 (Strongly Disagree). Scores range from 20-120 with higher scores indicating greater spiritual

wellbeing and are interpreted according to 3 levels of perceived wellbeing: a sense of low (20-

40), moderate (41- 99), and high (100-120) sense of spiritual wellbeing. The SWBS, which has

been normed against undergraduate college students of varying spiritual identities, has shown

strong psychometric properties (Paloutzian, 2021), including good reliability, and good face

validity. The test-retest reliability across four studies with 1-10 weeks between tests showed

coefficients of .96, .99, .96, .88 (RWBS), .86, .98, .98, .73 (EWBS), and .93, .99, .99, .82

(SWBS). Additionally, high internal consistency was found across seven samples with

coefficients ranging from .82-.94 (RWBS), .78-.86 (EWBS) and .89-.94 (SWBS) (Bufford et al.,

1991; Paloutzian & Ellison, 2021). Regarding validity, all three scales have been shown to

positively correlate with positive self-concept, sense of purpose in life, physical health, and

emotional adjustment, as well as negatively correlate with ill health, emotional maladjustment,

and lack of purpose in life (Bufford et al., 1991; Paloutzian & Ellison, 2021). The reliability

findings of the present study were consistent with past research for the SWBS ($\alpha = 0.94$), and the

RWBS ($\alpha = 0.97$) and EWBS ($\alpha = 0.88$) subscales (see Table 2)

Table 2

Scale Reliability Statistics

Scale	N	Cronbach's Alpha	Mean	Standard Deviation
Intolerance of Uncertainty Scale (IUS)	27	.945	71.97	19.86
Beck Anxiety Inventory (BAI)	21	.926	39.90	12.36
Spiritual Wellbeing Scale (SWBS)	20	.944	48.34	19.41
Religious Wellbeing Scale (RWBS)	10	.966	24.17	13.93
Existential Wellbeing Scale (EWBS)	10	.882	24.45	8.31

Note: N = number of items on scale

Demographic Questionnaire

Participants also completed a demographic questionnaire (see Appendix E). The information collected included age, race/ethnicity, gender, year in college, and religious identification. This questionnaire was created by the researcher for the purpose of gathering demographic information of the participants.

Data Analyses

To test the research questions, a simple moderation analysis, which included Pearson's correlation and a linear regression, was conducted (Fairchild & MacKinnon, 2009). A moderation analysis assesses the impact of a third variable (interaction variable) within the linear relationship of two other variables (Fairchild & MacKinnon, 2009). Specifically, it assesses whether the relationship between the two variables varies depending upon the level of the third variable (e.g. higher or lower). In assessing for moderation, it is hypothesized that the linear relationship between the two variables may be different depending upon the level of a third variable. To assess for such, a linear regression analysis is first conducted to assess the contribution of the independent variables on the dependent variable. Next, a second linear regression analysis is conducted to assess the effect of the interaction variable on the dependent variable, which determines the significance of its moderating impact on the relationship between

the independent variable and dependent variable. For the present study, the independent variables were IU and spirituality, the moderator variable was spirituality, and the dependent variable was anxiety. Descriptive statistics were also conducted and reported.

Chapter 3

Results

The purpose of this study was to explore the relationship between spirituality, anxiety, and intolerance of uncertainty (IU) among undergraduates. Specifically, the study considered how spirituality interacted and moderated the relationship between IU and anxiety. There were two research questions for the current study: 1) What is the relationship between anxiety, IU, and spirituality in undergraduate college students? And 2) Does spirituality moderate the relationship between anxiety and IU in undergraduate college students? Undergraduate participants of the study completed a Qualtrics survey that consisted of the Intolerance of Uncertainty Scale (IUS; Freeston et al., 1994; Buhr & Dugas, 2002), the Beck Anxiety Inventory (BAI; Beck et al., 1988b), the Spiritual Wellbeing Scale (SWBS; Paloutzian & Ellison, 1982; Ellison, 1983), and a demographics questionnaire. A Pearson *r* bivariate correlation analysis and a linear multiple regression analysis were conducted to examine the data collected and the guiding questions. This section discusses the results of these statistical analyses.

Research Questions and Results

Research Question 1 (RQ1): What is the relationship between anxiety, IU, and spirituality in undergraduate college students?

On average, participants demonstrated severe levels of anxiety (M = 39.69, SD = 12.47), a moderate sense of spiritual wellbeing (M = 48.63, SD = 19.55), and greater levels of IU (M = 72.45, SD = 19.20). Spiritual wellbeing also assessed for religious wellbeing (RWBS) and existential wellbeing (EWBS). On average, participants demonstrated a moderate sense of religious wellbeing (M = 24.17, SD = 13.88) and moderate level of life satisfaction and purpose (M = 24.46, SD = 8.29).

A Pearson *r* bivariate correlation analysis was conducted to test the relationship between anxiety, IU, and spirituality in undergraduate college students (See Table 3). Anxiety and IU were strongly positively correlated (r = .53, p <.001); as the level of anxiety increases, the level of IU also increases. Spirituality and IU were found to have a weak positive correlation, *(r* = .34, p <.001); As the spirituality increased, IU also increased. Anxiety and spirituality were found to be weakly positively correlated, *(r* = .30, p <.001), in which as the level of anxiety increased, spirituality also increased.

Additional Pearson *r* bivariate correlations were conducted to assess the relationship between IU, anxiety, and the subscales of the SWBS (EWBS and RWBS) (See Table 3). Anxiety and EWBS was found to have a weak positive relationship (r = .33, p < .001). IU and EWBS was found to have a moderate positive relationship *(r* = .45, p <.001). Anxiety and RWBS was found to have a weak positive relationship (r = .22, p =.007). IU and RWBS was found to have a weak positive relationship (r = .22, p =.009).

Table 3

Bivariate Correlation Results

Variable	*r*				
	1.	2.	3.	3a.	3b.
1. Anxiety	—	.53**	.30**	.33**	.22*
2. IU	.53**	—	.34**	.45**	.22*
3. Spirituality	.30**	.34**	—	.80**	.93**
a. EWBS	.33**	.45**	.80**	—	.53**
b. RWBS	.22*	.22*	.93**	.53**	—

*Note: *p< .01;** p <.001*

Research Question 2 (RQ2): Does spirituality moderate the relationship between anxiety and IU in undergraduate college students?

Multiple linear regression analyses were conducted to test whether spirituality moderates the relationship between IU and anxiety (Fairchild & MacKinnon, 2009) (Model 1; See Table 4). The independent variable was IU, the dependent variable was anxiety, and the moderator variable was spirituality. First, a regression analysis was conducted to assess the contribution of IU and spirituality on anxiety. The results indicated that only IU significantly predicted anxiety ($\beta = 0.489$, $b = 0.318$, $p > .001$). However, there was a trending effect of spirituality ($p = .09$). Overall, this model explained 30% variance in anxiety ($R^2 = .299$).

Next, a second regression analysis was conducted to assess the moderating effect of spirituality on the association between IU and anxiety (Model 2; See Table 4). There was no significant moderating effect of spirituality ($F(3,143) = 20.00$, $p = 0.63$, $R^2_{Change}=.001$). Again, IU remained as the sole significant predictor of anxiety ($\beta = 0.412$, $b = .268$, $p = .02$). The marginal effect of spirituality on anxiety became nonsignificant ($p = .98$). Overall, this model again explained 30% variance in anxiety ($R^2 = .30$). Additional analyses using the subscales of the SWBS were conducted to better understand the non-significant result of spirituality. These additional analyses also showed no significant moderating effect for either the EWBS ($p = 0.14$) and the RWBS ($p = 0.12$).

Table 4

Regression Coefficients

Predictor	Model 1			Model 2		
	β	b	p	β	b	p
IU	0.489	0.318	<.001	0.412	.268	.022
Spirituality	0.128	0.82	.090	0.008	.005	.976
INT IUxS				0.167	.001	.633

Note: Model 2 assesses the moderating effect of spirituality

Chapter 4

Discussion

The present study explored the relationship between intolerance of uncertainty (IU), anxiety, and spirituality within undergraduate college students, specifically assessing for a moderating effect of spirituality on IU and anxiety. Two research questions guided the current study: 1) What is the relationship between anxiety, IU, and spirituality in undergraduate college students? and 2) Does spirituality moderate the relationship between anxiety and IU in undergraduate college students? Undergraduate participants of the study completed the Intolerance of Uncertainty Scale (IUS; Freeston et al., 1994; Buhr & Dugas, 2002), the Beck Anxiety Inventory (BAI; Beck et al., 1988b), the Spiritual Wellbeing Scale (SWBS; Paloutzian & Ellison, 1982; Ellison, 1983) and a demographics questionnaire (See Appendices B-E). A bivariate correlation and linear multiple regression were conducted to examine the data collected and answer the guiding questions. This section discusses the implications of the results from these statistical analyses.

Discussion of Findings

Relationship between Anxiety, IU, and Spirituality

On average, participants demonstrated a moderate sense of spiritual wellbeing with both a moderate sense of religious wellbeing and life satisfaction and purpose, greater levels of IU, and severe levels of anxiety. These results are reflective of past research on the same variables within this population that show that college students may struggle with IU (Browning et al., 2021; Varghese & Delariate, 2021), are negatively impacted by anxiety (ACHA, 2023), and may have a sense of spiritual wellbeing (Betts et al., 2023). Additionally, most participants identified being a member of a religion, predominately that of a Christian denomination, which is reflective

55

of the religious make-up of the United States and the American South (Pew Research Center, 2014). Overall, these results show that most students within this study had expected struggles with anxiety and IU and have a relatively more positive sense of spiritual wellbeing.

Correlational analyses indicated weak to moderate significant (p <.001) relationships between IU and anxiety (*r* = .53), IU and spirituality, (*r* = .34), and anxiety and spirituality (*r* = .30). The significant positive relationship found in this study between IU and anxiety aligns with previous studies (Dugas, 1997; Qui et al., 2020; Rajkumar, 2020; Satici et al., 2020; Shihata et al., 2017), indicating that more anxiety is associated with greater IU. These results provide additional support to the research that has established a positive relationship between IU and anxiety, such as the connection between IU and internalizing disorders and symptoms, like anxiety (McEvoy & Mahoney, 2012; Shihata et al., 2017). However, unlike the present study, past research has found significant negative relationships between spirituality/religious coping and IU (Howell et al., 2019; Rosmarin et al., 2011), where higher levels of spirituality indicate less IU, and negative relationships between spirituality and anxiety, where spirituality and religious coping act as protective factors against anxiety (Achour et al., 2021; Kadiroğlu et al., 2021). Therefore, the positive relationships between IU and spirituality, and anxiety and spirituality do not align with the expected results established within the literature.

There are possible explanations for these findings. Spirituality was operationalized as spiritual wellbeing, which encompasses religious and existential wellbeing (Paloutzian & Ellison, 1982; Ellison, 1983). Religious wellbeing pertains to the degree of a relationship one has with God, and existential wellbeing concerns one's general sense of purpose and satisfaction with life. Spirituality was further identified as a value held within or outside of membership to a religious organization, as spirituality is often integrated into religion, but membership to such is

not required to uphold spiritual values (Schnell, 2012). These concepts were purposefully kept open-ended to allow for a more broad and inclusive understanding of such within undergraduate college students. This approach is particularly important when researching undergraduates who are navigating the developmental tasks of emerging adulthood, like identity exploration and formation (spiritual identity included) (Arnett, 2000; Arnett, 2015). Thus, the results of the study must be understood within the framework of an individual developing a new personal worldview, one that is continuously shifting and reconstructing with each exposure to new considerations. This process may result in the developmental realignment of values that could change the role and degree of importance each holds for an individual. Such a change may require a reevaluation of how each impact one's wellbeing and where adaptations are needed to better fit this stage of life. It is within this shift and other related factors of spirituality that the study's unexpected results may be better understood.

Spiritual matters, including purpose in life, the meaning of life, and overall destiny, can never be known with absolute certainty. Unexpected events may shift one's life at any moment, even while on the most established of courses. As such, one must be able to withstand this uncertainty and hold absolute trust that whomever or whatever they believe in is in control and won't lead them astray. However, though one may identify as upholding certain beliefs and practices of spirituality, anxiety and related uncertainty may remain. This may be connected to the type of attachment one has to a divine being, such as God, where a more secure attachment decreases mental health concerns, but a more anxious or avoidant attachment increases them (Bowlby, 1969; Fergus & Rowatt, 2014; Henderson & Kent, 2022; Raj & Sim, 2022; Upenieks et al., 2024). Consider the participants of the present study, most of whom identified with a religion and moderate religious and existential wellbeing, yet still reported greater degrees of IU

and anxiety. Spirituality, therefore, may be an identified source of strength, but the way one relates to such may not be in a manner that is beneficial (e.g. poor attachment style), nor may it be appropriately utilized and integrated into how one copes. Thus, one may have both a strong sense of spirituality but also struggle to combat negative emotions.

Where spirituality can be a positive coping strategy for college students (Ekwonye et al., 2020), these results demonstrate that this may not always be effective in combatting feelings of anxiety and uncertainty. It is possible that college students may not understand how to properly utilize and integrate spiritual coping skills into their newly reconfigured worldview, or their relation to such has changed (Arnett, 2015; Exline et al., 2022). For instance, a highly anxious college student may assess their own spiritual wellbeing as being satisfactory and may turn to matters of spirituality to cope with uncertainty and anxiety over the future, yet still struggle with these negative thoughts and emotions. Additionally, students may experience struggles with their identity and relationship with spirituality or religion that may contribute to a change in their spiritual identity, along with a difference in degree of engagement (Exline et al., 2022). Thus, their previous practices may no longer hold the same value or meaning as they once had before and may need to be adjusted to better suit their present phase of life.

Other matters of religiosity, such as views of the afterlife (e.g. Heaven vs. Hell), and one's status of salvation (e.g. placement into Heaven or Hell), may also contribute to these results. Where the study explored spirituality specifically, it is also important to conceptualize the results within the context of religious matters as most participants identified with a religion. Concerns over these factors of religion relate to the concept of scrupulosity, which is often understood as a subtype of OCD, in which one has obsessions and compulsions connected to religious/moral matters, like the commitment of sins (Abramowitz et al., 2002). For instance, one

may feel compelled to pray a specific number of times in a day to reduce the possibility of harm from sinning. This may promote feelings of anxiety and uncertainty, where the more theologically involved an individual may be, the more worry over their future and the outcome of their life as a believer they may experience (Abramowitz et al., 2002; Fergus & Rowatt, 2015). This can also be connected to a more insecure attachment style with their deity, in which a more anxious attachment increases scrupulosity (Fergus & Rowatt, 2014). Thus, students may continuously worry about their lifestyle and if such is in accordance with their religious teachings and negatively impacts their chances of a positive afterlife experience. In turn, the individual may actively try to adhere to the religious practices that decrease the possibility of negative outcomes in the afterlife, yet still experience anxiety and uncertainty over whether it is enough.

Moderation Impact on Anxiety of Spirituality

Linear regression analyses were conducted to assess the moderating effects of spirituality on anxiety. The results of such found IU to be the sole significant predictor on anxiety in both models, and spirituality was not found to have a moderating effect on anxiety and IU. These results align with past research on the general uncertainty that emerging adults experience, which may contribute to their anxiety over the unknowns of their future, and more generally highlights the importance of IU in implications of resulting anxiety (Dugas, 1997; Qui et al., 2020; Rajkumar, 2020; Satici et al., 2020; Shihata et al., 2017). However, the finding that spirituality does not moderate the relationship between anxiety and IU does not align with previous research (Achour et al., 2021; Howell et al., 2019; Kadiroğlu et al., 2021; Rosmarin et al., 2011). The explanation for such may be similar to that previously discussed in connection to the unexpected directionality of the significant correlations found between the variables. These include the

consideration for the impact of developmental needs in emerging adulthood, changes in spiritual identity and worldview, and the potential for matters connected to scrupulosity, such as sin. Thus, where spirituality can be a positive source of coping for college students (Ekwonye et al., 2020), it may also require unique considerations in the integration of such into one's identity and the ways it may fail to be as effective.

