Investigations into religious coping among United States veterans: A lens on measurement and implications for psychological wellbeing

by

Haley Marie Sherman

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 2024

Keywords: Veterans, psychometric evaluation, Brief Religious Coping (RCOPE) Scale, self-forgiveness, self-efficacy, psychological wellbeing

Approved by

Mallory Lucier-Greer, Chair, Professor of Human Development and Family Science
Adrienne Duke-Marks, Associate Professor & Extension Specialist of HDFS
Ben Hinnant, Associate Professor of Human Development and Family Science
Kyle Kostelecky, Associate Professor of Human Development and Family Science
Marilyn A. Cornish, Associate Professor of Counseling Psychology (Outside Reader)

Abstract

Pew Research Institute estimates that in 2020 approximately 70% of individuals in the United States (U.S.) identified as religious with some ties to a religious community or belief system (e.g., Christian, Jewish, Muslim, Hindu, Buddhist; Nadeem, 2022), and similar to the larger population, Service members in the U.S. military also identify as religious in high percentages (i.e., 70% identifying as Christian including non-denominational, Catholic, Protestant, and Mormon; National Academies of Sciences et al., 2019). Religion is multipurpose in that it may provide comfort, stimulate growth, enhance intimacy with a Higher Power, facilitate closeness with others, and/or offer meaning and purpose to life. As such, the use of religion as a resource in the context of stress, a term called *religious coping*, has been studied systematically in a variety of populations. Within the religious coping literature, two types of religious coping have been identified, positive and negative. Previous research shows that these forms of coping are different, but related constructs that are uniquely related to different health and wellbeing outcomes for those who value religion. In this dissertation, the constructs of positive religious coping and negative religious coping were examined through a psychometric lens and as distinct mechanisms with implications for the wellbeing of Veterans (N=170). Study 1 was a psychometric analysis of the two-factor Brief Religious Coping Scale (Brief RCOPE; Pargament et al., 2011; i.e., comprised of positive and negative religious coping subscales), that examined the suitability of the measure in a Veteran sample, and Study 2 utilized a theoretically grounded stress process lens to examine the implications of religious coping for Veterans' self-concepts and, in turn, wellbeing.

Grounded in best practices for measurement evaluation and informed by the psychometric theory of scale development and validation, the first study used a confirmatory factor analysis, *t*-test, and validity testing to examine the psychometric properties of the two-factor Brief RCOPE Scale (Pargament et al., 2011) in a sample of Veterans which, to our knowledge, had not been done previously. The results indicated that two distinct subscales did emerge, but in a slightly adapted manner. For the Negative Religious Coping Scale, specifically, only six items, as opposed to the original seven items, were identified as appropriate to assess the construct; the indicator attributing the devil or evil to a given stressful context (i.e., "decided the devil/evil made this happen") was removed. The results from the Positive Religious Coping Scale indicated that all seven of the original items were appropriate for assessing the construct of positive religious coping. Implications for researchers, clinicians, and military chaplains were provided.

The second study, informed by Pearlin and colleague's (1981) Stress Process Model, employed an indirect effects path model to understand the associations between religious coping (positive and negative), self-concepts (self-forgiveness and self-efficacy), and wellbeing. First the association between positive religious coping, negative religious coping, and psychological wellbeing were examined. Then, the roles of self-forgiveness and self-efficacy were included in the model to determine if they explained the associations between religious coping and psychological wellbeing. The results indicated that negative religious coping, but not positive, was negatively associated with both self-concepts, and, in turn, these self-concepts were positively associated with psychological wellbeing. Positive religious coping was not associated with either self-concept or the outcome of psychological wellbeing, nor was it correlated with negative religious coping. Previous research suggests that positive religious coping is nuanced

and not uniformly a protective factor, as was the case in this study. Therefore, while our hypotheses for positive religious coping were not supported, the overall findings can be understood within the context of previous literature. Implications for researchers, clinicians, policy makers, and religious leaders were provided.

Overall, the two studies conveyed the importance of assessing the psychometric properties of scales before implementing them into theoretically constructed models and furthered both the psychometric assessment literature for the two-factor Brief RCOPE Scale and the literature on the use of positive and negative religious coping, self-forgiveness, self-efficacy, and psychological wellbeing with Veteran samples.

Acknowledgements

First and foremost, I would like to thank God for the abundant blessings and opportunities that have been afforded me including the inspiration of the Faith & Forgiveness Study. I would also like to thank my Co-PI, Kaylee Short; I know this study and dissertation would have been much less fun without you! A special 'thank you' to those who participated in the Faith & Forgiveness Study; we are grateful for not only your participation, but also your service to our country.

Further, a HUGE thank you is due to my major professor and advocate, Dr. Mallory Lucier-Greer for taking the time to invest in my life, education, and future; without all of her hard work, dedication, and encouragement, I would not be where I am today. My sincerest gratitude, Dr. Greer. Next, I would like to thank my committee for their valued feedback and contributions, Dr. Adrienne Duke-Marks, Dr. Ben Hinnant, and Dr. Kyle Kostlecky; I enjoyed our conversations around this research and hearing each of your expertise. I would also like to acknowledge the support I have received from my colleagues at Military REACH especially Dr. Nick Frye-Cox, Dr. Davina Quichocho, and Dr. Ben Burke.

A special thanks goes to my parents, Andy and Lucy Sherman, for their endless love, support, and dedication to my educational endeavors; without both of you, I would not be who I am today and there are not enough words to express my gratitude. Finally, I would like to thank all of my family and friends, including, but not limited to: Hannah Wilson, Chase Wilson, Kara Chung, Cheri West, Lauren Scott, Madeline Alger, Katie Klas, Tyler Gates, and Marisa Hartnett. Without the prayers, encouragement, and support from these individuals, and others, this journey would have been much more challenging. Thank you all for your patience, love, and dedication!