Summary

The results showed a significant relationship between anxiety, IU, and spirituality within undergraduate students in the US, including negative relationships between IU and spirituality, and anxiety and spirituality. Various reasons, including the development of spiritual or religious identity and the unique characteristics of emerging adulthood may explain these results. Regardless, these results contribute to the literature on the individual constructs of IU, anxiety, and spirituality, and further contribute to the literature on the relationships between these constructs. As the participants were undergraduate college students, the results also contribute to research on their unique experiences, as well as developmental literature on emerging adulthood. Additionally, as IU was found to be the sole predictor on anxiety, it further elevates the significance of IU broadly and its impact on the collegiate demographic. Lastly, the present study contributes to the paucity of research regarding the relationship between spirituality, IU, and anxiety generally, as well as within college students. These findings can be applied to the field of counseling with implications for both counseling clinicians and counselor educators.

Implications

The study found significant relationships between spirituality, IU, and anxiety within college undergraduate students with unexpected, but important results concerning the directionality of these relationships. As such, these correlations provide valuable insight into the

developmental needs of emerging adults, specifically undergraduate college students, regarding coping, spiritual identity, and its impact on anxiety and uncertainty. Additionally, the findings demonstrate the overall importance of IU on anxiety generally, which should continue to be a consideration for counselors. Thus, this study provides implications for counseling practitioners and educators.

Important Ethical Considerations

It must first be noted that the clinical incorporation of spirituality into a counseling session should be guided by the client and only brought into treatment with the client's consent. Counselors have an ethical obligation not to impose personal beliefs onto the client and to work within the client's worldview, including spiritual or religious beliefs (ACA, 2014). Further, clients might not adhere to any spiritual beliefs or identity (Pew Research Center, 2014). Thus, broaching and utilizing such in counseling sessions must be adjusted to the client's beliefs and only incorporated if the client wishes for such.

Counseling Practice

The study provides unique clinical implications when working with undergraduates. First, the findings demonstrate the importance of counselors having a general understanding of the developmental needs of their clients, and how it relates to their presenting concerns. For undergraduate college students, these considerations include that of identity exploration and formation, which are typical of emerging adulthood (Arnett, 2000; 2015; Exline et al., 2022). As emerging adults, undergraduates experience shifts within their personal worldviews that may include changes in spiritual or religious beliefs or practices (Arnett, 2015). These shifts may relate to spirituality being a less effective source of strength in combatting anxiety and uncertainty, as was found within the study. This may require further exploration of the different

components of spirituality that could increase these feelings (e.g. scrupulosity) (Abramowitz et al., 2002; Fergus & Rowatt, 2015). Additionally, the results showed that IU significantly predicted anxiety within undergraduates. This relates to other developmental concerns over the degree of uncertainty experienced by emerging adults over the unknown of their developing futures. These shifts in identity and increased uncertainty over the future are contingent with emerging adulthood and should, thus, be explored, processed, and normalized within the counseling session with special considerations for how it may be causing the client anxiety or uncertainty.

Counselors should also be aware of the potential variance in values that may result from the client's identity exploration and may be connected to a change in the effectiveness of previously utilized coping strategies (Arnett, 2015). Clients may need to reassess their personal values within the context of their present selves, understanding what their values now are and ranking the degree of importance each holds in their personal life. This may also include an assessment of disconnect from one's spiritual community or a search for a new one, which counselors can offer local resources on for increased involvement. These explorations could provide the client with valuable insight into both them and their personal sources of strength. These newly better understood values can demonstrate ways that can help the client better cope with anxiety and uncertainty. The therapist can, thus, teach and provide resources on different coping skills that better align with the client's values and might be more effective in reducing feelings of distress.

Counselor Education

The findings of the study also offer valuable insights for counselor educators. These include increasing student knowledge on IU and the developmental needs of emerging adults,

along with enhancing counseling competencies in spirituality. The results demonstrate the role of

IU within the context of anxiety and spirituality. Given these results and the general

transdiagnostic traits of IU (Shapiro et al., 2020; Shihata et al., 2017), it is critical that counselor

educators integrate lessons on IU into their curriculum for counselors-in-training. In doing so,

this knowledge offers counselors-in-training additional knowledge to apply to case

conceptualizations and treatment plans, especially with college undergraduate clients who face

several uncertainties (Reis et al., 2021). Additionally, the findings promote the importance of

knowing about the unique developmental needs of emerging adults, specifically college

undergraduates, in relation to IU, anxiety, and spirituality (Arnett 2000; 2015). It is important,

therefore, for counselors-in-training to know of emerging adulthood as a distinct stage of

development and the factors related to it.

Lastly, counselor educators are tasked with informing counseling students about religious

beliefs and spirituality (Council for Accreditation of Counseling and Related Educational

Programs [CACREP], 2015). Counselor educators should explore more with their students about

broaching spirituality within the counseling session. Per the results, these topics could be

relevant to a client's presenting concerns and to their coping strategies. Where it is not necessary

for therapists to become theological experts in all spiritual practices, they do have an ethical

responsibility to have a basic knowledge on such matters (ACA, 2014). The discussion of this

topic should include how to improve client's spiritual wellbeing, how this may apply to college

undergraduates, and how such can be fostered in therapy. In having these discussions, counselor

educators help to enhance their student's ethical counseling competencies (ACA, 2014), their

multicultural and social justice competencies (Ratts et al., 2016), and their spiritual and religious

competencies (ASERVIC, 2009; Robertson & Young, 2011).

Limitations

Where the findings of the study provide helpful insight into the relationship between IU, anxiety, and spirituality within college undergraduates, some limitations are present. First, due to the demographic structure of the participants (mostly White, female, Christian), the generalizability of the results is limited, and not representative of all identities within the population. Second, the study employed a non-experimental quantitative design that utilized self-report measures, rather than being assessed by a clinically trained professional. Participants may have a limited knowledge on these matters and give their answers in ways that would be different from a professional. Also, participants may be biased in their answers, which may have been given in a more socially desirable manner than was fully accurate. Lastly, the study conceptualized anxiety and spirituality in a specific way. The BAI (Beck et al., 1988b) conceptualizes anxiety as a more clinical, pathologized form of anxiety within the context of 21 common symptoms of anxiety. Yet, the participants were not selected from a clinical population, though it is possible some participants may have disordered anxiety. Thus, the BAI (Beck et al., 1988b) may not be reflective of their experiences with anxiety. The same applies to the measure selected for spirituality, the Spiritual Wellbeing Scale (SWBS, Ellison, 1983; Paloutzian & Ellison, 1982). Again, this is only one measurement of spirituality, and one that phrased the religious-based questions in accordance to consideration of 'God'. The scale's conceptualization of spirituality may not have aligned with the views of the participants and may have influenced the way they answered the measure. Regardless of these limitations, the findings of the study offer valuable insight for counselors and counselor educators regarding the presenting concerns of college undergraduates, anxiety, IU, and spirituality.

Recommendations for Future Research

Future research is still needed to further explore the relationship between IU, anxiety, and spirituality within college undergraduates. First, the study should be replicated to increase the validity of the results. Next, the present study demonstrates the unique developmental needs of undergraduates pertaining to anxiety, IU, and spirituality. Therefore, the findings should be explored within the groups not represented within the sample, such as other spiritual or religious groups, racial/ethnic identities, and other regions of the US, to increase the generalizability of the results. For instance, Ayten and Karagöz (2021) found significant connections between religiosity, forgiveness, religious coping, and generalized anxiety within Turkish Muslim college students. Additionally, future research should consider the implications that the time of the year in which the data is collected may have on the findings. For instance, anxiety and uncertainty may be increased during the week of final exams but may be decreased during times of semester breaks. Thus, the present study should be replicated within the context of a more diverse range of identities to broaden the applicability of the findings and to consider the unique needs of these groups, especially in comparison to others. This would be beneficial to counselors and counselor educators, providing an increased insight into the factor contributing to a client's presenting concerns, and address a flaw within research on wellness that often focuses predominately on Judeo-Christian belief systems (Ayten & Karagöz, 2021).

Additionally, future research should consider utilizing different research designs to address the same research questions, and to explore the unexpected findings within this study. Where the present study employed a non-experimental, quantitative design, a qualitative research design may offer a more in-depth exploration of these constructs. For instance, a qualitative design provides an opportunity for participants to provide a personal definition of spirituality,

65

describe the role it plays in their life, how this has changed during their collegiate careers, and the effectiveness of utilizing such to address anxiety and uncertainty. These may also be explored through quantitative designs; however, the use of pre-designed measures may limit the chance to understand a more personalized perspective from the participants on these matters. Additionally, as uncertainty was significantly found to be related to anxiety, future qualitative research could explore the specific sources of uncertainty experienced by undergraduates and how this may contribute to their anxiety and spirituality.

Further, per the unexpected directionality of the significant correlations between spirituality and IU and spirituality and anxiety, additional research is needed to better understand this outcome. Several possible explanations were explored within the discussion of the results. As such, these factors need to be explored in future research, either quantitatively or qualitatively. One possible explanation considered the development of spiritual identity within college undergraduates, which is consistent with the developmental concerns of emerging adults (Arnett 2000; 2015). A longitudinal study, for instance, may provide insight into how one's spiritual identity changes during their college career and how one utilizes such to cope with uncertainties and anxiety. Additionally, it is possible that specific elements of spirituality, such as attachment to the divine, may contribute to the effectiveness of spirituality in decreasing mental health concerns (Bowlby, 1969; Fergus & Rowatt, 2014; Henderson & Kent, 2022; Raj & Sim, 2022; Upenieks et al., 2024). This may also be connected to the developmental changes in spiritual identity that occur during this time, as how one is attached to the divine may contribute to their relationship to spirituality broadly. Future research could utilize measures such as the Attachment to God Scale (Rowatt & Kirkpatrick, 2002) to explore this specific element of spirituality and its role in mediating anxiety and IU. Therefore, future research is needed to

explore different characteristics of spirituality within the context of IU, anxiety, and college students to better understand this relationship and generate counseling interventions to help.

Lastly, anxiety and spirituality were conceptualized within the present study through specifically selected measures. These constructs, however, should be considered within the context of other operational measurements of anxiety, like state and trait anxiety (STAI; Spielberger et al., 1983), and spirituality, like the Spirituality Assessment Scale (SAS; Howden, 1992). Thus, future research should replicate the present study utilizing different measures of the same variables to offer validity to the results and more nuanced ways to understand the relationship between such. Additionally, the present study did not explore anxiety within a clinical population. It may be valuable to explore such within college undergraduates diagnosed with an anxiety disorder, and who receive treatment for such; these results could also be compared to those without diagnoses or who do not receive treatment for a deeper exploration.

Conclusion

The present study offers insight into anxiety, intolerance of uncertainty (IU), and spirituality among college undergraduates. The study did not find spirituality to moderate the relationship between IU and anxiety; IU, however, remained a significant predictor of anxiety in both linear regression models, demonstrating its significance within this population. Additionally, the study found significant relationships between anxiety and IU, anxiety and spirituality, and spirituality and IU. The relationship between anxiety and spirituality, and spirituality and IU was unexpected due to the negative directionality of the correlation. These unexpected results offer valuable insight into the developmental needs of college undergraduates as it relates to the development of their spiritual identity and personal values. Additionally, this exploration of identity and shift in values may contribute to the effectiveness of spirituality as a

source of coping against anxiety and uncertainty. As such, these findings are important for both counseling practitioners and counseling educators, as it offers nuanced implications for the presenting concerns of college undergraduates.

Chapter 5: Manuscript

An Examination of Intolerance of Uncertainty, Anxiety, and Spirituality in College Undergraduates

Introduction

Much of life is unknown and unpredictable (del Valle et al., 2022). The inability to fully predict the future may cause individuals distress (Carleton, 2016). Such distress over the ambiguity and unpredictability of the future refers to an intolerance of uncertainty (IU) (Bauer et al., 2019; Shapiro et al., 2020). One group with unique sources of distress and uncertainty are undergraduate college students (Reis et al., 2021). Most undergraduate college students are between the ages of 18-22 and within the stage of emerging adulthood, a stage marked by increased independence and identity exploration (Arnett, 2000; Dattilo et al., 2022). These new freedoms increase feelings of stress and uncertainty. Additionally, college is the first step towards the student's entire adult future. As such, they may experience uncertainty over the outcome of this future, especially within the context of their careers and relationships, which may also increase anxiety.

Anxiety, or concern over future threat, is one reaction individuals may have to IU (Majali, 2020; McEvoy & Mahoney, 2012). Some anxiety is considered protective, as it causes a person to be apprehensive of real, potential, sources of danger (Majali, 2020). However, anxiety may become a hinderance when the amount of anxiety is disproportionate to the possible threat posed by an event. Coping, or an individual's attempts to work within a system that has limited resources to meet one's needs, may be used to reduce feelings of anxiety (Guo & Shen, 2021). Having more adaptive coping abilities may moderate feelings of IU and anxiety (AlHardi, 2021).

Religious coping, for instance, is an example of adaptive coping used to reduce anxiety and IU (Howell et al., 2019; Achour et al., 2021). Within religion, one may identify matters related to spirituality, or one's individualized understanding of purpose and meaning in life (Burney et al., 2017; Hill & Pargament, 2008). However, such beliefs do not have to be connected to a religion. Further, spirituality is an adaptive coping mechanism used to decrease anxiety and IU (Rosmarin et al., 2011; Ramos et al., 2014). It is a protective factor during times of uncertainty as one aims to regain a sense of control by placing such within a higher being (Howell et al., 2019).

Where past research has explored the relationship between IU and spirituality, and IU and anxiety (Ramos et al., 2014; Howell et al., 2019), a paucity remains within the research concerning the relationship between all three factors, especially within college undergraduates and within the context of counseling. Therefore, it is the aim of this study to further explore the relationship between IU, spirituality, and anxiety within the undergraduate college student population. Specifically, the current study posits that spirituality will moderate the relationship between IU and anxiety, in which spirituality decreases IU and anxiety in those with greater levels of spirituality. Implications from the study of provided for counseling practices and counselor educators.

Literature Review

Emerging Adulthood

Emerging adulthood refers to the stage of development during the ages of 18 to 25 that is characterized by a continuation of the identity exploration that began in adolescence with an increased level of independence (Arnett, 2000). During this time, one sets the foundation of their adulthood. It is a period of personal growth and change where one begins to experience what it means to be an adult in society, but with guidance and protection from those with more

70

knowledge, wisdom, and experience (Arnett, 2000). College attendance may occur during this phase of development and offers a unique setting for identity development as one meets peers from more diverse backgrounds. Learning about others allows one to better explore and understand themselves within their own culture and their broader world community, which further aids in the formation of a personal worldview.

However, attending a university can be a change in one's life that may be met with uncertainty as one struggles to navigate the unpredictability of the outcomes of that change (Arbona et al., 2021). Change can come in many forms, ranging from personal changes to major political changes. Personal changes for college students may include a shift in residency, sense of belonging within a new space, and concerns over future financial prospects and changes in the economy (Arnett, 2000; Roberts & David, 2020; Spitzer et al., 2022; U.S. Bureau of Labor Statistics, 2024). Political changes can also impact feelings of uncertainty in college students, as politics take on new meaning due to their new role in society (Arnett, 2000). Examples of such may include war, like the Russo-Ukranian War (Brumfiel, 2022; Hisato et al., 2023; Kurapov et al., 2023; Polovko & Glotov, 2023; Sytnykova et al., 2023), and major legislative changes can impact college students like the decision of Supreme Court of the United States (SCOTUS) in Dobbs v. Jackson Women's Health Organization (2022) to overturn Roe V. Wade (1973) and Planned Parenthood v. Casey (1992) (Judge et al., 2017). These uncertainties may also be met with a degree of intolerance that could further cause distress.