Table of Contents

Abstract 2

Acknowledgements 5

List of Tables 9

List of Figures 10

List of Appendices 11

Chapter 1: General Introduction 12

Why Religious Coping Matters for Veterans.....13

Psychometrically Assessing the Brief Religious Coping Scale (Brief RCOPE) 14

Religious Coping, Self-Concepts, and Psychological Wellbeing……...15

Theoretical Approaches to Examining the Brief RCOPE Scale and Psychological Wellbeing.....17

The Conception of the Faith & Forgiveness Study (F&F Study) 18

Chapter 2: Study 1 – An assessment of the psychometric properties of the Brief Religious Coping Scale (Brief RCOPE) with a Veteran sample 21

Theoretical Context.....24

Brief Religious Coping Scale (Brief RCOPE)—State of the Science 24

The Present Study 28

Examining a Confirmatory Factor Analysis Model.....29

Establishing Construct Validity 29

Hypotheses.....31

Method.....32

Procedure 32

Participants....33
Measures....33
Analytic Plan....37
Results....39
Preliminary Descriptive Statistics....39
Factor Structure of the Brief Religious Coping Scale (H1)....39
Establishing Convergent and Discriminant Validity (H2)....40
Discussion....44
Practical Guidance....46
Limitations and Future Directions....48
Conclusion....49
Chapter 3: Study 2 – Religious coping and psychological wellbeing among combat Veterans: Examining the indirect influence of self-forgiveness and self-efficacy....56
Theoretical Foundations....57
Religious Coping and Mental Health....58
The Role of Self Concepts: Self-forgiveness and Self-efficacy....60
The Current Study....63
Method....64
Procedures and Participants....64
Measures....65
Analytic Plan....67
Results....68
Positive and Negative Religious Coping in Relation to Psychological Wellbeing (H1)....66

The Effects of Self-forgiveness and Self-Efficacy (H2) 68
Discussion.....70
Practical Guidance.....72
Limitations and Future Directions.....74
Conclusion 75
Chapter 4: General Discussion……77
Study 1: Assessing the Brief Religious Coping Scale (Brief RCOPE) with a Veteran sample.....77
Study 2: Religious coping, self-concepts, and psychological wellbeing 79
Theoretical Approaches to Examining the Brief RCOPE Scale and Psychological Wellbeing 80
Conclusion.....80
References.....84
Appendices…….95

Chapter 1

General Introduction

Service members and Veterans face unique stressors (e.g., combat exposure, intense trainings, near death experiences) that have the potential to adversely affect their overall mental health and wellbeing (Na et al., 2023). These unique challenges that Service members and Veterans face are best managed by healthy coping mechanisms such as the use of religious coping (Hamlin-Glover, 2009; Park et al., 2017). Religion is a formal belief system, often inclusive of group practices, that can be used to foster a personal relationship or connection with a Higher power (Paloutzian & Park, 2005), and we know that Service members and Veterans identify as religious in high percentages, such that approximately 72% identify as Christian including non-denominational, Catholic, Protestant, and Mormon; 2% identify as atheist/agnostic; 2% identify as Eastern religions, Judaism or Islamic; and 25% identify as other/unclassified/unknown (Kamarck, 2019).

Given the large number of Service members and Veterans who identify as religious and the potential of religion to serve as a coping mechanism, it is important to investigate the ways in which they use their belief system to cope, either positively or negatively. A vast body of research in the past decade, approximately 10,000 studies, has focused on better understanding and delineating differences between positive religious coping and mental health outcomes and negative religious coping and mental health outcomes among samples of Service members and Veterans (Büssing, 2015; Cornish et al., 2017; Carroll et al., 2020; Currier et al., 2017). This area of research continues to grow and more nuanced topics are being examined in relation to religious coping research such as posttraumatic growth, moral injury, self-forgiveness, and self-

efficacy (Allen, 2020; Blau & Miller, 2021; Currier et al., 2016; Dolcos et al., 2021; Starnino et al., 2019).

To advance this area of study, the overall aims of this dissertation were twofold: (1) to focus on the measurement of religious coping among a military-affiliated sample, namely Veterans, and (2) to understand how religious coping manifests within Veterans in the context of stress. As such, two complementary studies were conducted using data from the same sample of Veterans. In the first study, an in-depth psychometric assessment of the two-factor Brief Religious Coping (Brief RCOPE) Scale, which is comprised of positive religious coping and negative religious coping subscales, was conducted, positioning the study to be among the first to evaluate this measure with a military-affiliated sample. Then, the findings from the psychometric assessment informed the use of the two-factor Brief RCOPE Scale in the second study such that an indirect effects model was fit to examine if self-forgiveness and self-efficacy indirectly explained the associations between the predictors of positive and negative religious coping and the outcome of psychological wellbeing. Overall, the aims of these complementary studies were to extend the existing literature on religious coping, the influence of self-concepts, and mental health outcomes with a focus on Veterans.

Why Religious Coping Matters for Veterans

Previous research suggests that Service members and Veterans identify as religious in high percentages (Kamarck, 2019), and evidence suggests that many of these individuals use religion to cope with everyday life stressors as well as traumatic experiences (Carroll et al., 2020; Witvliet et al., 2004). Further, much of the current research that is being conducted on religion as a coping mechanism points to the use of *assessing* and *implementing* forms of religious coping into interventions and therapies (Ames et al., 2021; Smith-MacDonald et al.,

2017; Trevino et al., 2012). For example, Trevino and colleagues (2012) point to religious leaders, clergy, and mental health professionals as individuals who could aid Veterans in navigating challenges related to military-affiliated events (e.g., combat experience, stress related to relocation or family life, health challenges) and religious beliefs. Ames and colleagues (2021) examined a spiritually integrated intervention for Veterans who identified as religious and were suffering from moral injury. Veterans met with Chaplains for twelve, fifty-minute sessions and the intervention was found to help improve symptoms of moral injury and PTSD (Ames et al., 2021). Smith-MacDonald and colleagues (2017) conducted a systematic review and, after examining the literature, suggested that addressing Veterans' religious/spiritual wellbeing should be routine and an integrated part of assessing Veterans' overall health. Further, they suggest isolating specific components of religion/spirituality that are most harmful or helpful in Veterans' wellbeing (Smith-MacDonald et al., 2017).

Therefore, examining which aspects of religious coping are most salient for Veterans is important not only for the mental health and wellbeing of Veterans, but also, would be beneficial when creating and implementing interventions for Veterans. Further, religious coping research has been explicitly named as a future direction in which more detailed examination and growth is needed (Ames et al., 2021; Smith-MacDonald et al., 2017; Trevino et al., 2012). The two studies that comprise this dissertation hoped to further our understanding of religious coping in the aforementioned areas.