Intolerance of Uncertainty

Uncertainty refers to "a subjective negative state characterized by the presence of negative emotions experienced in response to unpredictable conditions and the feeling that there is not enough information to cope with them" (del Valle et al., 2022, p. 2). Within uncertainty, is

71

a fear of the unknown (FOTU), which refers to "an individual's propensity to experience fear caused by the perceived absence of information on any level of consciousness or point of processing" (Carleton, 2016; p. 31). Additionally, that which is unknown pertains to the perception of an "absence of information" or, rather, not having all the details necessary to be certain about the future (Carleton, 2016; p. 31). Having some degree of uncertainty and fear over the unknown is expected, as nothing can be predicted with complete certainty, but it can also become intense and distressful (Carleton, 2016; Carleton, 2016a; del-Valle et al., 2022).

FOTU may be manifested through intolerance of uncertainty (IU), or the fear of the uncertainty and ambiguity of the future (Bauer et al., 2019; Shapiro et al., 2020). The mundane events of life encompass a degree of uncertainty and struggles with these uncertainties can lead to IU and distress (Shapiro et al., 2020). In non-clinical populations, IU may increase worry, frustration, anger, rage, helplessness, guilt, sadness, and grief (Freeston et al., 2020; Shapiro et al., 2020). Clinically, IU is considered a transdiagnostic maintaining trait associated with various internalizing disorders, including generalized anxiety, post-traumatic stress, obsessive-compulsive, panic and panic attacks, social anxiety, and depression (Shihata et al., 2017; Shapiro et al., 2020). Of the mental health disorders experienced by adults in the US, the highest prevalence rates are that of anxiety disorders at 19.1% (48 million people) (National Alliance on Mental Illness [NAMI], 2022). During the COVID-19 pandemic, IU was found to predict psychological distress in Indian college students, demonstrating its connection within this population (Varghese & Delariate, 2021). Therefore, due to the prevalence rates of anxiety disorders and its connection to IU, it is important to consider the implications of such on one's mental health, especially within college undergraduates.

Anxiety

Anxiety pertains to concerns over future threats of danger and can act as a protective factor against such (Majali, 2020). A small amount of anxiety can be healthy, protective, and motivating. Excessive anxiety, however, can cause increased distress and become more pathologized (American Psychiatric Association [APA], 2022). One group to experience unique sources of stress and anxiety are emerging adults (Reis et al., 2021). College students may be especially impacted due to the additional stress of navigating rigorous academic expectations of a higher education. The National College Health Assessment III (ACHA, 2023), which consisted of 78,000 college students (71.4% undergraduate students), found anxiety (34%) and stress (40.2%) to be amongst the top five concerns to have the greatest impact on academic performance. The report also assessed prevalence rates of diagnosed mental health conditions with most students reporting an anxiety disorder diagnosis (35.8%). Thus, the stress that students experience within college uniquely impacts mental health and may increase levels of clinical anxiety.

Anxiety is also significantly related to IU in that IU perpetuates and maintains symptoms of worry and anxiety, both clinically and non-clinically (Dugas et al., 1997; Qui et al., 2020; Rajkumar, 2020; Satici et al., 2020). IU has been found to be connected to anxiety within the context of difficulties making career-based decisions, which may be significant to college students considering their vocational futures (Arbona et al., 2021). Addressing aspects of IU in treatment have led to clinically significant decreases in GAD scores and worry, demonstrating the connection between these variables (Chigwedere & Moran, 2022). Further, one who struggles with anxiety, worry, and uncertainty must learn to adaptively cope with these feelings.

Having more adaptive coping abilities can moderate negative emotions like anxiety and IU (AlHadi, 2021). Based off of Lazarus and Folkman (1984), Guo and Shen (2021) define

coping as "the cognitive and behavioral efforts made by an individual to control the imbalance when external or internal demands exceed the resources available to the individual" (p.5). Coping strategies can be problem-focused, emotion-focused, or dysfunctional (Garcia et al., 2018). Examples of more adaptive forms of coping include using emotional support, humor, acceptance, positive reframing, and religion (Carver, 1997). Religious coping (e.g. prayer) has been found to be effective in reducing anxiety (Achour et al., 2021). It has also been found to significantly reduce anxiety related to IU (Howell et al., 2019). Spirituality is related to religious coping in that an individual may hold spiritual beliefs outside of or within the context of an organized religion (Burney et al., 2017; Hill & Pargament, 2008). It has also been found to decrease feelings of anxiety (Ano & Vasconcelles, 2005; Ramos et al., 2014). It can also be an adaptive form of coping with uncertainty, allowing one to regain a sense of control by placing the control within another (Howell et al., 2019). Thus, it may also mediate the relationship between anxiety and IU and be a possible source of coping for those struggling with such.

Spirituality

Religion can be considered a more formal, fixed, and institutionalized belief system, whereas spirituality pertains to a broader idea of beliefs that is more individual, experiential, less formal, and subjective (Williams-Smith & McMillian, 2022; Burney et al., 2017; Hill & Pargament, 2008). However, one can also be spiritual and religious, finding an aspect of spirituality within their religiosity (Schnell, 2012). Burney et al. (2017) define spirituality as, "the process of seeking personal authenticity, genuineness, wholeness as well as developing a greater connectedness to self and others through relationships and community; refers to deriving meaning, purpose, and direction in life" (p.1481). In the current study, spirituality refers to the personalized construct centered around the search for and understanding of one's purpose and

74

life's meaning in whatever way an individual defines that may or may not include religion or religious identity.

Spirituality has been found to have a significant and positive relationship with psychological wellbeing (Burney et al., 2017). Portnoff and colleagues (2017) found that spirituality significantly decreased depression and suicidal ideation, and that spirituality acted as a strong protective factor across various spiritual traditions. Incorporating spirituality into mental health treatment (i.e., Cognitive Behavioral Therapy; CBT) has significantly decreased GAD symptoms (Ramos et al., 2014). Spirituality may also be connected to IU, helping decrease feelings of distress by placing worries over the future within the control of another (Howell et al., 2019). Spirituality allows one to perceive unknown or uncertain future events as being within the control of the higher power or some other control factor specific to their belief system (Howell et al., 2019). In this sense, an individual is viewing the uncertainty and ambiguity of the future as truly out of their own control and being fully within that of another. Therefore, one can find strength from spirituality to help cope with IU.

In college students, spirituality was found to be a positive coping skill against the academic stressors associated with college (Ekwonye et al., 2020; Betts et al., 2023). For a new student entering the new environment of their college, their spiritual/religious identity can serve as a protective factor against the stressors of adjusting to college, such as belonging, by providing one access to a familiar community (Betts et al., 2023). Further, spirituality is an important aspect of the identity exploration found within emerging adulthood (Arnett, 2015; Ekwonye et al., 2020). For college students, spirituality can serve as a source of meaning, purpose, and strength in coping with struggles and stress (Ekwonye et al., 2020; Betts et al., 2023). Therefore, spirituality, held either within or outside of religion, may serve as a protective

factor against the anxiety and the uncertainties of the future. It is important for counselors and counselor educators to consider the implications that anxiety, IU, and spirituality may have in assisting college students in navigating the demands of college.

Summary: IU, Anxiety, Spirituality, and College Students

Research has shown connections between IU, religiosity, and internalizing symptomology in different populations but has not yet explored the relationship between IU, spirituality, and anxiety in college undergraduates, specifically with consideration for mental health professionals, such as counselors (Bardeen & Michel, 2017; Howell et al., 2019; Rosmarin et al., 2011). Counselors have an ethical obligation to be multiculturally competent and able to understand and incorporate the worldviews of their clients into therapy, including their spiritual beliefs (American Counseling Association [ACA], 2014; Association for Spiritual, Ethical, and Religious Values in Counseling [ASERVIC]; Ratts et al., 2016; Robertson & Young, 2011). Therefore, it is important to study how counselors can use their client's spirituality to combat IU, a critical transdiagnostic trait in developing and maintaining internalizing disorders. Further, despite research showing that college students need mental health services, many do not receive the treatment they deserve (Brown, 2020). Therefore, the current study aimed to explore the relationship between spirituality, anxiety, and IU within the undergraduate college population while considering the implications of the results within the context of the counseling profession.

Purpose

The purpose of the present study is to explore the relationship between intolerance of uncertainty (IU), anxiety, and spirituality within undergraduate college students, specifically

assessing for a moderating effect of spirituality on IU and anxiety. The research questions for the current study include:

1. What is the relationship between anxiety, IU, and spirituality in undergraduate college students?

2. Does spirituality moderate the relationship between anxiety and IU in undergraduate college students?

Method

After receiving Institutional Review (IRB) board approval, data was collected anonymously using convenience and snowball sampling through a Qualtrics survey that was distributed to instructors within the College of Education at the university who taught undergraduate courses. The Qualtrics survey was also uploaded onto SONA, a data collection software that allows undergraduate students to participate in research surveys for course credit, which was 0.5 credits for the present study. Data collected by participants through SONA were collected confidentially, as personal information of participation was recorded in order to grant credit. Only the primary researcher was able to access such information, however, information was still anonymously gathered through Qualtrics. After giving consent, participants completed three surveys, including one on IU (Intolerance of Uncertainty Scale; Buhr & Dugas, 2002; Freeston et al., 1994), anxiety (Beck Anxiety Inventory; Beck et al., 1988), and spirituality (Spiritual Wellbeing Scale; Ellison, 1983; Paloutzian & Ellison, 1982), as well as a demographic questionnaire. For participants who accessed the survey through SONA, the primary researcher granted them participation credit through the SONA platform upon notification of participation.

Participants

In total, 169 college undergraduate students participated in the study. Only participants who answered 80% of the questions were included; 25 participants were removed due to incompletion, resulting in a final total of 144 participants (see Table 1). Two participants did not disclose any information on the demographic questionnaire, and one participant did not report their year in school but answered the other questions. The age range of participants was 18-23 (M=19.73, SD = 1.35). Most participants identified as female (70.1%) with 27.8% identifying as Male, 0.7% identifying as Non-binary/third gender, 0% preferring not to say, and 0% identifying as Other. Concerning racial identity, 0% identified as American Indian/Indigenous Group/Alaska Native, 2.1% identified as Asian/Asian American/Pacific Islander, 6.3% identified as Black/African American, 0.7% identified as Hispanic/Latino/Latina, identified as Middle Eastern/Arab, 87.5% identified as White/Caucasian, 1.4% identified as Multiracial/Biracial, and 0.7% identified as Other. Regarding year in college, 31.9% of participants were 1st Year/Freshman, 23.6% of participants were 2nd Year/Sophomore, 18.1% of participants were 3rd Year/Junior, 21.5% of participants were 4th Year/Senior, and 2.8% of participants were Fifth year or above. In summary, participants were on average 19.73 years of age, and predominantly identified as female, White/Caucasian and being a 1st year/Freshman in college.

If participants identified with a religion, they were asked to answer through a write-in format. Out of 142 of the participants who completed the demographics questionnaire, 116 identified with a specific religion. Most participants who identified with a religion identified themselves as Christian (n=115); one participant identified as Hindu. Answers ranged from a specific denomination of Christianity to a more general 'Christian' or 'Christianity' response; thus, 89 participants answered either 'Christian' or 'Christianity' without including a specific denomination. Of the remaining 33 participants who identified with Christianity, the specific

Christian denominations reported included Catholicism/Catholic/Roman Catholic (n=12), Baptist (n=4), Nondenominational Christian (n=4), Methodist (n=3), and Episcopal (n=1); two participants reported being 'Protestant Christian'.

Instruments

Intolerance of Uncertainty was measured using the Intolerance of Uncertainty Scale (IUS; Buhr & Dugas, 2002; Freeston et al., 1994). The scale was originally created in French (Freeston et al., 1994) and later translated into English (Buhr & Dugas, 2002). The 27-item self-report measurement assesses feelings towards uncertainty, ambiguity, and the unknowns of the future. Examples of items include, "It's unfair not having any guarantees in life". Items are scored on a 5-point Likert scale ranging from 1 ("Not at all characteristic of me") to 5 ("Entirely characteristic of me") with scores ranging from 27 to 135; higher scores indicate higher levels of IU. The English-version of the IUS has been found to have strong psychometric validity and reliability, including strong internal consistency (α =.94), and good five-week test-retest reliability ($r = 0.74$) (Buhr & Dugas, 2002). The reliability findings of the present study were consistent with past research ($\alpha = 0.95$).

Anxiety was measured using the Beck Anxiety Inventory (BAI; Beck et al., 1988). The BAI is a 21-item self-report measure that assesses common symptoms of anxiety, like numbness. Items are scored on a 4-point Likert scale ranging from 0 ("Not at all") to 3 ("Severely – I could barely stand it"), with higher scores indicating greater severity of anxiety. Scores range from 0-63 and are interpreted according to four levels of anxiety: minimal anxiety (0-7), mild anxiety (8-15), moderate anxiety (16-25) and severe anxiety (26-63). The BAI has been found to have good internal consistency (α =.92) and one week test-retest reliability ($r = 0.75$) (Beck et al., 1988). Additionally, the BAI was found to have good psychometric properties within a non-clinical,

undergraduate population (Creamer et al., 1995). The BAI has also been found to have good convergent validity with other measures of anxiety, including the Hamilton Anxiety Rating Scale ($r = 0.51$), the State-Trait Anxiety Inventory ($r = 0.47\text{-}0.58$), the anxiety portion of the Symptom Checklist-90 ($r = 0.81$), and good divergent validity from measures of depression like the Hamilton Depression Inventory ($r = .25$) (Fydrich et al., 1992; Julian, 2011). The reliability findings of the present study were consistent with past research ($\alpha = 0.93$) (see Table 2).

Spirituality was measured using the Spiritual Wellbeing Scale (SWBS; Ellison, 1983; Paloutzian & Ellison, 1982). The SWBS is a 20-item self-report measure that assesses perceived spiritual wellbeing and consists of two subscales: Religious Wellbeing (RWBS; relationship to, satisfaction with, and connection to God) and Existential Wellbeing (EWBS; life satisfaction and purpose). The RWBS score is calculated using the odd numbered items with scores ranging from 10-60 on three levels: sense of unsatisfactory relationship with God (10-20), moderate sense of religious wellbeing (21-49), and positive view of one's relationship with God (50-60). Even numbered items are utilized to compute the EWBS score with scores ranging from 10-60 on three levels: low satisfaction with one's life and possible lack of clarity about one's purpose in life (10-20), moderate level of life satisfaction and purpose (21-49), and high level of life satisfaction with one's life and a clear sense of purpose (50-20). All items are utilized to compute the overall spiritual wellbeing score. Items are scored on a 6-point Likert scale with scores ranging from 1 (Strongly Agree) to 6 (Strongly Disagree). Scores range from 20-120 with higher scores indicating greater spiritual wellbeing and are interpreted according to 3 levels of perceived wellbeing: a sense of low (20-40), moderate (41- 99), and high (100-120) sense of spiritual wellbeing. The SWBS has been normed against undergraduate college students of varying spiritual identities with strong psychometric properties (Paloutzian & Ellison, 2021). The

test-retest reliability across four studies with 1-10 weeks between tests showed coefficients of .96, .99, .96, .88 (RWBS), .86, .98, .98, .73 (EWBS), and .93, .99, .99, .82 (SWBS). Additionally, high internal consistency was found across seven samples with coefficients ranging from .82-.94 (RWBS), .78-.86 (EWBS) and .89-.94 (SWBS) (Bufford et al., 1991; Paloutzian, 2021). Regarding validity, all three scales have been shown to positively correlate with positive self-concept, sense of purpose in life, physical health, and emotional adjustment, as well as negatively correlate with ill health, emotional maladjustment, and lack of purpose in life (Bufford et al., 1991; Paloutzian, 2021). The reliability findings of the present study were consistent with past research for the SWBS ($\alpha = 0.94$), and the RWBS ($\alpha = 0.97$) and EWBS ($\alpha = 0.88$) subscales.

Demographic Questionnaire

Participants also completed a researcher-created demographic questionnaire that collected information on age, race/ethnicity, gender, year in college, and religious identification.