Psychometrically Assessing the Brief Religious Coping Scale (Brief RCOPE)

To begin, the creation and validation of measurement tools is of the utmost importance when conducting high-quality research. Because, as we know, if constructs we seek to explore in research are not being accurately assessed, then the models in which these variables are being

used become questionable at best and obsolete at worst. It cannot be said with confidence that the variables we seek to understand are being assessed accurately within the models if regular psychometric assessments are not occurring with the scales. The Brief Religious Coping Scale (Pargament et al., 2011) has been psychometrically assessed and analyzed for its reliability and validity in multiple studies and across multiple samples (e.g., Allen, 2020; Carroll et al., 2020; Casaleiro et al., 2022; García et al., 2021; Janu et al., 2019; Mallia, 2020; Mesidor & Sly, 2023; Mohammadzadeha & Najafi, 2018; Starnino et al., 2019; Voytenko et al., 2023) with one notable exception: it has not been fully validated within samples of Service members and/or Veterans.

It is important to note that while the two-factor Brief RCOPE has *not* been psychometrically assessed with a military sample, that does not mean it has not been used with this population. Studies have used the two-factor Brief RCOPE Scale with Service member and Veteran samples, but, to our knowledge, none of these studies have conducted a full psychometric assessment of the two-factor Brief RCOPE Scale before utilizing the variables of religious coping, positive religious coping, or negative religious coping in their studies (e.g., Allen, 2020; Carroll et al., 2020; Mallia, 2020; Starnino et al., 2019).

Therefore, in understanding the unique stressors that military Service members and their families face (e.g., frequent relocations, deployments), along with how many Service members and Veterans identify as religious and spiritual, an important and needed next step in the psychometric advancement of the two-factor Brief RCOPE, and the focus of Study 1, was to systematically examine the properties of this measure including but not limited to evaluations of internal consistency, inter-item correlations, confirmatory factor analysis, and convergent and discriminant validity (Boateng et al., 2018).

Religious Coping, Self-Concepts, and Psychological Wellbeing

Previous research has examined associations between variables such as religious coping and mental health outcomes including posttraumatic stress disorder (PTSD), depression, anxiety, and suicide (Carroll et al., 2020; Witvliet et al., 2004), and while these investigations are important to understand as programming or clinical approaches may be necessary, many take a deficit-based perspective toward mental health. Therefore, we sought to extend the literature by utilizing a strengths-based and theory-informed approach to examine the relationships between positive religious coping and negative religious coping in relation to psychological *wellbeing*.

The Stress Process Model (Pearlin et al., 1981; Pearlin, 2010) posits that stress, which can be categorized as a specific stressful experience or chronic strains, is systematically linked to adverse health and wellbeing; it is also the case that healthy within-individual resources (i.e., self-concepts) and contextual factors are positioned to reduce the impact of stress. In addition to the initial investigation of the links between religious coping and psychological wellbeing, the Stress Process Model helped situate the study to include variables assessing self-concepts to help examine indirect effects; therefore, self-forgiveness (i.e., "the process in which we make good to ourselves on our failing" [Snow, 1993, p.75]) and self-efficacy (i.e., one's belief in their ability to perform behaviors to achieve or attain goals in life) will be included in the model to determine if they help to explain the associations between positive religious coping, negative religious coping, and psychological wellbeing. The construct of self-forgiveness was selected as previous research has found it to be a significant mediator for the relationship between religiosity and health (Lawler-Row, 2010), and forgiveness, in many different forms including self-forgiveness, has been closely associated with religion and differing religious belief systems (Davis et al., 2013); therefore, it was relevant to include this important aspect of religion in the model. Self-efficacy was also selected as a mediator due to previous research suggesting it significantly

mediated the relationship between religious coping and negative mental health outcomes (i.e., depression and anxiety symptoms; Dolcos et al., 2021); therefore, including self-efficacy to extend the literature in examining positive mental health outcomes such as psychological wellbeing was a needed next step.

Theoretical Approaches to Examining the Brief RCOPE Scale and Psychological Wellbeing

The current studies extend previous literature and are also rooted in well-known and frequently used theoretical perspectives. Much of the psychometric assessment literature has employed the psychometric theory of scale development and validation (Clark & Watson, 1995; i.e., this study has been cited over 8,900 times). This theory emphasizes the creation of valid measures that accurately reflect a given construct situated within a set of theoretically related constructs and the systematic evaluation of those measures. This theory proposes a series of steps to create new psychometrically sound measures and/or evaluate existing measures. With regard to the current dissertation, the two-factor Brief RCOPE Scale was originally constructed with a strong theoretical foundation and has since been assessed across different samples and languages (e.g., Casaleiro et al., 2022; García et al., 2021; Mesidor & Sly, 2023; Mohammadzadeha & Najafi, 2018; Voytenko et al., 2023). This theory (Clark & Watson, 1995; Clark & Watson, 2019) and associated best practices will be used to guide Study 1, which was a psychometric assessment of the two-factor Brief RCOPE Scale with a Veteran sample.

Further, the explorations of Study 2 were informed by the Stress Process Model (Pearlin et al., 1981; Pearlin, 2010) which posits that stress, which can be categorized as a specific stressful experience or chronic strains, is systematically linked to adverse health and wellbeing. This model suggests that when individuals continue to struggle with a given stressor without resolution, there is anticipated damage or harm to one's self-concepts, such as self-efficacy and

self-forgiveness. In other words, stress can be helpful for growth, but continued struggle may wear down one's belief in themselves and their ability to accomplish tasks. When self-concepts are worn, there are adverse implications for personal and psychological wellbeing. Therefore, the constructs of interest for the current study map well onto Pearlin and colleague's (1981) Stress Process Model. Military Service members and Veterans have experienced unique forms of stress such as deployments and frequent relocations. In addition to these salient life stressors, religion can act as both a form of coping and comfort (e.g., 'my Higher Power loves and provides for me') as well as a form of stress (e.g., 'I will never be good enough to earn or deserve the love of my Higher Power'). Further, self-concepts such as self-forgiveness and self-efficacy have been shown to help mediate stress (Lawler-Row, 2010; Yao et al., 2017; Brown et al., 2012; Wang et al., 2017). And finally, how these two forms of religious coping (i.e., positive and negative) are related to the manifestation of psychological wellbeing, and further if these concepts of self (i.e., self-forgiveness and self-efficacy) indirectly explain the associations between two forms of religious coping and psychological wellbeing will be examined.