Data Analyses

To test the research questions, a simple moderation analysis, which included Pearson's correlation and a linear regression, were conducted (Fairchild & MacKinnon, 2009). The independent variables included IU and spirituality, the moderator variable was spirituality, and the dependent variable was anxiety. Descriptive statistics were also conducted and reported.

Results

On average, participants demonstrated severe levels of anxiety (M = 39.69, SD = 12.47), a moderate sense of spiritual wellbeing (M = 48.63, SD = 19.55), and greater levels of IU (M = 72.45, SD = 19.20). Spiritual wellbeing also assessed for religious wellbeing (RWBS) and existential wellbeing (EWBS). On average, participants demonstrated a moderate sense of

religious wellbeing (M = 24.17, SD = 13.88) and moderate level of life satisfaction and purpose (M = 24.46, SD = 8.29).

A Pearson r bivariate correlation analysis was conducted to test the relationship between anxiety, IU, and spirituality in undergraduate college students (See Table 2). Anxiety and IU were strongly positively correlated (r = .53, p <.001); as the level of anxiety increases, the level of IU also increases. Spirituality and IU were found to have a weak positive correlation, (r = .34, p <.001); As the spirituality increased, IU also increased. Anxiety and spirituality were found to be weakly positively correlated, (r = .30, p <.001), in which as the level of anxiety increased, spirituality also increased. Additional Pearson r bivariate correlations were conducted to assess the relationship between IU, anxiety, and the subscales of the SWBS (EWBS and RWBS) (See Table 2). Anxiety and EWBS was found to have a weak positive relationship (r = .33, p < .001). IU and EWBS was found to have a moderate positive relationship (r = .45, p <.001). Anxiety and RWBS was found to have a weak positive relationship (r = .22, p =.007). IU and RWBS was found to have a weak positive relationship (r = .22, p =.009).

Multiple linear regression analyses were conducted to test whether spirituality moderates the relationship between IU and anxiety (Fairchild & MacKinnon, 2009) (Model 1; See Table 3). The independent variable was IU, the dependent variable was anxiety, and the moderator variable was spirituality. First, a regression analysis was conducted to assess the contribution of IU and spirituality on anxiety. The results indicated that only IU significantly predicted anxiety (β = 0.489, b = 0.318, p > .001). However, there was a trending effect of spirituality (p = .09). Overall, this model explained 30% variance in anxiety (R^2 = .299). Next, a second regression analysis was conducted to assess the moderating effect of spirituality on the association between IU and anxiety (Model 2; See Table 3). There was no significant moderating effect of spirituality

($F_{(3,143)} = 20.00$, $p = 0.63$, $R^2_{Change} = .001$). Again, IU remained as the sole significant predictor of anxiety ($\beta = 0.412$, $b = .268$, $p = .02$). The marginal effect of spirituality on anxiety became nonsignificant ($p = .98$). Overall, this model again explained 30% variance in anxiety ($R^2 = .30$). Additional analyses using the subscales of the SWBS were conducted to better understand the non-significant result of spirituality. These additional analyses also showed no significant moderating effect for either the EWBS ($p = 0.14$) or the RWBS ($p = 0.12$).

Discussion

On average, participants demonstrated a moderate sense of spiritual wellbeing with both a moderate sense of religious wellbeing and life satisfaction and purpose, greater levels of IU, and severe levels of anxiety. Correlational analyses indicated weak to strong significant ($p < .001$) relationships between IU and anxiety ($r = .53$), IU and spirituality, ($r = .34$), and anxiety and spirituality ($r = .30$). The significant positive relationship found in this study between IU and anxiety aligns with previous studies (Dugas, 1997; Qui et al., 2020; Rajkumar, 2020; Satici et al., 2020; Shihata et al., 2017), indicating that more anxiety is associated with greater IU. These results provide additional support to the research that has established a positive relationship between IU and anxiety, such as the connection between IU and internalizing disorders and symptoms, like anxiety (McEvoy & Mahoney, 2012; Shihata et al., 2017). However, unlike the present study, past research has found significant negative relationships between spirituality/religious coping and IU (Howell et al., 2019; Rosmarin et al., 2011), and negative relationships between spirituality and anxiety (Achour et al., 2021; Kadiroğlu et al., 2021). Additionally, the results of the linear regression analyses found IU to be the sole significant predictor on anxiety in both models; spirituality was not found to have a moderating effect on anxiety and IU. These results align with past research on the general uncertainty that emerging

adults experience, which may contribute to their anxiety over the unknowns of their future, and more generally highlights the importance of IU in implications of resulting anxiety (Dugas, 1997; Qui et al., 2020; Rajkumar, 2020; Satici et al., 2020; Shihata et al., 2017). However, the finding that spirituality does not moderate the relationship between anxiety and IU does not align with previous research (Achour et al., 2021; Howell et al., 2019; Kadiroğlu et al., 2021; Rosmarin et al., 2011).

To better understand these results, it is important to frame such within the context of the developmental tasks of emerging adulthood, like identity exploration and formation (spiritual identity included) (Arnett, 2000; 2015). This framework includes that of an individual developing a new personal worldview, one that is continuously shifting and reconstructing with each exposure to new considerations. Students may, thus, experience struggles with their identity and relationship with spirituality or religion that may contribute to a change in their spiritual identity, along with a difference in degree of engagement (Exline et al., 2022). Their previous practices may no longer hold the same value or meaning as they once had before and may need to be adjusted to better suit their present phase of life. College students may not understand how to properly utilize and integrate spiritual coping skills into their newly reconfigured worldview, or their relation to such has changed (Arnett, 2015; Exline et al., 2022). Consider the participants of the present study, most of whom identified with a religion and moderate religious and existential wellbeing, yet still reported greater degrees of IU and anxiety. This may be connected to the type of attachment one has to a divine being, such as God, where a more secure attachment decreases mental health concerns, but a more anxious or avoidant attachment increases them (Bowlby, 1969; Fergus & Rowatt, 2014; Henderson & Kent, 2022; Raj & Sim, 2022; Upenieks et al., 2024). Spirituality, therefore, may be an identified source of strength, but the way one

relates to such may not be in a manner that is beneficial (e.g. poor attachment style), nor may it be appropriately utilized and integrated into how one copes.

Other matters of religiosity, such as views of the afterlife (e.g. Heaven vs. Hell), and one's status of salvation (e.g. placement into Heaven or Hell), may also contribute to these results. Where the study explored spirituality specifically, it is also important to conceptualize the results within the context of religious matters as most participants identified with a religion. Concerns over these factors of religion relate to the concept of scrupulosity, which is often understood as a subtype of OCD, in which one has obsessions and compulsions connected to religious/moral matters, like the commitment of sins (Abramowitz et al., 2002). For instance, one may feel compelled to pray a specific number of times in a day in order to reduce the possibility of harm from sinning. This may promote feelings of anxiety and uncertainty, where the more theologically involved an individual may be, the more worry over their future and the outcome of their life as a believer they may experience (Abramowitz et al., 2002; Fergus & Rowatt, 2015). Thus, students may continuously worry about their lifestyle and if such is in accordance with their religious teachings and negatively impacts their chances of a positive afterlife experience. In turn, the individual may actively try to adhere to the religious practices that decrease the possibility of negative outcomes in the afterlife, yet still experience anxiety and uncertainty over whether it is enough.

Implications for Counseling Practitioners

The study found significant relationships between spirituality, IU, and anxiety within college undergraduate students with unexpected, but important, results concerning the directionality of these relationships. As such, these correlations provide valuable insight into the developmental needs of emerging adults, specifically undergraduate college students, regarding

coping, spiritual identity, and its impact on anxiety and uncertainty. Additionally, the findings demonstrate the overall importance of IU on anxiety generally, which should continue to be a consideration for counselors. This study provides implications for counseling practitioners and educators.

Important Ethical Considerations

It must first be noted that the clinical incorporation of spirituality into a counseling session should be guided by the client and only brought into treatment with the client's consent. Counselors have an ethical obligation not to impose personal beliefs onto the client and to work within the client's worldview, including spiritual or religious beliefs (ACA, 2014). Further, clients might not adhere to any spiritual beliefs or identity (Pew Research Center, 2014). Thus, broaching and utilizing such in counseling sessions must be adjusted to the client's beliefs and only incorporated if the client wishes for such.

Counseling Practice

The study provides unique clinical implications when working with undergraduates. First, the findings demonstrate the importance of counselors having a general understanding of the developmental needs of their clients, and how it relates to their presenting concerns. As emerging adults, undergraduates experience shifts within their personal worldviews that may include changes in spiritual or religious beliefs or practices (Arnett, 2015). These shifts may relate to spirituality being a less effective source of strength in combatting anxiety and uncertainty, as was found within the study. Additionally, the results showed that IU significantly predicted anxiety within undergraduates. This relates to other developmental concerns over the degree of uncertainty experienced by emerging adults over the unknown of their developing futures. These shifts in identity and increased uncertainty over the future are contingent with emerging

adulthood and should, thus, be explored, processed, and normalized within the counseling session with special considerations for how it may be causing the client anxiety or uncertainty.

Counselors should also be aware of the potential variance in values that may result from the client's identity exploration and may be connected to a change in the effectiveness of previously utilized coping strategies (Arnett, 2015). Clients may need to reassess their personal values within the context of their present selves, understanding what their values now are and ranking the degree of importance each holds in their personal life. This may also include an assessment of disconnect from one's spiritual community or a search for a new one, which counselors can offer local resources on for increased involvement. These explorations could provide the client with valuable insight into both themselves and their personal sources of strength. These newly better understood values can demonstrate ways that can help the client better cope with anxiety and uncertainty. The therapist can, thus, teach and provide resources on different coping skills that better align with the client's values and might be more effective in reducing feelings of distress.

Implications for Counselor Educators

The findings of the study also offer valuable insights for counselor educators. These include increasing student knowledge on IU and the developmental needs of emerging adults, along with enhancing counseling competencies in spirituality. The results demonstrate the role of IU within the context of anxiety and spirituality. Given these results and the general transdiagnostic traits of IU (Shapiro et al., 2020; Shihata et al., 2017), it is critical that counselor educators integrate lessons on IU into their curriculum for counselors-in-training. In doing so, this knowledge offers counselors-in-training additional knowledge to apply to case conceptualizations and treatment plans, especially with college undergraduate clients who face

several uncertainties (Reis et al., 2021). Additionally, the findings promote the importance of knowing about the unique developmental needs of emerging adults, specifically college undergraduates, in relation to IU, anxiety, and spirituality (Arnett 2000; 2015). It is important, therefore, for counselors-in-training to know of emerging adulthood as a distinct stage of development and the factors related to it.

Lastly, counselor educators are tasked with informing counseling students about religious beliefs and spirituality (Council for Accreditation of Counseling and Related Educational Programs [CACREP], 2015). Counselor educators should explore more with their students about broaching spirituality within the counseling session. Per the results, these topics could be relevant to a client's presenting concerns and to their coping strategies. Where it is not necessary for therapists to become theological experts in all spiritual practices, they do have an ethical responsibility to have a basic knowledge on such matters (ACA, 2014). The discussion of this topic should include how to improve client's spiritual wellbeing, how this may apply to college undergraduates, and how such can be fostered in therapy. In having these discussions, counselor educators help to enhance their student's ethical counseling competencies (ACA, 2014), their multicultural and social justice competencies (Ratts et al., 2016), and their spiritual and religious competencies (ASERVIC, 2009; Robertson & Young, 2011).

Limitations and Recommendations for Future Research

Where the findings of the study provide helpful insight into the relationship between IU, anxiety, and spirituality within college undergraduates, some limitations are present. First, due to the demographic structure of the participants (mostly White, female, Christian), the generalizability of the results is limited, and not representative of all identities within the population. Future research should explore the study within the groups not represented within the

sample to increase the generalizability of the results. Additionally, future research should consider the implications that the time of the year in which the data is collected may have on the findings. For instance, anxiety and uncertainty may be increased during the week of final exams, but may be decreased during times of semester breaks. Secondly, the study employed a non-experimental quantitative design that utilized self-report measures, rather than being assessed by a clinically trained professional. Thus, future research should consider utilizing different research designs to address the same research questions, and to explore the unexpected findings within this study. For instance, a qualitative design provides an opportunity for participants to provide a personal definition of spirituality, describe the role it plays in their life, how this has changed during their collegiate careers, and the effectiveness of utilizing such to address anxiety and uncertainty.

Lastly, the study conceptualized anxiety and spirituality in a specific way. The BAI (Beck et al., 1988b) conceptualizes anxiety as a more clinical, pathologized form of anxiety within the context of 21 common symptoms of anxiety. Yet, the participants were not selected from a clinical population, though it is possible some participants may have disordered anxiety. Thus, the BAI (Beck et al., 1988b) may not be reflective of their experiences with anxiety. The same applies to the measure selected for spirituality, the Spiritual Wellbeing Scale (SWBS, Ellison, 1983; Paloutzian & Ellison, 1982). Again, this is only one measurement of spirituality, and one that phrased the religious-based questions in accordance to consideration of 'God'. Other measures of anxiety, like state and trait anxiety (STAI; Spielberger et al., 1983), and spirituality, like the Spirituality Assessment Scale (SAS; Howden, 1992), should be considered for future research.

Future research should also replicate the present study to further validate the results and offer more nuanced ways to understand the relationship between such. Future research could also explore anxiety within a clinical population. Further, per the unexpected directionality of the significant correlations between spirituality and IU and spirituality and anxiety, additional research is needed to better understand this outcome. Several possible explanations were explored within the discussion of the results. As such, these factors need to be explored in future research, either quantitatively or qualitatively.

Conclusion

The present study offers insight into anxiety, intolerance of uncertainty (IU), and spirituality among college undergraduates. The study did not find spirituality to moderate the relationship between IU and anxiety; IU, however, remained a significant predictor of anxiety in both linear regression models, demonstrating its significance within this population. Additionally, the study found significant relationships between anxiety and IU, anxiety and spirituality, and spirituality and IU. The relationship between anxiety and spirituality, and spirituality and IU was unexpected due to the negative directionality of the correlation. These unexpected results offer valuable insight into the developmental needs of college undergraduates as it relates to the development of their spiritual identity and personal values. Additionally, this exploration of identity and shift in values may contribute to the effectiveness of spirituality as a source of coping against anxiety and uncertainty. As such, these findings are important for both counseling practitioners and counseling educators, as it offers nuanced implications for the presenting concerns of college undergraduates.

Manuscript References

Abramowitz, J. S., Huppert, J. D., Cohen, A. B., Tolin, D. F., & Cahill, S. P. (2002). Religious obsessions and compulsions in a non-clinical sample: The Penn Inventory of Scrupulosity (PIOS). *Behaviour Research and Therapy, 40*, 825-838.

Achour, M., Souici, D., Bensaid, B., Zaki, M. B. A., Ahmed, A., & Alnahari, A. (2021). Coping with anxiety during the COVID-19 pandemic: A case study of academics in the Muslim world. *Journal of Religion and Health, 60*, 4579-4599.

AlHadi, A. N., Alarabi, M. A. & Khulood, M. A. (2021). Mental health and its association with coping strategies and intolerance of uncertainty during the COVID-19 pandemic among the general population in Saudi Arabia: Cross-sectional study. *BMC Psychiatry, 21*(382), 1-13. https://doi.org/10.1186/s12888-021-03370-4

American College Health Association (2023). A*merican College Health Association-National College Health Assessment III: Reference Group Executive Summary Spring 2023*. Silver Spring, MD: American College Health Association.

American Counseling Association. (2014). *2014 ACA code of ethics*. https://www.counseling.org/docs/default-source/default-document-library/2014-code-of-ethics-finaladdress.pdf

https://doi.org/10.1176/appi.books.9780890425596 American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders.* (5th ed., text rev.) https://doi.org/10.1176/appi.books/9780890425787.

https://www.apa.org/news/press/releases/stress/2020/sia-mental-health-crisis.pdfAssociation for Spiritual, Ethical and Religious Values in Counseling [ASERVIC](2009).

Spiritual Competencies: Competencies for addressing spiritual and religious issues in

counseling. Retrieved from http://www.aservic.org/

Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to

stress: A meta-analysis. *Journal of Clinical Psychology, 61*(4),461-480.

Arbona, C., Fan, W., Phang, A., Olvera, N., & Dios, M. (2021). Intolerance of uncertainty,

anxiety, and career indecision: A mediation model. *Journal of Career Assessment, 29*(4),

699-716. DOI: 10.1177/10690727211002564

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens

through the twenties. *American Psychologist, 55*(5), 469-480.

Arnett, J. J. (2015). *Emerging adulthood: The winding road from the late teens through the*

twenties (2nd ed). Oxford University Press.

https://doi.org/10.1093/oxfordhb/9780100705574.013.9

Bardeen, J.R., & Michel, J.S. (2017). The buffering effect of religiosity on the relationship

between intolerance of uncertainty and depressive symptoms. *Psychology of Religion and*

Spirituality, 9(Supplement1), S90-S95.

Bauer, E. A., MacNamara, A., Sandre, A., Lonsdorf, T.B., Weinberg, A., Morriss, J., & van

Reekum, C. M. (2019). Intolerance of uncertainty and threat generalization: A replication

and extension. *Society for Psychophysiological Research,* 1-18.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical

anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*,

893-897.

Betts, M., Grabsch, D. K., Davis, V. D., Bell, L. M., & Sheedy, F. A. (2023). Exploring the

motivations of students to engage in their spiritual, religious, or faith lives in college. *Journal of Beliefs and Values, 44*(3), 441-454. https://doi.org/10.1080/13617672.2022.2147684

Bowlby, J.(1969). *Attachment and loss: Attachment (Vol.1).* NewYork, NY: BasicBooks.

Brown, S. (2020). Overwhelmed: The real campus mental-health crisis and new models for well-   being. *The Chronicle of Higher Education*. Retrieved on April 24, 2022 from https://store.chronicle.com/products/overwhelmed

Brumfiel, G. (2022). *Russia's nuclear arsenal is huge, but will Putin use it?* National Public Radio. Retrieved from https://www.npr.org/2022/10/17/1129443703/russias-nuclear-arsenal-is-huge-but-will-putin-use-it

Bufford, R. K., Paloutzian, R. F., & Ellison, C. W. (1991). Norms for the spiritual wellbeing scale. *Journal of Psychology and Theology, 19*(1), 56-70.

Burney, N., Osmany, M., & Khan, W. (2017). Spirituality and psychological wellbeing of young adults. *Indian Journal of Health and Well-being, 8*(1), 1481-1484.

Carleton, R.N. (2016). Into the unknown: A review and synthesis of contemporary models involving uncertainty. *Journal of Anxiety Disorders, 39*, 30-43.

Carleton, R.N. (2016a). Fear of the unknown: One fear to rule them all? *Journal of Anxiety Disorder, 41*, 5-21.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief   COPE. *International Journal of Behavioral Medicine*, 4, 92-100.

Chigwedere, C., & Moran, J. (2022). Further development of the intolerance of uncertainty model of GAD: a case series. *The Cognitive Behaviour Therapist, 15*, 1-16.

Council of the Accreditation of Counseling and Related Educational Programs [CACREP]

(2015). *2016 CACREP Standards*. Retrieved from https://www.cacrep.org/for-

    programs/2016-cacrep-standards/

Dattilo, T.M., Fisher, R. S., Traino, K. A., Roberts, C. M., Lehmann, V., Chaney, J. M., &

    Mullins, L. L. (2022). Dating anxiety during the global COVID-19 pandemic:

    Implications for college students. *Translational Issues in Psychological Science*.

    Advance online publication. http://dx.doi.org/10.1037/tps0000307

del-Valle, M.V., López-Morales, Andrés, M., Yerro-Avincetto, M., Trudo, R. G., Urquijo, S., &

    Canet-Juric, L. (2022). Intolerance of COVID-19 related uncertainty and depressive and

    anxiety symptoms during the pandemic: A longitudinal study in Argentina. *Journal of

    Anxiety Disorders, 86*. https://doi.org/10.1016/j.janxdis.2022.102531

Dobbs. V. Jackson Women's Health Organization No. 19-1392, 597 U.S. 215 (2022)

Dugas, M.J., Freeston, M.H., & Ladouceur, R. (1997) Cognitive Therapy and Research, 21(6),

    593-606.

Ekwonye, A.U., Sheikhomar, N., & Phung, V. (2020). Spirituality: A psychological resource for

    managing academic related stressors. *Mental Health, Religion, & Culture, 23*(9), 826-

    839. https://doi.org/10.1080/13674676.2020.1823951

Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of

    Psychology and Theology, 11*(4), 330-340.

Exline, J. J., Van Tongeren, D. R., Bradley, D. F., Wilt, J. A., Stauner, N., Pargament, K. I., &

    DeWall, C. N. (2022). Pulling away from religion: Religious/spiritual struggles and

    religious disengagement among college students. *Psychology of Religion and Spirituality,

    14*(3), 300-311. http://dx.doi.org/10.1037/rel0000375

Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and

moderation effects. *Prev Sci, 10*, 87-99. https://doi.org/10.1007/s11121-008-0109-6

Fergus, T. A., & Rowatt, W. C. (2014). Examining a purported association between attachment

to God and scrupulosity. *Psychology of Religion and Spirituality, 6*(3), 230-236.

https://doi.org/10.1037/a0036345

Freeston, M. Tiplady, A.,Mawn, L., Bottesi, G. & Thwaites, S. (2020). Towards a model of

uncertainty distress in the context of Coronavirus (COVID-19). *The Cognitive Behaviour*

Therapy, 13, 1-15.

Fydrich, T., Dowdall, D., & Chambless, D. L. (1992). Reliability and validity of the Beck

Anxiety Inventory. *Journal of Anxiety Disorders, 6*, 55-61.

Garcia, F. E., Barraza-Peña C. G., Wlodarczyk, A., Alvear-Carrasco, M., Reyes-Reyes, A.

(2018). Psychometric properties of the Brief-COPE for the evaluation of coping strategies

in the Chilean population. *Psicologia: Reflexão e Critica, 31*(22).

https://doi.org/10.1186/s41155-018-0102-3

Guo, H., & Shen, H. (2021). Media exposure to COVID-19 epidemic and threatening dream

frequency: A moderated mediation model of anxiety and coping efficacy. *Dreaming,*

31(1), 1-19. https://doi.org/10.1037/drm0000159

Henderson, W. M., & Kent, B. V. (2022). Attachment to God and psychological distress:

evidence of a curvilinear relationship. *Journal for the Scientific Study of Religion, 61*(1).

161-177.

Hill, P.C. & Pargament, K. I. (2008). Advances in the conceptualization and measurement of

religion and spirituality: Implications for physical and mental health research. *Journal of*

Psychology of Religion and Spirituality, S(1), 3-17.

Howden, J.W. (1992). *Development and psychometric characteristics of the spirituality*

assessment scale (Doctoral Dissertation). Retrieved from ProQuest Dissertations &Theses Global. (9312917)

Howell, A. N., Carelton, R., N., Horswill, S. C., Parkerson, H. A., Weeks, J. W., & Asmundson, G.J.G. (2019). Intolerance of uncertainty moderates the relations among religiosity and motives for religion, depression, and social evaluation fears. *Journal of clinical Psychology, 75*, 95-115.

Judge, C. P., Wolgemuth, T. E., Hamm, M. E., & Borrero, S. (2017). "Without bodily autonomy we are not free": Exploring women's concerns about future access to contraception following the 2016 US presidential election. *Contraception, 96*, 370-377. http://dx.doi.org/10.1016/j.contraception.2017.07.169

Kadiroğlu, T., Tüfekci, F. G., & Kara, A. (2021). Determining the religious coping styles of adolescents in Turkey during COVID-19. *Journal of Religion and Health, 60*, 3406-3417.

Khawaja, N. G., & Yu, L., N. H. (2010). A comparison of the 27-item and 12-item intolerance of uncertainty scales. *Clinical Psychologist, 14*, 97-106. Doi: 10.1080/13284207.2010.502542.

Kurapov, A., Pavlenko, V., Drozdov, A., Bezliudna, V., Reznik, A., & Isralowitz, R. Toward an understanding of the Russian-Ukrainian War impact on university students and personnel. *Journal of Loss and Trauma, 28*(2), 167-174. https://doi.org/10.1080/15325024.2022.2084838

Lazarus, R.S., & Folkman, S.(1984). *Stress, appraisal and coping.* Springer.

Majali, S. A. (2020). Positive Anxiety and its Role in Motivation and Achievements among

University Students. International Journal of Instruction, 13(4), 975-986.

https://doi.org/10.29333/iji.2020.13459a

McEvoy, P. M., & Mahoney, A.E.J. (2012). To be sure, to be sure: Intolerance of uncertainty mediates symptoms of various anxiety disorders and depression. *Behavior Therapy, 43*, 533-545.

National Alliance on Mental Illness [NAMI] (2022). Mental health by the numbers. Retrieved from https://www.nami.org/mhstats.

Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and the quality of life. In L.A. Peplau and D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy*. NY: Wiley, 224-237.

Paloutzian, R. F. & Ellison, C. W. (2021). *Manual for the Spiritual Well-Being Scale*. Retrieved from https://www.westmont.edu/psychology/raymond-paloutzian-spiritual-wellbeing-scale

Pew Research Center (2014). *Religious Landscape Survey*. Retrieved from https://www.pewresearch.org/religion/religious-landscape-study/

Planned Parenthood v. Casey, 505 U.S. 833 (1992)

Polovko, O. & Glotov, S. (2023). The educational process of Ukrainian university students following the full-scale Russian invasion. *London Review of Education, 21*(1), 1-12. https://doi.org/10.14324/LRE.21.1.31.

Portnoff, L., McClintock, C., Lau, E., Choi, S., & Miller, L. (2017). Spirituality cuts in half the relative risk for depression: Findings from the United States, China, and India. *Spirituality in Clinical Practice, 4*(1), 22-31.

Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Yifeng, X. (2020). A nationwide survey of

psychological distress among Chinese people in the COIVD-19 epidemic: implications

and policy recommendations. *General Psychiatry, 33*(1-3).

Raj, N.S.X.E., & Sim, T. N. (2022). Stressful events, stress level, and psychological distress: A

moderated mediation model with secure attachment to God as moderator. *Psychology of

Religion and Spirituality, 14*(4), 473-479. http://dx.doi.org/10.1037/rel0000388

Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. Asian

Journal of Psychiatry, 52, 1-5. https://doi.org/10.1016/j.ajp.2020.102066

Ramos, K., Barrera, T. L., & Stanley, M. A. (2014). Incorporating nonmainstream spirituality

into CBT for anxiety: A case study. *Spirituality in Clinical Practice, 1*(4), 269-277.

Ratts, M. J., Singh, A. A., Nassar-McMillan, S., Butler, S. K., & McCullough, J. R. (2016).

Multicultural and Social Justice Counseling Competencies: Guidelines for the Counseling

Profession. Journal of Multicultural Counseling and Development, 44(1), 28–48. Portico.

https://doi.org/10.1002/jmcd.12035

Reis, A., Saheb, R., Parish, P., Earl, A., Klupp, N., & Sperandei, S. (2021). How I cope at

university: Self-directed stress management strategies of Australian students. *Stress and

Health, 37*, 1010-1025. https://doi.org/10.1002/smi.3508

Roberts, J. A., & David, M.E. (2020). The social media party: Fear of missing out (FoMO),

social media intensity, connection, and wellbeing. *International Journal of Human-

Computer Interaction, 36*(4), 386-392. doi.org/10.1080/10447318.2019.1646517

Robertson, L. A., & Young, M. E. (2011). The revised ASERVIC spiritual competencies. In C.

S. Cashwell & J. S. Young (Eds.), *Integrating spirituality and religion into counseling: A

guide to competent practice* (pp. 25–42). American Counseling Association.

Robichard, M. (2013). Cognitive behavior therapy targeting intolerance of uncertainty:

    Application to a clinical case of generalized anxiety disorder. *Cognitive and Behavioral*

    Practice, 20(3), 251-263. https://doi.org/10/1016/j.brat.2004.02.007.

Roe v. Wade, 410 U.S. 113 (1973).

Rosmarin, D.H., Pirutinsky, S., Auerbach, R. P., Bjögvinsson, T., Bigda-Peyton, J., Andersson,

    G., Pargament, K. I., & Krumrei, E. J. (2011). Incorporating spiritual beliefs into a

    cognitive model of worry. *Journal of Clinical Psychology, 67*(7), 691-700. DOI:

    10.1002/jclp.20798

Satici, B., Saricali, M. S., Satici, S. A. & Griffiths, M.D. (2020). Intolerance of uncertainty and

    mental wellbeing: Serial medication by rumination and fear of COVID-

    19. *International Journal of Mental Health and Addiction*.

Schnell, T. (2012). Spirituality with and without religion - Differential relationships with

    personality. *Archive for the Psychology of Religion, 34*(2012), 33-61.

    https://doi.org/10.1163/157361212X644495

Shapiro, M. O., Short, N. A., Morabito, D., & Schmidt, N. B. (2020). Prospective associations

    between intolerance of uncertainty and psychopathology. *Journal of Personality and*

    Individual Differences, 166, 1-7.

Shihata, S., McEvoy, P. M., & Mullan, B.A. (2016). Pathways from uncertainty to anxiety: An

    evaluation of a hierarchical model of trait and disorder-specific intolerance of uncertainty

    on anxiety disorder symptoms. Journal of Anxiety Disorders, *45*, 72-79.

Spielberger C.D., Gorsuch, R.L., Lushene, P.R., Vagg, P.R., Jacobs, A.G. (1983). *Manual for the*

    State-Trait Anxiety Inventory (Form Y). Consulting Psychologists Press, Inc.: Palo Alto

Spitzer, E. G., Crosby, E. S., & Witte, T. K. (2022). Looking through a filtered lens: Negative

social comparison on social media and suicidal ideation among young adults. *Psychology of Popular Media*. Advance online publication. http://dx.doi.org/10.1037/ppm0000380

Sytnykova, Y., Shlenova, M., Kyrpenko, Y., Kyrpenko, V., Konoplenko, N, & Hrynchenko, I. (2023). Teaching technologies online: Changes of experiences in wartime in Ukraine. *International Journal of Emerging Technologies in Learning, 18*(18), 165-176. https://doi.org/10.3991/ijet.v18i18.40491

Upenieks, L., Bounds, E. M., Melton, K. K., Glanzer, P., & Schnitker, S. A. (2024). Attachment to God, contingent self-worth, and mental health outcomes in U.S. collegiate athletes. J*ournal of Religion and Health, 63,* 445-465. https://doi.org/10.1007/s10943-023-01907-3

Varghese, M. K. & Delariate, C. F. (2021). Intolerance of uncertainty as a predictor of psychological distress among college students during the pandemic. *Indian Journal of Health and Well-being, 12*(4), 517-521.