The Conception of the Faith & Forgiveness Study (F&F Study)

This dissertation utilized primary data collected between May and November of 2023 to better understand if the tools and assessments that are being used to measure religious coping are accurate for Veteran samples (Study 1) and how religious coping was related to psychological wellbeing, specifically if constructs related to self-concept, such as self-forgiveness and self-efficacy, indirectly explain the relationship between religious coping and psychological wellbeing (Study 2).

Data collection efforts began with a grant application being submitted to the Department of Special Education, Rehabilitation, and Counseling (SERC) at Auburn University to receive

funding to collect data on these important constructs. I served as the Co-Principal Investigator alongside my colleague Kaylee Short, a doctoral candidate in SERC who has overlapping research interest in religion/spirituality, forgiveness, and military family research. After applying for and being awarded the SERC Seed Grant, we were able to carry out this data collection effort in a study called the Faith & Forgiveness Study (F&F Study). The initial funding from the SERC Seed Grant and additional support provided, in part, by Dr. Mallory Lucier-Greer allowed us to compensate our participants for their time. Participant compensation is an important standard in conducting ethical research as participants are providing their time and information, and researchers are compensating participants for their time and data; this practice is becoming standard practice and is widely accepted (Largent & Lynch, 2017).

After being awarded the funding and generating a series of research questions that we sought to address, we began reviewing and selecting the appropriate measures needed to address our research questions. In addition to carefully selecting measures, we began by determining the wording of the Qualtrics survey, the order that these scales would appear on the Qualtrics survey, and the testing of the survey by willing colleagues. Next, an Institutional Review Board (IRB) was completed and submitted to Auburn University's IRB for Human Subjects Research. The final survey consisted of 19 scales that assessed constructs such as moral injury, forgiveness, religiosity, morality, and several mental health constructs, including depressive symptoms and psychological wellbeing, as well as demographic information. Upon IRB approval, we conducted a pilot study allowing us to soft-launch the survey using an online data collection tool called Prolific (https://www.prolific.co/) and identify potential errors emerged that needed to be addressed with both the survey format and settings on the Prolific profile. After needed corrections were made, we conducted another small pilot study to ensure the errors and profile

settings were correctly addressed. After making these necessary adjustments, the Faith & Forgiveness Study was fully launched in May of 2023, and as of today, we have clean, usable data from 177 U.S. Veterans.

Chapter 2

Study 1: An assessment of the psychometric properties of the Brief Religious Coping Scale (Brief RCOPE) with a Veteran sample

Religion is a formal belief system, often inclusive of group practices, that can be used to foster a personal relationship or connection with a Higher Power (Paloutzian & Park, 2005). Engagement in religion is positioned to enhance intimacy with a Higher Power but it may also provide comfort, stimulate growth, facilitate closeness with others, and/or offer meaning and purpose to life (Koening, 1998). In other words, religion is a systematic set of personal beliefs that have meaningful implications for everyday life (Paloutzian & Park, 2005).

In the context of stress, there is established evidence that religion and the different ways in which people use religion to cope, specifically, positive religious coping and negative religious coping, matter for the wellbeing of individuals who identify with a religious belief system (Carroll et al., 2020; Currier et al., 2017; Park et al., 2018). Furthermore, these two different ways of engaging one's religion to cope appear to be differently related to health and wellbeing outcomes (Carroll et al., 2020; Park et al., 2018). *Positive religious coping* is reflective of having a trusting and confident connection with a Higher Power which can be seen as individuals seek religious support and assume the best of the Higher Power, even in the context of difficult situations (Park et al., 2018). Notably, positive religious coping can act as a protective factor against negative mental health symptoms, such as suicide, depression, anxiety, and thwarted belongingness, among higher-risk populations, such as Service members (Carroll et al., 2020). Conversely, *negative religious coping* is reflective of a less secure relationship with a Higher Power whereby individuals may make cruel religious appraisals or ascribe terrible situations happening in life to the Higher Power (Park et al., 2018). Negative religious coping

practices (e.g., wondering why my Higher Power has abandoned me in a time of need) can exacerbate mental health symptoms, such as posttraumatic stress disorder (PTSD), depression, anxiety, and suicidal ideation (Carroll et al., 2020; Currier et al., 2017).

The impact and effects of religious coping are nuanced and not as straightforward to suggest that positive religious coping produces better personal outcomes and negative religious coping produces adverse outcomes, particularly among groups of people who are managing long-term stressors and/or traumatic events, including Service members and Veterans. For example, Cornish and colleagues (2017) found that greater use of positive religious coping among a sample of U.S. Soldiers deployed in Iraq was related to greater distress. This counterintuitive finding may reflect the challenging context experienced by the Soldiers as they had already been deployed ~10 months at the time of the survey and may have been struggling to reconcile their faith with ongoing stress. Additionally, Witvliet and colleagues (2004) found that Veterans who engaged in positive religious coping also reported more PTSD symptoms. These associations may be valid and need to be explored and replicated further. It is also the case that some questions about the measurement of religious coping have also raised (are they appropriate and valid for military-affiliated samples or other groups who have endured long-term stress? Do the measures of positive religious coping convey undertones of religious guilt or religious struggle?). Given the mixed findings and importance of religion as a source of strength and form of coping for many military-affiliated individuals (Allen, 2020; Mallia 2020; Cornish et al., 2017; Witvliet et al., 2004), measurement tools assessing religious coping for this population that are reliable and precise, sensitive to change, allow for variability, and are predictive of critical outcomes are essential.

This study examines the psychometric properties of the fourteen-item, two-factor, Brief Religious Coping Scale (Brief RCOPE; Pargament et al., 2011) with a sample of Veterans. While approximately a dozen psychometric analyses have been conducted to examine the properties of the original Religious Coping Scale (Pargament et al., 2000) and/or the two-factor Brief RCOPE Scale (Pargament et al., 2011) with diverse samples and populations, additional psychometric analyses are needed to advance our theoretical and operational understanding of religious coping within a *military-affiliated* sample. To our knowledge, the two-factor Brief RCOPE scale has not been assessed with this population and military-affiliated individuals, arguably, may be more likely to utilize religion as a form of coping due to the many and variety of stressors they experience, and the high rates in which they endorse engagement in religion (Kamarck, 2019). Therefore, an important next step in the psychometric advancement of the two-factor Brief RCOPE is to systematically examine the properties of this measure with a military affiliated sample, specifically Veterans, guided by the psychometric theory of scale development and validation (Clark & Watson, 1995) as well as research best practices (e.g., evaluations of internal consistency, inter-item correlations, confirmatory factor analyses, and convergent and discriminant validity; Heggestad et al., 2019). This study is also positioned to conduct a series of advanced psychometric evaluations which will provide greater evidence for the effectiveness of these fourteen items in assessing positive and negative religious coping.

Establishing the psychometric properties of the two-factor Brief RCOPE scale within a sample of Veterans will allow researchers to utilize this scale with more certainty that it is assessing what it claims to assess. In turn, researchers and those who provide direct services (e.g., chaplains, clinicians) will have an additional tool to understand the coping practices of Veterans. These coping practices have implications for wellbeing given that religious coping has

been shown exacerbate and/or buffer a variety of mental health outcomes (e.g., PTSD, anxiety, depressive symptoms; Carroll et al., 2020; Currier et al., 2017; Cornish et al., 2017).

Theoretical Context

The psychometric theory of scale development and validation (Clark & Watson, 1995; Clark & Watson, 2019) emphasizes the creation of valid measures that accurately reflect a given construct situated within a set of theoretically related constructs and the systematic evaluation of those measures. This study focuses on systematically evaluating the two-factor Brief RCOPE measure guided by the scale validation framework. Validation studies are needed to ensure that measurement tools are *functional* (e.g., overlaps with similar constructs, but emerges as a unique construct), *internally consistent* (i.e., agreement between items), and *parsimonious* (e.g., simple but useful) (Heggestad et al., 2019).

Brief Religious Coping Scale (Brief RCOPE) – State of the Science

In their seminal piece, Pargament and colleagues (1998) developed and presented the field with a measure of religious coping and, arguably, jumpstarted the systematic examination of religious coping in scientific research. The initial goal of the measure was to examine how individuals engage their religious beliefs and practices to cope with difficult situations and identify patterns of positive and negative religious coping. The original RCOPE measure, short for Religious Coping, consisted of 105 items that included several subscales (e.g., Finding Meaning, Gaining Control, Gain Comfort and Closeness to God, Gain Intimacy with Others and Closeness to God, and Achieving a Life Transformation), each that comprised five items. Early work in the development and validation of the RCOPE Scale was conducted with a sample of 540 college students who experienced a variety of serious negative life events, including the death of a family member (22% reported this), death of a friend (14%), romantic relationship

problems (12%), serious illness of a family member (9%), serious illness of self (8%), and separation, divorce, or other family conflict (7%). The sample was mainly Catholic (45%) and Protestant Christian (41%).

Given the comprehensive nature of the original RCOPE, it could not be readily used in clinical or counseling situations or research due to its length, thus, efforts were implemented to create an abbreviated version of the 105-item scale. With a sample of 296 church members who lived near the 1995 Oklahoma City bombing site, psychometric assessments were conducted to examine a brief, 21-item scale (Pargament et al., 1998). A two-factor solution of positive and negative religious coping emerged; these two-factors accounted for 33% of the variance. Encouraged by these findings, another assessment with a sample of college students who were facing major stressors was conducted (Pargament et al., 2011). Evidence emerged supporting the feasibility and validity of a 14-item version of the scale. This final 14-item scale accounted for 38% of the variance (Pargament et al., 2011). Together, information from these studies yielded the two-factor Brief RCOPE consisting of fourteen items: seven items representing positive religious coping and seven items representing negative religious coping. In this section, we explore how religious coping has been measured in empirical studies when utilizing the two-factor Brief RCOPE Scale and discuss key findings.

Pargament and colleagues (2011) conducted a systematic review of the two-factor Brief RCOPE that included 30 studies published between 2005 and 2010 showcasing the measure's development and psychometric properties. Across the 30 studies in the systematic review, different samples were utilized and, in some cases, different utilizations of the measure (i.e., positive religious coping and/or negative religious coping or an overall assessment of religious coping by using all 14-items). Samples included, but were not limited to, patients undergoing

cardiac surgery, African American women with a history of partner violence, cancer patients, caregivers, older adults in residential care, U.K. adults, outpatients with alcohol use disorders, Catholic middle school students, and individuals following 9/11, but there were *no* military-affiliated samples. Collective findings provided support for the construct validity, predictive validity, and incremental validity of the Brief RCOPE subscales, positive and negative religious coping. Of note, the negative religious coping subscale emerged as a robust predictor of poor mental and physical health-related outcomes (e.g., anxiety, depression, PTSD symptoms, physical pain; Pargament et al., 2011).

Since 2011, many studies that have utilized and psychometrically evaluated the two-factor Brief RCOPE scale with diverse samples, including individuals outside of the U.S. such as Iran (Mohammadzadeha & Najafi, 2018), Chilé (García et al., 2021), Portugal (Casaleiro et al., 2022), Haiti (Mesidor & Sly, 2023), Czech Republic (Janu et al., 2019), and non-Western countries (Voytenko et al., 2023).

While no psychometric assessments have been published that evaluate the two-factor Brief RCOPE scale with military-affiliated samples, the scale has been utilized in research with military-affiliated samples (e.g., active-duty Service members, Veterans, military families) to explore topics such as the role of religious coping in mental health and wellbeing defined broadly to include depressive symptoms, PTSD symptoms, thwarted belongingness, suicide, internal religiousness, and spiritual injury (Allen, 2020; Carroll et al., 2020; Mallia, 2020; Starnino et al., 2019). Theoretically and empirically, religious coping appears to have nuanced implications for military-affiliated individuals with regard to their mental health and wellbeing, and those nuances are explored below.

In sample of 67 U.S. Veterans, Allen (2020) examined if depression mediated the relationship between spiritual functioning and PTSD. Spiritual functioning was comprised of the 7-items of the negative Brief RCOPE subscale. It was not explicitly stated whether any of the psychometric properties of the scale were evaluated beyond an assessment of scale reliability (α = .88). Findings suggested that higher levels of negative religious coping (termed, spiritual functioning in the study) were associated with more depressive symptoms, and, in turn, more depressive symptoms were associated with greater severity of PTSD symptoms.