Williams-Smith, R. & McMillan, S. J. (2022). A systems-theory analysis of the relationship between communication, beliefs/practices, religiosity, spirituality, and expected future religious practice of college students. *Journal of Research on Christian Education, 31*(1), 88-112. https://doi.org/10.1080/10656219.2022.2035866

U.S. Bureau of Labor Statistics (2024). Consumer Price Index. Retrieved from https://www.bls.gov/cpi/

Tables

Table 1

Demographic Information

Demographic	Identity	N	Percentage
Gender	Male	40	27.8%
(n = 142)	Female	101	70.1%
	Non-binary/Third	1	0.7%
	Prefer Not to Say	0	0%
	Other	0	0%
Race/Ethnicity	American Indian/Indigenous Group/Alaska	0	0%
(n = 142)	Native	3	2.1%
	Asian/Asian American/Pacific Islander	9	6.3%
	Black/African American	1	0.7%
	Hispanic/Latino/Latina	0	0%
	White/Caucasian	126	87.5%
	Middle Eastern/Arab	2	1.4%
	Multiracial/Biracial	1	0.7%
	Other		
Year in College	1st Year/Freshman	46	31.9%
(n = 141)	2ndYear/Sophomore	34	23.6%
	3rdYear/Junior	26	18.1%
	4th Year/Senior	31	21.5%
	5th Year or Above	4	2.8%
Religious	Yes	116	80.6%
Identity	No	26	18.3%

Table 2

Bivariate Correlation Results

Variable		r			
	1.	2.	3.	3a.	3b.
4. Anxiety	_	.53**	.30**	.33**	.22*
5. IU	.53**	_	.34**	.45**	.22*
6. Spirituality	.30**	.34**	_	.80**	.93**
a. EWBS	.33**	.45**	.80**	_	.53**
b. RWBS	.22*	.22*	.93**	.53**	_

*Note: *p <.01; **p <.001*

Table 3

Regression Coefficients

Predictor	Model 1			Model 2		
	β	b	p	β	b	p
IU	0.489	0.318	<.001	0.412	.268	.022
Spirituality	0.128	0.82	.090	0.008	.005	.976
INT IUxS				0.167	.001	.633

Note: Model 2 assesses the moderating effect of spirituality

References

Abramowitz, J. S., Huppert, J. D., Cohen, A. B., Tolin, D. F., & Cahill, S. P. (2002). Religious
obsessions and compulsions in a non-clinical sample: The Penn Inventory of Scrupulosity
(PIOS). *Behaviour Research and Therapy, 40*, 825-838.

Achour, M., Souici, D., Bensaid, B., Zaki, M. B. A., Ahmed, A., & Alnahari, A. (2021). Coping
with anxiety during the COVID-19 pandemic: A case study of academics in the Muslim
world. *Journal of Religion and Health, 60*, 4579-4599.

AlHadi, A. N., Alarabi, M. A. & Khulood, M. A. (2021). Mental health and its association with
coping strategies and intolerance of uncertainty during the COVID-19 pandemic among
the general population in Saudi Arabia: Cross-sectional study. *BMC Psychiatry, 21*(382),
1-13. https://doi.org/10.1186/s12888-021-03370-4

American College Health Association (2023). A*merican College Health Association-National
College Health Assessment III: Reference Group Executive Summary Spring 2023*. Silver
Spring, MD: American College Health Association.

American Counseling Association. (2014). *2014 ACA code of ethics*.
https://www.counseling.org/docs/default-source/default-document-library/2014-code-of-
ethics-finaladdress.pdf

American Psychiatric Association (2022). *Diagnostic and statistical manual of mental disorders*
(5th ed., text rev.) https://doi.org/10.1176/appi.books.9780890425787

American Psychological Association (2020). Stress in America 2020: A national mental health
crisis. Retrieved April 23, 2022 from
https://www.apa.org/news/press/releases/stress/2020/report-october

https://www.apa.org/news/press/releases/stress/2020/sia-mental-health-crisis.pdfAssociation for

Spiritual, Ethical and Religious Values in Counseling [ASERVIC](2009).

Spiritual Competencies: Competencies for addressing spiritual and religious issues in

counseling. Retrieved from http://www.aservic.org/

Association for Spiritual, Ethical and Religious Values in Counseling [ASERVIC] (n.d.).

ASERVIC White Paper. Retrieved from https://aservic.org/aservic-white-paper/aservic-

white-paper-2/

Anderson, J. & Coduto, K. D. (2022). Attitudinal and emotional reactions to the insurrection at

the U.S. Capitol on January 6, 2021. *American Behavioral Scientist, 00*(0), 1-19.

https://doi.org/10.1177/00027642221132796

Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to

stress: A meta-analysis. *Journal of Clinical Psychology, 61*(4),461-480.

Anxiety and Depression Association of America [ADAA] (n.d.). *Anxiety disorders – Facts and

statistics.* Retrieved from https://adaa.org/understanding-anxiety/facts-statistics

Arbona, C., Fan, W., Phang, A., Olvera, N., & Dios, M. (2021). Intolerance of uncertainty,

anxiety, and career indecision: A mediation model. *Journal of Career Assessment, 29*(4),

699-716. DOI: 10.1177/10690727211002564

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens

through the twenties. *American Psychologist, 55*(5), 469-480.

Arnett, J. J. (2015). *Emerging adulthood: The winding road from the late teens through the

twenties* (2nd ed). Oxford University Press.

https://doi.org/10.1093/oxfordhb/9780100705574.013.9

Artime, T. M., Buchholz, K. R., & Jakupcak, M. (2019). Mental health symptoms and treatment

utilization among trauma-exposed college students. *Psychological Trauma: Theory, Research, Practice, and Policy, 11*(3), 274-282.

Associated Press (2022). Iranians protest in capital over women's death in custody. Retrieved from https://apnews.com/article/middle-east-iran-arrests-tehran-56c37c03a96701de7043e127f0eda279

Associated Press (2023). Russian mercenary group revolt against Moscow fizzles but exposes vulnerabilities. Retrieved from https://apnews.com/article/russia-ukraine-wagner-prigozhin-9acbdf1eda849692ca0423a4116058d1

Auxier, B. & Anderson, M. (2021). Social media use in 2021. *Pew Research Center*. Retrieved from https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/

Ayten, A., & Karagöz, S. (2021). Religiosity, spirituality, forgiveness, religious coping as predictors of life satisfaction and generalized anxiety: A quantitative study on Turkish Muslim university students. *Spiritual Psychology and Counseling, 6*(1), 47-58. https://dx.doi.org/10.37898/spc.2021.6.1.130

Baerg, L., & Bruchmann, K. (2022). COVID-19 information overload: Intolerance of uncertainty moderates the relationship between frequency of internet searching and fear of COVID-19. *Acta Psychologica, 224*, 1-6. https://doi.org/10.1016/j.actpsy.2022.103534

Bardeen, J.R., & Michel, J.S. (2017). The buffering effect of religiosity on the relationship between intolerance of uncertainty and depressive symptoms. *Psychology of Religion and Spirituality, 9*(Supplement1), S90-S95.

Bauer, E. A., MacNamara, A., Sandre, A., Lonsdorf, T.B., Weinberg, A., Morriss, J., & van

    Reekum, C. M. (2019). Intolerance of uncertainty and threat generalization: A replication

    and extension. *Society for Psychophysiological Research,* 1-18.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong—desire for interpersonal

    attachments as a fundamental human-motivation. Psychological Bulletin, 117, 497–529.

    http://dx.doi.org/10.1037/0033-2909.117.3.497

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical

    anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*,

    893-897.

Behar, E., DiMarco, I.D., Hekler, E. B., Mohlman, J., & Staples, A. M. (20090. Current

    theoretical models of generalized anxiety disorder (GAD): Conceptual review and

    treatment implications. *Journal of Anxiety Disorders, 23*, 1011-1023.

Berkel, L. A., Nilsson, J. E., Kelly, P. J., Anderson, W. M., Joiner, A. V., Davids, C. & Serpe, C.

    R. (2019). Faith of our sister soldiers: National Guard women share stories of their faith

    during and after deployment. *Journal of Religion and Health, 58*, 1753-2769.

    https://doi.org/10.1007/s10943-019-00839-1

Bertuccio, R. F., & Runion, M. C. (2020). Considering grief in mental health outcomes of

    COVID-19. Psychological Trauma: Theory, Research, Practice, and Policy, 12(S1), S87–

    S89. https://doi-org.spot.lib.auburn.edu/10.1037/tra0000723

Betts, M., Grabsch, D. K., Davis, V. D., Bell, L. M., & Sheedy, F. A. (2023). Exploring the

    motivations of students to engage in their spiritual, religious, or faith lives in college.

    Journal of Beliefs and Values, 44(3), 441-454.

    https://doi.org/10.1080/13617672.2022.2147684

Boswell, J. F., Thompson-Hollands, J., Farchione, T. J., & Barlow, D.H. (2013). Intolerance of

uncertainty: A common factor in the treatment of emotional disorders. Journal of Clinical

Psychology, 69(6), 630-645.

Bowlby, J.(1969). *Attachment and loss: Attachment (Vol.1).* NewYork, NY: BasicBooks.

Bronfenbrenner, U. (1979). *The ecology of human development.* Harvard University Press.

Brown, S. (2020). Overwhelmed: The real campus mental-health crisis and new models for

well-being. *The Chronicle of Higher Education*. Retrieved on April 24, 2022 from

https://store.chronicle.com/products/overwhelmed

Browning, M.H.E.M., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach,

L., Cloutier, S., Vu, T. M., Thomsen, J., Reigner, N., Covelli Metcalf, E., D'Antonio, A.,

Helbich, M., Bratman, G. N., & Alvarez, H. O. (2021). Psychological impacts from

COVID-19 among university students: Risk factors across seven states in the United

States. *PloS ONE, 16*(1), 1-27.

Brumfiel, G. (2022). *Russia's nuclear arsenal is huge, but will Putin use it?* National Public

Radio. Retrieved from https://www.npr.org/2022/10/17/1129443703/russias-nuclear-

arsenal-is-huge-but-will-putin-use-it

Bufford, R. K., Paloutzian, R. F., & Ellison, C. W. (1991). Norms for the spiritual well-being

scale. *Journal of Psychology and Theology, 19*(1), 56-70.

Burney, N., Osmany, M., & Khan, W. (2017). Spirituality and psychological well-being of

young adults. *Indian Journal of Health and Well-being, 8*(1), 1481-1484.

Carleton, R.N. (2016). Into the unknown: A review and synthesis of contemporary models

involving uncertainty. *Journal of Anxiety Disorders, 39*, 30-43.

Carleton, R.N. (2016a). Fear of the unknown: One fear to rule them all? *Journal of Anxiety*

Disorder, 41, 5-21.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the

Brief COPE. *International Journal of Behavioral Medicine*, 4, 92-100.

Celik, D., Alpay, E. H., Celebi, B., & Turkeli, A. (2021). Intolerance of uncertainty, rumination,

post-traumatic stress symptoms and aggression during COVID-19: A serial mediation

model. *European Journal of Psychotraumatology, 12*, 1953790.

https://doi.org/10.1080/20008198.2021.1953790.

Chigwedere, C., & Moran, J. (2022). Further development of the intolerance of uncertainty

model of GAD: a case series. *The Cognitive Behaviour Therapist, 15*, 1-16.

Coen-Sanchez, K. Ebenso, B., El-Mowfi, L. M., Berghs, M., Idriss-Wheeler, D., & Yaya, Sanni

(2022). Repercussions of overturning *Roe V. Wade* for women across systems and

beyond borders. *Reproductive Health, 19*(184), 1-5.

https://doi.org/10.1186/s12978-022-01490-y

Council of the Accreditation of Counseling and Related Educational Programs [CACREP]

(2015). *2016 CACREP Standards*. Retrieved from https://www.cacrep.org/for-

programs/2016-cacrep-standards/

Copeland, W. E., McGinnis, E., Bai, Y., Adams, Z., Nardone, H., Devadanam, V., Rettew, J., &

Hudziak, J. J. (2021). Impact of COVID-19 pandemic on college students' mental health

and wellbeing. Journal of the American Academy of Child and Adolescent Psychiatry,

60(1), 134-141.

Dattilo, T.M., Fisher, R. S., Traino, K. A., Roberts, C. M., Lehmann, V., Chaney, J. M., &

Mullins, L. L. (2022). Dating anxiety during the global COVID-19 pandemic:

Implications for college students. *Translational Issues in Psychological Science*.

Advance online publication. http://dx.doi.org/10.1037/tps0000307

Denice, P. A. (2021). Choosing and changing course: Postsecondary students and the process of

    selecting a major field of study. *Sociological Perspectives, 64*(1), 82-108.

    https://doi.org/10.1177/0731121420921903

Delaney, C., Barrere, C., & Helming, M. (2011). The influence of a spirituality-based

    intervention on quality of life, depression, and anxiety in community-dwelling adults

    with cardiovascular disease: A pilot study. *Journal of Holistic Nursing, 29*(1), 21-32.

del-Valle, M.V., López-Morales, Andrés, M., Yerro-Avincetto, M., Trudo, R. G., Urquijo, S., &

    Canet-Juric, L. (2022). Intolerance of COVID-19 related uncertainty and depressive and

    anxiety symptoms during the pandemic: A longitudinal study in Argentina. *Journal of*

    Anxiety Disorders, 86. https://doi.org/10.1016/j.janxdis.2022.102531

Dobbs. V. Jackson Women's Health Organization No. 19-1392, 597 U.S. 215 (2022)

Dugas, M.J., Freeston, M.H., & Ladouceur, R. (1997) Cognitive Therapy and Research, 21(6),

    593-606.

Duru, Y.B. Gunal, V., Agaoglu, C. Y., & Tatli, C. (2022). The role of COVID-19 anxiety and

    intolerance of uncertainty in predicting resilience. *Scandinavian Journal of Psychology,*

    63, 522-529. DOI: 10.1111/sjop.12820

Eggers, A. C., Garro, H., & Grimmer, J. (2021). No evidence for systematic voter fraud: A guide

    to statistical claims about the 2020 election. *PNAS, 118*(45), 1-7.

    https://doi.org/10.1073/pnas.2103619118

Ekwonye, A.U., Sheikhomar, N., & Phung, V. (2020). Spirituality: A psychological resource for

    managing academic related stressors. *Mental Health, Religion, & Culture, 23*(9), 826-

    839. https://doi.org/10.1080/13674676.2020.1823951

Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. J*ournal of Psychology and Theology, 11*(4), 330-340.

Exline, J. J., Van Tongeren, D. R., Bradley, D. F., Wilt, J. A., Stauner, N., Pargament, K. I., & DeWall, C. N. (2022). Pulling away from religion: Religious/spiritual struggles and religious disengagement among college students. *Psychology of Religion and Spirituality, 14*(3), 300-311. http://dx.doi.org/10.1037/rel0000375

Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and moderation effects. *Prev Sci, 10*, 87-99. https://doi.org/10.1007/s11121-008-0109-6

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175–191. https://doi.org/10.3758/BF03193146

Fergus, T. A., & Rowatt, W. C. (2014). Examining a purported association between attachment to God and scrupulosity. *Psychology of Religion and Spirituality, 6*(3), 230-236. https://doi.org/10.1037/a0036345

Fergus, T. A., & Rowatt, W. C. (2015). Uncertainty, god, and scrupulosity: Uncertainty salience and priming god concepts interact to cause greater fears of sin. *Journal of Behavior Therapy and Experimental Psychiatry, 46*, 93-98. http://dx.doi.org/10.1016/j.jbtep.2014.09.003

First, J. M., Shin, H., Ranjit, Y.S., & Houston, J.B. (2021). COVID-19 Stress and depression: Examining social media, traditional media, and interpersonal communication. *Journal of Loss and Trauma, 26*(2), 101-115. https://doi.org/10.1080/15325024.2020.1835386

Frants, A. (2023). Belarus says Wagner chief who staged mutiny is in Russia, raising questions about Kremlin's strategy. Associated Press. Retrieved from https://apnews.com/article/russia-wagner-mutiny-belarus-d7134f34ccea592e52e1dcb39f4aeb94

Freeston, M. Tiplady, A.,Mawn, L., Bottesi, G. & Thwaites, S. (2020). Towards a model of uncertainty distress in the context of Coronavirus (COVID-19). *The Cognitive Behaviour Therapy, 13*, 1-15.

Fydrich, T., Dowdall, D., & Chambless, D. L. (1992). Reliability and validity of the Beck Anxiety Inventory. *Journal of Anxiety Disorders, 6*, 55-61.