Further, Carroll and colleagues (2020) examined the influence of positive and negative religious coping on pathways between PTSD and suicidal desire (i.e., thwarted belongingness and perceived burdensomeness) in a sample of 201 Service members and Veterans. All 14-items from the two-factor Brief RCOPE were employed, and again, it was not explicitly stated whether the psychometric properties of the scale were examined beyond an assessment of scale reliability (positive Brief RCOPE α = .97; negative Brief RCOPE α = .89). Overall, findings suggested that positive religious coping may be a protective factor against thwarted belongingness, whereas negative religious coping exacerbated the impact of PTSD on perceived burdensomeness.

Additionally, Mallia (2020) examined Service member's religiosity, as measured by the two-factor Brief RCOPE, before and after combat among 24 Service members. No details were provided about the reliability or validity of the scale in that sample. Findings suggest that Service members who were more internally religious were also more likely to employ positive religious coping post-combat as compared to pre-combat.

Given the empirical research identifying the implications of religious coping strategies for mental health and wellbeing outcomes generally and specific to military-affiliated samples, some programs have sought to target religiosity and spirituality as leverage points for Service

members and Veterans. One such intervention was implemented and assessed by Starnino and colleagues (2019), the Spiritually-Based PTSD Intervention for Military Veterans. The purpose of the intervention was to treat trauma-related spiritual wounds among military Veterans. This eight-week psychoeducational group program was designed with a spiritual, existential, and cognitive focus; each session was 90 minutes and was led by co-therapists, a chaplain and mental health clinician, both trained in treating trauma. The two-factor Brief RCOPE was employed to assess Veterans' positive and negative religious coping (*N*=24 Veterans). No details of the psychometric properties of the scale were provided. Overall, findings from the intervention were promising such that significant reductions in PTSD, spiritual injury, and negative religious coping were found from pre- to post-test.

Overall, some evidence has emerged of the dimensionality and the construct validity of the items used to assess religious coping with the two-factor Brief RCOPE scale, yet, a full psychometric assessment was still warranted with a military-affiliated sample, especially for the subscales of positive and negative religious coping. This study fills that gap.

The Present Study

Grounded in best practices for measurement evaluation and informed by the psychometric theory of scale development and validation (Clark & Watson, 1995; Clark & Watson, 2019), this assessment systematically evaluated the 14-item, two-factor Brief Religious Coping Scale (Brief RCOPE). The first step in our psychometric assessment was to evaluate the item-level descriptive statistics, the inter-item correlations, and the internal consistency reliability (i.e., McDonald's Omega [ω], Cronbach's alpha, and inter-item correlations) of the subscales. These initial analyses were conducted to examine the suitability of the items for

further analyses, specifically a confirmatory factor analysis and assessments that speak to construct validity.

Examining a Confirmatory Factor Analysis Model

A confirmatory factor analysis (CFA) verifies the factor structure of a set of observed variables and assesses if the items hang together well as a one-factor, or multifactor, solution (Sureshchandar, 2021). A CFA was conducted, as opposed to an exploratory factor analysis (EFA), since previous research (García et al., 2021; Janu et al., 2019; Mesidor & Sly, 2023) has provided evidence for a two-factor Brief RCOPE Scale where positive and negative religious coping emerge as distinct factors. In a few instances, previous research also found that individual items on the two-factor Brief RCOPE Scale did not significantly load onto either factor (Casaleiro et al., 2022). Since we are examining the two-factor Brief RCOPE with a new sample population of Veterans, an examination of all the items and how/if they load onto the individual factors of positive and negative religious coping was warranted. Therefore, we evaluated the structural validity of the two-factor Brief RCOPE Scale using a CFA and anticipated a two-factor model reflecting both positive and negative religious coping.

When the subscales and items on each subscale are established, a series of descriptive statistics were conducted to thoroughly explore the scales. Then, to understand group differences in the scale, specifically men and women Veterans, *t*-tests were used to compare the means of the two groups to determine if differences emerge on ratings of positive religious coping and negative religious coping (Siedlecki & Bena, 2021). Significant differences between the groups will be indicated by a *p*-value that is less than 0.05 in the context of the *t*-score and degrees of freedom (Siedlecki & Bena, 2021).

Establishing Construct Validity

Analyses were then conducted to establish construct validity with a focus on both discriminant and convergent validity (Boateng et al., 2018). More specifically, this means comparing dissimilar and similar constructs with the theorized constructs (i.e., positive religious coping and negative religious coping). In order to help establish validity, evidence needed to be provided for each subscale of religious coping to be weakly related, or unrelated, to dissimilar constructs (i.e., the assessment of discriminant validity) in addition for each subscale of religious coping to be related to similar constructs (i.e., the assessment of convergent validity) (Furr & Bacharach, 2013; Gefen & Straub, 2005; Rönkkö & Cho, 2022).

Discriminant validity. In this study, for positive religious coping we used measures of mental health, namely *depressive symptoms and anxiety symptoms* as points of comparison for discriminant validity. For negative religious coping we used measures of morality, namely *purity*, and self-efficacy, namely *effort,* as points of comparison for discriminant validity. Purity, which is encompassed in measures of morality, is defined by Gray and colleagues (2023) as a unique and distinct construct that is featured in moral rhetoric and focuses on perceptions of harm and wrongdoing by virtue of religious or societal standards. Additionally, effort, a subscale of self-efficacy, can be understood as willingness or unwillingness to expend energy or time to complete the behavior or task (Sherer et al., 1982). Therefore, if positive and negative religious coping are weakly correlated with these theoretically dissimilar constructs, a case can be made for establishing discriminant validity (i.e., subscales of religious coping being different from these constructs).

Convergent validity. As mentioned, convergent validity refers to how closely the scale of one construct is related, or similar, to that of another construct (i.e., the two constructs are theoretically positioned to have some convergence or overlap). Constructs are determined to be

similar in nature when the correlation of these constructs are different than zero (Wang & Wang, 2022). In this study, theoretically similar or adjacent constructs, such as *situational forgiveness* and *purity* were expected to be correlated with positive religious coping whereas constructs such as *depressive symptoms and anxiety symptoms* were expected to be correlated with negative religious coping (Furr & Bacharach, 2013). Thompson and colleagues (2005), the creators of the Heartland Forgiveness Scale, define situational forgiveness as, "a situation that one views as being beyond anyone's control (e.g., an illness, fate, or natural disaster)" (p. 318). As a substantive amount of research suggests, religion and forgiveness are related (Davis et al., 2023; Haikola, 2023), and many religions use, implement, and preach forgiveness as an important aspect and virtue of religious practices. When evidence of both discriminant and convergent validity emerge, a scale is thought to have construct validity.

Hypotheses

As described earlier, the specific hypotheses for this study were as follows:

Hypothesis 1 (H1): The Brief RCOPE will be a multi-dimensional (two-factor) structure such that the two components of positive religious coping and negative religious coping will emerge.

Hypothesis 2 (H2): The two-factor Brief RCOPE will demonstrate good convergent and discriminate validity with a moderate effect size, as evidenced by $r_{\text{contrast-CV}}$ and $r_{\text{alerting-CV}} > .70$ (Westen & Rosenthal, 2003). With regard to discriminant validity, we hypothesized that the positive religious coping latent factor will have weaker associations with theoretically dissimilar constructs such as depressive symptoms and anxiety symptoms, and the negative religious coping latent factor will also have weaker associations with theoretically dissimilar constructs such as purity and effort. With regard to convergent validity, we hypothesized that the positive

religious coping latent factor would be more strongly associated with theoretically similar constructs, namely situational forgiveness and purity whereas the negative religious coping latent factor would be more strongly associated with theoretically similar constructs such as depressive symptoms and anxiety symptoms.

Method

Procedure

Survey Development

Data were from The Faith & Forgiveness Study (F&F Study), a data collection effort focused on the experiences of Veterans with previous deployment experience. Specific emphasis was placed on military-related experiences (e.g., moral injury), religious/spirituality constructs (e.g., forgiveness, religiosity, beliefs into action, morality), and mental health and wellbeing (e.g., relationship satisfaction, posttraumatic stress disorder, quality of life, posttraumatic growth, psychological wellbeing) constructs. The survey consisted of 19 scales covering those constructs plus demographic items. Some items and scales were omitted based on the implementation of skip logics (e.g., if a participant did not have children or was not in relationship then they would not see any follow-up questions on the topic). Participants were compensated $5.50 as a "thank you" for their time and attention while participating in the survey. The recruitment, consent, and data protection procedures were approved by Auburn University's Institutional Review Board, Human Subjects Committee (IRB #23-157).

Survey Distribution

The survey was accessible to participants through the online data collection platform called Prolific that was created for, and founded by, academic researchers. Prolific requires participants to be registered with the site and only offers research engagement opportunities to

individuals when they meet the criteria set by the researchers of a given study; this data collection platform has been shown to be a useful and systematic tool with high levels of transparency for both researchers and participants with the capacity to collect reliable data (Palan & Schitter, 2018). Data collection began in May of 2023 and concluded in November of 2023. The inclusion criteria for the F&F Study were that participants had to be 18 years old or older, had to be living in the U.S., had to be a Veteran who had served at least one deployment, and had to identify as religious/spiritual.

Participants

A total of 177 participants met the inclusion criteria and completed the survey. Veterans with incomplete or no data on the Brief RCOPE scale were removed from the analytic sample (*n* = 7). Additionally, at least 1 response per scale was required for the depressive symptoms, anxiety symptoms, purity, effort, and situational forgiveness variables, but no Veterans were removed due to missingness on these items and missing data procedures were used to address these variables; see Table 1 for more information on missingness. The average length of time for survey completion was 24.25 minutes.

The final analytic sample was 170 Veterans who had experienced at least one deployment. Among the participants, 132 (77.6%) of the Veterans are men (*n* = 38 women). The average age is 45.5 years old (ranging from 24-75 years old). The majority had a bachelor's degree or a graduate/professional degree (*n* = 91; 53.5%) or attended some college (*n* = 41; 24.1%). The majority are White (*n* = 115; 67.6%), and the majority are married or in a committed relationship (*n* = 126; 74.1%). Regarding religious denomination affiliation, 86% of the sample was Christian. As for military-affiliated characteristics, 64 of the Veterans served in the Army (37.6%), 41 served in the Air Force (24.1%), 35 served in the Navy (20.6%), 16 served

in the Marine Corps (9.4%), 12 served in the National Guard/Reserves (branches unspecified; 7.1%), and 2 served in the Coast Guard (1.2%). The length of time Veterans served in the military was, on average, 9.7 years (ranging from 1-38 years).

Measures

Brief Religious Coping Scale (Brief RCOPE). Fourteen items were used to assess Veterans' perceptions of their positive (i.e., seven items) and negative (i.e., seven items) religious coping from the Brief RCOPE (Pargament et al., 2011). Participants responded to the prompt of, "Think about how you typically respond to stressful events that you experience. Please indicate the degree to which each of the following strategies applied to you." Some items for the positive religious coping scale included: "Looked for a stronger connection with my Higher Power," "Focused on religion to stop worrying about my problems." Some items for the negative religious coping scale included: "Wondered why my Higher Power had abandoned me," and "Wondered whether my church had abandoned me" (see full scale of items in Appendix A). Of note, the scale was adapted slightly such that the word "God" in the original scale was changed to "Higher Power" in the current study for inclusivity purposes of different religions. These items were assessed on a scale of 1 (*not at all*) to 4 (*a great deal*). The psychometric properties of the fourteen items individually and as subscales (i.e., positive and negative religious coping) were assessed throughout the results section.

Depressive Symptoms *(PHQ-9).* Nine items were used to assess depressive symptoms (Kroenke et al., 2001). Veterans were asked, "Over the last 2 weeks, how often have you been bothered by any of the following problems?" on a scale of 1 (*not at all*) to 4 (*nearly every day*). Some items included: "Little interest or pleasure in doing things," "Feeling tired or having little energy," and "Trouble concentrating on things such as reading the newspaper or watching

television." Items were mean scored such that higher scores represent more depressive symptoms (*M*=1.77; *SD*=.70) when examining correlations among variables; a latent variable was created with the individual items to evaluate H2. In the present sample, the scale demonstrated good internal consistency, Cronbach's α = .92 and McDonald's ω = .92. A CFA suggested good model fit (CFI = .97, TLI = .96, and RMSEA = .07) with moderate to large loadings of each item on the latent variable (ranging from .63 to .91).