Gambrell, J. (2022). Analysis: Iran protests persist, becoming threat in Tehran. *Associated Press*. Retrieved from https://apnews.com/article/iran-middle-east-dubai-united-arab-emirates-tehran-fe1de90567e51ad6207fae5d2db56944

Gambrell, J. (2023) UN nuclear chief says large Ukraine atomic power plant held by Russia faces 'dangerous situation.' Associated Press. Retrieved from https://apnews.com/article/ukraine-zaporizhzhia-nuclear-plant-russia-iaea3e10c5f6f45131beec0ed83d68478323

Garcia, F. E., Barraza-Peña C. G., Wlodarczyk, A., Alvear-Carrasco, M., Reyes-Reyes, A. (2018). Psychometric properties of the Brief-COPE for the evaluation of coping strategies in the Chilean population. *Psicologia: Reflexão e Critica, 31*(22). https://doi.org/10.1186/s41155-018-0102-3

Goldmann, E., & Galea, S. (2014). Mental health consequences of disasters. *Annual Review of Public Health, 35*, 169-183.

Groves, D., Clark, L.H., & Clark, G. I. (2019). The relationship between worry and intolerance of uncertainty subtypes. *Australian Psychologist, 55*, 132-142.

Grupe, D. W. & Nitschke, J. B. (2013). Uncertainty and anticipation in anxiety: An integrated

    neurobiological and psychological perspective. Nature Reviews Neuroscience, 14, 488-

    501.

Guo, H., & Shen, H. (2021). Media exposure to COVID-19 epidemic and threatening dream

    frequency: A moderated mediation model of anxiety and coping efficacy. *Dreaming,*

    31(1), 1-19. https://doi.org/10.1037/drm0000159

Hawkins, D. & Simon-Roberts, S. (2022). Privilege and the legacy of the Insurrection: Critical

    race theory, January 6th, and preserving black resistance. *American Behavioral Scientist,*

    00(0), 1-18. https://doi.org/10.1177/00027642221091195

Henderson, W. M., & Kent, B. V. (2022). Attachment to God and psychological distress:

    evidence of a curvilinear relationship. *Journal for the Scientific Study of Religion, 61*(1).

    161-177.

Hill, P.C. & Pargament, K. I. (2008). Advances in the conceptualization and measurement of

    religion and spirituality: Implications for physical and mental health research. *Journal of*

    Psychology of Religion and Spirituality, S(1), 3-17.

Holman, E. A., Garfin, D. R., & Silver, R. C. (2014). Media's role in broadcasting acute stress

    following the Boston Marathon bombings. *PNAS, 111*(1), 93-98.

Howden, J.W. (1992). *Development and psychometric characteristics of the spirituality*

    assessment scale (Doctoral Dissertation). Retrieved from ProQuest Dissertations

    &Theses Global. (9312917)

Howell, A. N., Carelton, R., N., Horswill, S. C., Parkerson, H. A., Weeks, J. W., & Asmundson,

G.J.G. (2019). Intolerance of uncertainty moderates the relations among religiosity and

    motives for religion, depression, and social evaluation fears. *Journal of clinical*

    Psychology, 75, 95-115.

Judge, C. P., Wolgemuth, T. E., Hamm, M. E., & Borrero, S. (2017). "Without bodily autonomy

    we are not free": Exploring women's concerns about future access to contraception

    following the 2016 US presidential election. *Contraception, 96*, 370-377.

    http://dx.doi.org/10.1016/j.contraception.2017.07.169

Julian, L. J. (2011). Measures of anxiety. *Arthritis Care Research, 63*, 1-11.

    Doi:10.1002/acr.20561

Kadiroğlu, T., Tüfekci, F. G., & Kara, A. (2021). Determining the religious coping styles of

    adolescents in Turkey during COVID-19. *Journal of Religion and Health, 60*, 3406-

    3417.

Kecojevic, A., Basch, C. H., Sullivan, M., & Davi, N. K. (2020). The impact of the COVID-19

    epidemic on mental health of undergraduate students in New Jersey, cross-sectional

    study. *PloS ONE, 15*(9), 1-16.

Khawaja, N. G., & Yu, L., N. H. (2010). A comparison of the 27-item and 12-item intolerance

    of uncertainty scales. *Clinical Psychologist, 14*, 97-106. Doi:

    10.1080/13284207.2010.502542.

Kurapov, A., Pavlenko, V., Drozdov, A., Bezliudna, V., Reznik, A., & Isralowitz, R. Toward an

    understanding of the Russian-Ukrainian War impact on university students and

    personnel. *Journal of Loss and Trauma, 28*(2), 167-174.

      https://doi.org/10.1080/15325024.2022.2084838

Lazarus, R.S., & Folkman, S.(1984). *Stress, appraisal and coping.* Springer.

Lewis, J.M., & Hensley, T. R. (n.d.). *The May 4 shootings at Kent State University: The search for historical accuracy*. Retrieved from https://www.kent.edu/may-4-historical-accuracy

Liu, Y. & Zhong, J. (2020). Structure and psychometric properties of the Penn State Worry Questionnaire for Children in Chinese adolescents. *Journal of Abnormal Child Psychology*, 48, 1499-1510.

Majali, S. A. (2020). Positive Anxiety and its Role in Motivation and Achievements among University Students. International Journal of Instruction, 13(4), 975-986. https://doi.org/10.29333/iji.2020.13459a

Mayhew, M. J., Rockenbach, A. N., & Dahl, L. S. (2020). Owning faith: First-year college-going and the development of students' self-authored worldview commitments. *The Journal of Higher Education, 91*(6), 977-1002. https://doi.org/10.1080/00221546.2020.1732175

McEvoy, P. M., & Mahoney, A.E.J. (2011). Achieving certainty about the structure of intolerance of uncertainty in a treatment-seeking sample with anxiety and depression. *Journal of Anxiety Disorder, 25*, 112-122.

McEvoy, P. M., & Mahoney, A.E.J. (2012). To be sure, to be sure: Intolerance of uncertainty mediates symptoms of various anxiety disorders and depression. *Behavior Therapy, 43*, 533-545.

National Alliance on Mental Illness [NAMI] (2017). Anxiety disorders. Retrieved from https://www.nami.org/About-Mental-Illness/Mental-Health-Conditions/Anxiety-Disorders

National Alliance on Mental Illness [NAMI] (2022). Mental health by the numbers. Retrieved from https://www.nami.org/mhstats.

Nordstrom, A. H. (2015). The Voices Project: Reducing white students' racism in introduction to

  psychology. *Teaching of Psychology, 42*(1), 43-50.

  https://doi.org/10.1177/0098628314562524

Obaid Al Saidi, A. M., Nur, F. A., Al-Mandhari, A. S., El Rabbat, M., Hafeez, A. &,

  Abubakar, A. (2020). Decisive leadership is a necessity in the COVID-19 response. *The*

  Lancet, 296, (295-298).

Oxhandler, H.K., & Parrish, D. E. (2017). Integrating clients' religion/spirituality in clinical

  practice: A comparison among social workers, psychologists, counselors, marriage and

  family therapists, and nurses. *Journal of Clinical Psychology, 74*, 680-694.

Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and the quality of

  life. In L.A. Peplau and D. Perlman (Eds.), *Loneliness: A sourcebook of current theory,*

  research, and therapy. NY: Wiley, 224-237.

Paloutzian, R. F. & Ellison, C. W. (2021). *Manual for the Spiritual Well-Being Scale*. Retrieved

  from https://www.westmont.edu/psychology/raymond-paloutzian-spiritual-wellbeing-

  scale

Pan, A., Liu, L., Wang, C., Guo, H., Hao, X., Wang, Q., Huang, J., He, N., Yu, H., Lin, X.,

  Wei, S., & Wu, T. (2020). Association of public health interventions with the

  epidemiology of the COVID-19 outbreak in Wuhan, China. *Journal of the American*

  Medical Association, 323(19), 1915-1923. doi:10.1001/jama.2020.6130.

Pew Research Center (2014). *Religious Landscape Survey*. Retrieved from

  https://www.pewresearch.org/religion/religious-landscape-study/

Planned Parenthood v. Casey, 505 U.S. 833 (1992)

Polovko, O. & Glotov, S. (2023). The educational process of Ukrainian university students

following the full-scale Russian invasion. *London Review of Education, 21*(1), 1-12. https://doi.org/10.14324/LRE.21.1.31.

Portnoff, L., McClintock, C., Lau, E., Choi, S., & Miller, L. (2017). Spirituality cuts in half the relative risk for depression: Findings from the United States, China, and India. *Spirituality in Clinical Practice, 4*(1), 22-31.

Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Yifeng, X. (2020). A nationwide survey of psychological distress among Chinese people in the COIVD-19 epidemic: implications and policy recommendations. *General Psychiatry, 33*(1-3).

Raj, N.S.X.E., & Sim, T. N. (2022). Stressful events, stress level, and psychological distress: A moderated mediation model with secure attachment to God as moderator. *Psychology of Religion and Spirituality, 14*(4), 473-479. http://dx.doi.org/10.1037/rel0000388

Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. Asian Journal of Psychiatry, 52, 1-5. https://doi.org/10.1016/j.ajp.2020.102066

Ramos, K., Barrera, T. L., & Stanley, M. A. (2014). Incorporating nonmainstream spirituality into CBT for anxiety: A case study. *Spirituality in Clinical Practice, 1*(4), 269-277.

Ratts, M. J., Singh, A. A., Nassar-McMillan, S., Butler, S. K., & McCullough, J. R. (2016). Multicultural and Social Justice Counseling Competencies: Guidelines for the Counseling Profession. Journal of Multicultural Counseling and Development, 44(1), 28–48. Portico. https://doi.org/10.1002/jmcd.12035

Reis, A., Saheb, R., Parish, P., Earl, A., Klupp, N., & Sperandei, S. (2021). How I cope at university: Self-directed stress management strategies of Australian students. *Stress and Health, 37*, 1010-1025. https://doi.org/10.1002/smi.3508

Rettie, H., & Daniels, J. (2020). Coping and tolerance of uncertainty: Predictors and mediators

of mental health during the COVID-19 pandemic. *American Psychologist*.

https://doi-org.spot.lib.auburn.edu/10.1037/amp0000710.supp (Supplemental)

Roberts, J. A., & David, M.E. (2020). The social media party: Fear of missing out (FoMO), social media intensity, connection, and well-being. *International Journal of Human-Computer Interaction, 36*(4), 386-392. doi.org/10.1080/10447318.2019.1646517

Robertson, L. A., & Young, M. E. (2011). The revised ASERVIC spiritual competencies. In C. S. Cashwell & J. S. Young (Eds.), *Integrating spirituality and religion into counseling: A guide to competent practice* (pp. 25–42). American Counseling Association.

Robichard, M. (2013). Cognitive behavior therapy targeting intolerance of uncertainty: Application to a clinical case of generalized anxiety disorder. *Cognitive and Behavioral Practice, 20*(3), 251-263. https://doi.org/10/1016/j.brat.2004.02.007.

Roberts, J. A., & David, M.E. (2020). The social media party: Fear of missing out (FoMO), social media intensity, connection, and well-being. *International Journal of Human-Computer Interaction, 36*(4), 386-392. doi.org/10.1080/10447318.2019.1646517

Roe v. Wade, 410 U.S. 113 (1973).

Rosmarin, D.H., Pirutinsky, S., Auerbach, R. P., Bjögvinsson, T., Bigda-Peyton, J., Andersson, G., Pargament, K. I., & Krumrei, E. J. (2011). Incorporating spiritual beliefs into a cognitive model of worry. *Journal of Clinical Psychology, 67*(7), 691-700. DOI: 10.1002/jclp.20798

Rowatt,W.C., & Kirkpatrick, L.A. (2002).Two dimensions of attachment to God and their relation to affect, religiosity, and personality constructs. *Journal for the Scientific Study of Religion, 41*,637–651. doi:10.1111/ 1468-5906.00143

Rowell, C. P., Cashwell, C. S., & Zambrowicz, R. (2020). Calm in the storm: The influence of

    spirituality, dispositional forgiveness, and God concept on anxiety. *Journal of Spirituality*

    in Mental Health, 22(3), 240-251. https://doi.org/10.1080/19349637.2019.1593916

Satici, B., Saricali, M. S., Satici, S. A. & Griffiths, M.D. (2020). Intolerance of uncertainty and

    mental wellbeing: Serial medication by rumination and fear of COVID-

    19. *International Journal of Mental Health and Addiction*.

Saulnier, K.G., Koscinski, B.,Volarov, M., Accorso, C., Austin, M. J., Suhr, J.A., Allan, D., &

    Allan, N. (2022) Anxiety sensitivity and intolerance of uncertainty are unique and

    interactive risk factors for COVID-19 safety behaviors and worries. *Cognitive Behaviour*

    Therapy, 51(3), 217-228, https://doi.org/10.1080/16506073.2021.1976819

Schnell, T. (2012). Spirituality with and without religion - Differential relationships with

    personality. *Archive for the Psychology of Religion, 34*(2012), 33-61.

    https://doi.org/10.1163/157361212X644495

Shapiro, M. O., Short, N. A., Morabito, D., & Schmidt, N. B. (2020). Prospective associations

    between intolerance of uncertainty and psychopathology. *Journal of Personality and*

    Individual Differences, 166, 1-7.

Shapiro, A., Lim, M., & Intagliata, C. (2022). Trigger laws in now 14 states place further

    restrictions and punishments on abortion. *National Public Radio*. Retrieved from

    https://www.npr.org/2022/08/25/1119480814/trigger-laws-in-now-14-states-place-

    further-restrictions-and-punishments-on-abor

Shihata, S., McEvoy, P. M., & Mullan, B.A. (2016). Pathways from uncertainty to anxiety: An

    evaluation of a hierarchical model of trait and disorder-specific intolerance of uncertainty

    on anxiety disorder symptoms. Journal of Anxiety Disorders, *45*, 72-79.

Shoychet, G., Lenton-Brym, A. P., & Antony, M. M. (2022). The impact of COVID-19

    anxiety on quality of life in Canadian adults: The moderating role of intolerance of

    uncertainty and health locus of control. *Canadian Journal of Behavioural Science /*

    Revue canadienne des sciences du comportement. Advance online publication.

    http://dx.doi.org/10.1037/cbs000033

Sibley, C. G., Greaves, L. M., Satherley, N., Wilson, M. S., Overall, N. C., Lee, C. H. J.,

    Milojev, P., Bulbulia, J., Osborne, D., Milfont, T. L., Houkamau, C. A., Duck, I. M.,

    Vickers-Jones, R., & Barlow, F. K. (2020). Effects of the COVID-19 pandemic and

    nationwide lockdown on trust, attitudes toward government, and well-being. *American*

    Psychologist, 75(5), 618–630.

    https://doi.org.spot.lib.auburn.edu/10.1037/amp0000662.supp (Supplemental)

Spielberger, C. D. (1972). *Anxiety: Current trends in theory and research: I.* Academic Press.

Spielberger C.D., Gorsuch, R.L., Lushene, P.R., Vagg, P.R., Jacobs, A.G. (1983). *Manual for the*

    State-Trait Anxiety Inventory (Form Y). Consulting Psychologists Press, Inc.: Palo Alto

Spitzer, E. G., Crosby, E. S., & Witte, T. K. (2022). Looking through a filtered lens: Negative

    social comparison on social media and suicidal ideation among young adults. *Psychology*

    of Popular Media. Advance online publication. http://dx.doi.org/10.1037/ppm0000380

Sytnykova, Y., Shlenova, M., Kyrpenko, Y., Kyrpenko, V., Konoplenko, N, & Hrynchenko, I.

    (2023). Teaching technologies online: Changes of experiences in wartime in Ukraine.

    International Journal of Emerging Technologies in Learning, 18(18), 165-176.

    https://doi.org/10.3991/ijet.v18i18.40491

Upenieks, L., Bounds, E. M., Melton, K. K., Glanzer, P., & Schnitker, S. A. (2024). Attachment

    to God, contingent self-worth, and mental health outcomes in U.S. collegiate athletes.

Journal of Religion and Health, 63, 445-465. https://doi.org/10.1007/s10943-023-01907-3

https://www.bls.gov/news.release/cpi.nr0.htmU.S. Bureau of Labor Statistics (2023). Labor force statistics from the current population

survey. Retrieved from https://www.bls.gov/cps/

U.S. Census Bureau (2020). Current population survey data. Retrieved from

https://www.census.gov/programs-surveys/cps/data.html.

U.S. Bureau of Labor Statistics (2024). Consumer Price Index. Retrieved from

https://www.bls.gov/cpi/

U.S. Department of Defense (2024). Russian war in Ukraine timeline. Retrieved from

https://www.defense.gov/Spotlights/Support-for-Ukraine/Timeline/

U.S. Department of Education, National Center for Education Statistics, Integrated

Postsecondary Education Data System (IPEDS), Spring 2011 through Spring 2022, Fall

Enrollment component. Enrollment in Degree-Granting Institutions Projection Model,

through 2031. See *Digest of Education Statistics 2022*, table 303.30.

U.S. Department of Justice (2021). One year since the Jan. 6 attack on the capitol. Retrieved

from https://www.justice.gov/usao-dc/one-year-jan-6-attack-capitol

U.S. Department of State (2022). United with Ukraine. Retrieved from

https://www.state.gov/united-with-

ukraine/#:~:text=The%20United%20States%20is%20the,nearly%20%24302%20million

%20this%20year.

Varghese, M. K. & Delariate, C. F. (2021). Intolerance of uncertainty as a predictor of

psychological distress among college students during the pandemic. *Indian Journal of Health and Well-being, 12*(4), 517-521.

Williams-Smith, R. & McMillan, S. J. (2022). A systems-theory analysis of the relationship between communication, beliefs/practices, religiosity, spirituality, and expected future religious practice of college students. *Journal of Research on Christian Education, 31*(1), 88-112. https://doi.org/10.1080/10656219.2022.2035866

Yang, D., Dai, X., & Tu, C. (2020). The effect of the 2019 novel coronavirus pandemic on college students in Wuhan. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(1), 6-14.

Appendices

Appendix A – Information Letter and Email Invitation

COLLEGE OF EDUCATION

DEPARTMENT OF
SPECIAL EDUCATION, REHABILITATION, AND COUNSELING

Information Letter

for a Research Study entitled

"An Examination of Intolerance of Uncertainty, Anxiety, and Spirituality in College Students"

You are invited to participate in a research study to examine the relationship between intolerance of uncertainty, anxiety and spirituality within undergraduate college students. The study is being conducted by Madeline LaPolla (Doctoral Candidate) under the direction of Dr. Heather Delgado (Assistant Professor) in the Auburn University Department of Education. You were selected as a possible participant because you are in a currently enrolled in a college program, are in a College of Education course, and are at least 18 years of age.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to answer a series of questions regarding uncertainty about the future, anxiety, and spirituality within a Qualtrics survey. Your total time commitment will be approximately 30 minutes.

Are there any risks or discomforts? Participants are not expected to experience any discomfort outside of what is expected in discussing potentially emotionally charged topics.

Are there any benefits to yourself or others? If you participate in this study, you can expect to contribute to research surrounding protective factors against anxiety experienced by uncertainty of the future. If you access this study through SONA, you will receive 0.5 credits for participation. We cannot promise you that you will receive any or all of the benefits described.

Are there any costs? There are no financial costs to participants.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. Your decision about whether to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Education, or your grade in your course.

> The Auburn University Institutional
> Review Board has approved this
> Document for use from
> __10/08/2023__ to __-------------__
> Protocol # ___23-118 EX 2302___

Your privacy will be protected. Any information obtained in connection with this study will be collected anonymously. Information obtained through your participation may be published in a professional journal or presented at a professional meeting.

If you have questions about this study, *please ask them now or* contact Madeline LaPolla at mzl0113@auburn.edu or Dr. Heather Delgado at hnm0030@auburn.edu. A copy of this document will be given to you upon request to keep.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, CLICK "YES" AND THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. A COPY OF THIS LETTER CAN BE PROVIDED UPON REQUEST.

VERSION DATE (date document created: 9/13/2023)

AUBURN
UNIVERSITY

COLLEGE OF EDUCATION

DEPARTMENT OF
SPECIAL EDUCATION, REHABILITATION, AND COUNSELING

E-MAIL INVITATION FOR ON-LINE SURVEY

Dear Participant,

I am a doctoral candidate in the Department of Special Education, Rehabilitation, and Counseling at Auburn University. I, along with my faculty principal investigator, Dr. Heather Delgado, would like to invite you to participate in my research study, An Examination of Intolerance of Uncertainty, Anxiety, and Spirituality in College Students, to examine the relationship between uncertainty about the future, anxiety, and spirituality in college students. You may participate if you are in a College of Education course, are between at least 18 years of age, and are actively enrolled in an undergraduate college program within the US.

Participants will be asked to answer a series of questions on Qualtrics that will take approximately 30 minutes. The risks from the study are no greater than those ordinarily experienced in the daily lives of the general population. As compensation for participating in the study, you will receive 0.5 SONA credit if you are taking the study on SONA. Participation in a study on SONA does require identifying information. However, individual answers to a SONA study are unknown within the system. If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Education or your grade in your course. All information is confidential, will be collected anonymously through Qualtrics, and will be stored on a password-protected program on a password-protected computer. There is no compensation, no cost, and no benefits with the exception of SONA credit, if applicable.

If you would like to know more information about this study, an information letter can be obtained by sending me an e-mail.

If you decide to participate after reading the letter, you can access the survey from a link in the letter. If you have any questions, please contact me at mzl0113@auburn.edu or my advisor, Dr. Heather Delgado, at hnm0030@auburn.edu.

Thank you for your consideration,

Madeline LaPolla, MEd, ALC, NCC
Auburn University
Counselor Education Doctoral Candidate

War eagle!

The Auburn University Institutional Review Board has approved this Document for use from 10/08/2023 to ------------- Protocol # 23-118 EX 2302

Page 9

Appendix B

Intolerance of Uncertainty Scale (IUS; Buhr & Dugas, 2002; Freeston et al., 1994)

IUS

IUS

You will find below a series of statements which describe how people may react to the uncertainties of life. Please use the scale below to describe to what extent each item is characteristic of you. Please circle a number (1 to 5) that describes you best.

	Not at all characteristic of me		Somewhat characteristic of me		Entirely characteristic of me
1. Uncertainty stops me from having a firm opinion.	1	2	3	4	5
2. Being uncertain means that a person is disorganized.	1	2	3	4	5
3. Uncertainty makes life intolerable.	1	2	3	4	5
4. It's unfair not having any guarantees in life.	1	2	3	4	5
5. My mind can't be relaxed if I don't know what will happen tomorrow.	1	2	3	4	5
6. Uncertainty makes me uneasy, anxious, or stressed.	1	2	3	4	5
7. Unforeseen events upset me greatly.	1	2	3	4	5
8. It frustrates me not having all the information I need.	1	2	3	4	5
9. Uncertainty keeps me from living a full life.	1	2	3	4	5
10. One should always look ahead so as to avoid surprises.	1	2	3	4	5
11. A small unforeseen event can spoil everything, even with the best of planning.	1	2	3	4	5
12. When it's time to act, uncertainty paralyses me.	1	2	3	4	5
13. Being uncertain means that I am not first rate.	1	2	3	4	5

	Not at all characteristic of me	Somewhat characteristic of me	Entirely characteristic of me
14. When I am uncertain, I can't go forward.	1 2	3	4 5
15. When I am uncertain I can't function very well.	1 2	3	4 5
16. Unlike me, others always seem to know where they are going with their lives.	1 2	3	4 5
17. Uncertainty makes me vulnerable, unhappy, or sad.	1 2	3	4 5
18. I always want to know what the future has in store for me.	1 2	3	4 5
19. I can't stand being taken by surprise.	1 2	3	4 5
20. The smallest doubt can stop me from acting.	1 2	3	4 5
21. I should be able to organize everything in advance.	1 2	3	4 5
22. Being uncertain means that I lack confidence.	1 2	3	4 5
23. I think it's unfair that other people seem sure about their future.	1 2	3	4 5
24. Uncertainty keeps me from sleeping soundly.	1 2	3	4 5
25. I must get away from all uncertain situations.	1 2	3	4 5
26. The ambiguities in life stress me	1 2	3	4 5
27. I can't stand being undecided about my future.	1 2	3	4 5

Origianl French Version: Freeston, M.H., Rhéaume, J., Letarte, H., Dugas, M.J., & Ladouceur, R. (1994): Why do people worry? Personality and Individual Differences, 17(6), 791-802.

English Version: Buhr, K., Dugas, M. J. (2002). The intolerance of uncertainty scale: psychometric properties of the English version. Behavior Research and Therapy, 40, 931-945.

Appendix C
Beck Anxiety Inventory (BAI; Beck, et al., 1988)

Appendix D
Spiritual Wellbeing Scale (SWBS; Ellison, 1983; Paloutzian & Ellison, 1982)

SWB Scale

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA	= Strongly Agree	D	= Disagree
MA	= Moderately Agree	MD	= Moderately Disagree
A	= Agree	SD	= Strongly Disagree

1. I don't find much satisfaction in private prayer with God.   SA MA A D MD SD

2. I don't know who I am, where I came from, or where I'm going.   SA MA A D MD SD

3. I believe that God loves me and cares about me.   SA MA A D MD SD

4. I feel that life is a positive experience.   SA MA A D MD SD

5. I believe that God is impersonal and not interested in my daily situations.   SA MA A D MD SD

6. I feel unsettled about my future.   SA MA A D MD SD

7. I have a personally meaningful relationship with God.   SA MA A D MD SD

8. I feel very fulfilled and satisfied with life.   SA MA A D MD SD

9. I don't get much personal strength and support from my God   SA MA A D MD SD

10. I feel a sense of well-being about the direction my life is headed in.   SA MA A D MD SD

11. I believe that God is concerned about my problems.   SA MA A D MD SD

12. I don't enjoy much about life.   SA MA A D MD SD

13. I don't have a personally satisfying relationship with God.   SA MA A D MD SD

14. I feel good about my future.   SA MA A D MD SD

15. My relationship with God helps me not to feel lonely.   SA MA A D MD SD

16. I feel that life is full of conflict and unhappiness.   SA MA A D MD SD

17. I feel most fulfilled when I'm in close communion with God.   SA MA A D MD SD

18. Life doesn't have much meaning.   SA MA A D MD SD

19. My relation with God contributes to my sense of well-being.   SA MA A D MD SD

20. I believe there is some real purpose for my life.   SA MA A D MD SD

Appendix E

Demographic Questions

What is your age in years? _____

What is your race/ ethnicity?
__ American Indian/ Indigenous Group/ Alaska Native
__ Asian/ Asian American/ Pacific Islander
__ Black/ African American
__ Hispanic/ Latino/ Latina
__ Middle Eastern/ Arab
__ White/ Caucasian
__ Multiracial/ Biracial
Other (please indicate: _____)

What is your gender?
__ Male
__ Female
__ Non-binary/third gender
__ Prefer not to say
Other (please indicate: _____)

What year are you in college?
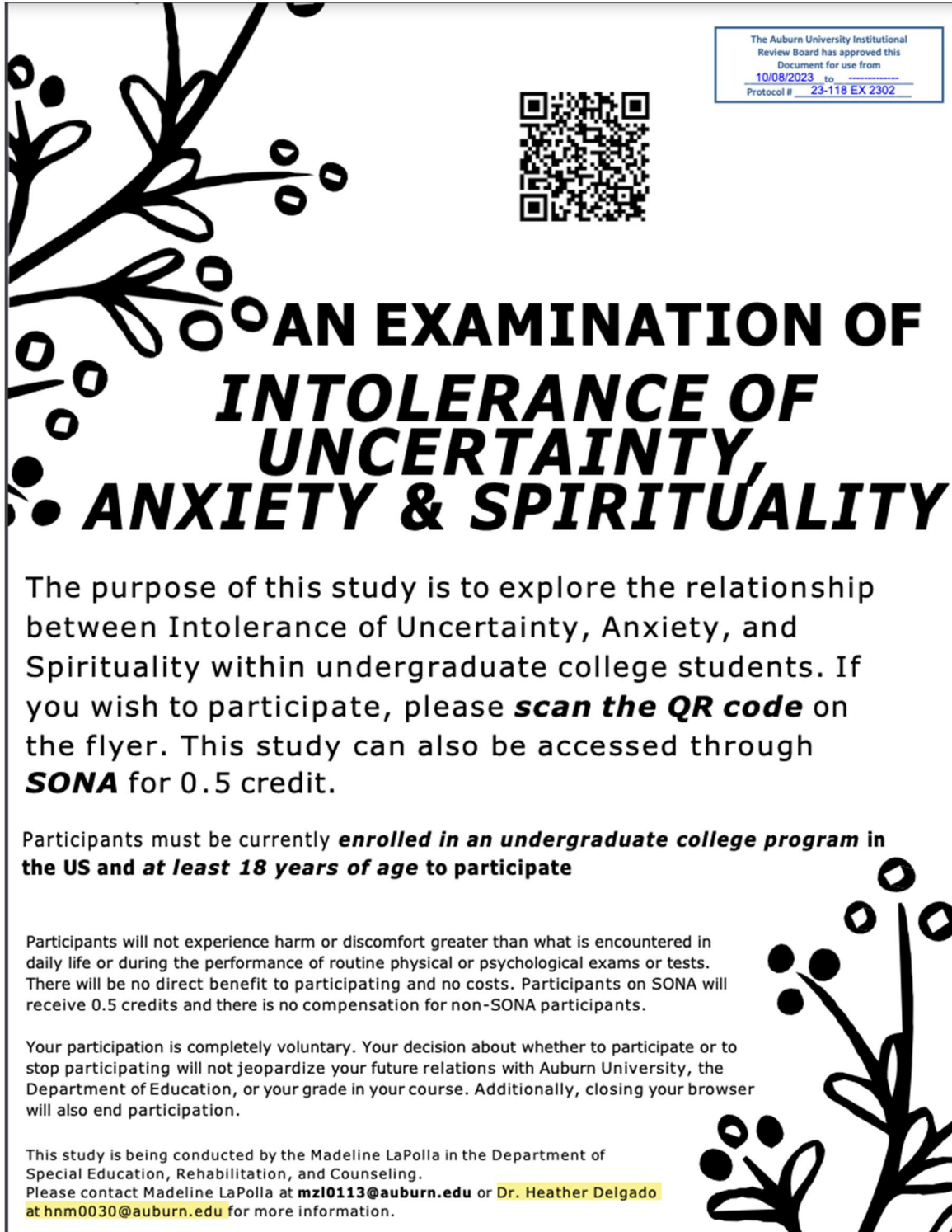__ 1st/freshman
__2nd/sophomore
__3rd/Junior
__4th/Senior
__ Fifth or above

Do you identify with a religion? If so, please identify.
__Yes (Fill-in box)
__No

The Auburn University Institutional Review Board has approved this Document for use from 10/08/2023 to -------------- Protocol # 23-118 EX 2302

AN EXAMINATION OF INTOLERANCE OF UNCERTAINTY, ANXIETY & SPIRITUALITY

The purpose of this study is to explore the relationship between Intolerance of Uncertainty, Anxiety, and Spirituality within undergraduate college students. If you wish to participate, please **scan the QR code** on the flyer. This study can also be accessed through **SONA** for 0.5 credit.

Participants must be currently **enrolled in an undergraduate college program** in the US and **at least 18 years of age** to participate

Participants will not experience harm or discomfort greater than what is encountered in daily life or during the performance of routine physical or psychological exams or tests. There will be no direct benefit to participating and no costs. Participants on SONA will receive 0.5 credits and there is no compensation for non-SONA participants.

Your participation is completely voluntary. Your decision about whether to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Education, or your grade in your course. Additionally, closing your browser will also end participation.

This study is being conducted by the Madeline LaPolla in the Department of Special Education, Rehabilitation, and Counseling.
Please contact Madeline LaPolla at **mzl0113@auburn.edu** or Dr. Heather Delgado at hnm0030@auburn.edu for more information.