Anxiety Symptoms *(GAD-7).* Seven items were used to assess Veterans' anxiety symptoms (Spitzer et al., 2006). Veterans were asked, "Over the last two weeks, how often have you been bothered by the following problems?" and rated statements on a scale of 1 (*not at all)* to 5 (*nearly every day)*. Some items included, "feeling nervous, anxious, or on edge" "trouble relaxing" and "becoming easily annoyed or irritable." These items were mean scored such that higher scores represent more anxiety symptoms (*M*=1.86; *SD*=.73); a latent variable was created with the individual items to evaluate H2. In the present sample, the scale demonstrated good internal consistency, Cronbach's α = .92 and McDonald's ω = .92. A CFA suggested excellent model fit (CFI = .99, TLI = .99, and RMSEA = .05) with moderate to large loadings of each item on the latent variable (ranging from .70 to .93).

Purity. Three items were used to assess a subscale of Veterans' morality, namely purity (Graham et al., 2008). Veterans were asked, "How much do you agree or disagree with these statements?" on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Items included were "People should not do things that are disgusting, even if no one is harmed," "I would call some acts wrong on the grounds that they are unnatural," and "Chastity is an important and valuable virtue." These three items were mean scored such that higher scores represent more purity (*M*=4.66; *SD*=1.38); a latent variable was created with the individual items to evaluate H2. In the

present sample, the scale demonstrated adequate internal consistency, Cronbach's α = .67 and McDonald's ω = .71. A CFA suggested adequate model fit (CFI = .90, TLI = .89, and RMSEA = .08) with moderate to large loadings of each item on the latent variable (ranging from .51 to .91).

Effort. Five items were used to assess a subscale of Veterans' self-efficacy, namely effort (Sherer et al., 1982). Veterans were asked, "How true do you feel these statements are about you personally?" and these items were assessed on a scale of 1 (*not like me)* to 7 (*a lot like me)*. Some items included, "When I make plans, I am certain I can make them work," "If I can't do a job the first time, I keep trying until I can," and "Failure just makes me try harder." These items were mean scored such that higher scores represent more effort (*M*=2.43; *SD*=.48); a latent variable was created with the individual items to evaluate H2. In the present sample, the scale demonstrated good internal consistency, Cronbach's α = .82 and McDonald's ω = .82. A CFA suggested excellent model fit (CFI = .94, TLI = .99, and RMSEA = .02) with moderate to large loadings of each item on the latent variable (ranging from .61 to .99).

Heartland Forgiveness Scale (HFS). Six items were used to assess forgiveness of situations (Thompson et al., 2005). Veterans responded to the prompt of, "Think about how you typically respond to such negative events. Next to each of the following items select the number that best describes how you typically respond to the type of negative situation described." Some items included: "With time I can be understanding of bad circumstances in my life," "I eventually make peace with bad situations in my life," and "Eventually I let go of negative thoughts about bad circumstances that are beyond anyone's control." These items were assessed on a scale of 1 (*almost always false of me*) to 7 (*almost always true of me*). These six items were mean scored such that higher scores represent more forgiveness (M=4.83; SD=1.17); a latent

variable was created with the individual items to evaluate H2. In the present sample, the scale demonstrated good internal consistency, Cronbach's α = .89 and McDonald's ω = .87. A CFA suggested excellent model fit (CFI = .99, TLI = .99, and RMSEA = .02) with moderate to large loadings of each item on the latent variable (ranging from .58 to .86).

Analytic Plan

Preliminary analyses were conducted in SPSS Version 26 and included a review of descriptive statistics and missingness across study variables. The primary analyses were conducted in Mplus Version 8.6. To examine H1, a hypothesis-driven CFA was conducted, such that the seven items describing positive religious coping were expected to load well on one factor and the seven items describing negative religious coping were posited to load well onto a separate factor (Allen, 2020; Carroll et al., 2020; Mallia, 2020; Starnino et al., 2019). A CFA is positioned to verify the factor structure of a set of observed variables and assess if the items hang together well, in this case, as a 2-factor solution. Model fit indices included $\chi 2$, *df*, *p,* TLI, CFI, RMSEA, C.I., and SRMR. Indicators of good model fit include: a significant $\chi 2$, TLI and CFI both close to .95 or above, RMSEA close to 0.06 or below, a 90% confidence interval [CI] and significant *p*-value (i.e., $p < .05$), and SRMR less than .08 (Hu & Bentler, 1999). Item-level factor loadings were, then, examined to determine if they loaded significantly onto a given factor in the expected direction (i.e., positively). Best practices recommend interpretation of factors loadings to be .32-.44 as poor, .45-.54 as fair, .55-.62 as good, .63-.70 as very good, and .71 or higher as excellent (Comrey & Lee, 1992).

After the positive religious coping and negative religious coping subscales were confirmed by the CFA, item-level descriptive statistics and inter-item correlations were examined. Next, internal consistency reliability information including McDonald's Omega (ω),

Cronbach's Alpha, and item-total correlations were examined for the two-factor Brief RCOPE, specifically the positive religious coping subscale and the negative religious coping subscale. McDonald's Omega (ω) is an assessment of reliability that is robust to violations of unidimensionality and tau-equivalence (Hayes & Coutts, 2020) whereas Cronbach's Alpha is not robust to these violations. This means that Cronbach's Alpha can be inflated by the number of items on a scale whereas McDonald's Omega is not. Accordingly, McDonald's Omega was examined alongside the traditional Cronbach's Alpha (α) assessment of reliability; the interpretation of these analyses is similar, such that values closer to .90 signify higher reliability (Hayes & Coutts, 2020). Next, *t*-tests were conducted to compare mean scores of the two subscales for men and women Veterans.

Finally, to examine H2, we compared the differential associations of the two-factor Brief RCOPE with external correlates. External correlates were included in the model as latent variables that were allowed to covary with the positive religious coping and negative religious coping factors, respectively. The Wald test constrains pairs of covariances to be equal and tests a decrease in model fit; therefore, when the constraint happens and model fit worsens, then there is evidence for different associations between the two variables being compared (see Silverstein et al., 2018; Witte, Domino, & Weathers, 2015). Wald tests must be conducted one at a time between the variable of interest (i.e., first positive religious coping and then negative religious coping) and each of the external latent correlates, namely depressive symptoms, anxiety symptoms, purity, effort, and situational forgiveness. Given the large number of comparisons, the Benjamini and Hochberg (1995) method was used to maintain the false discovery rate or type I error at .05. Cohen's *q* effect size of the difference in magnitude between each pair of

correlations was calculated and interpreted according to Cohen (1988): $q < .10$ none; .10-.30 small, .30-.50 medium, > .5 large effect.

Results

Preliminary Descriptive Statistics

Descriptive statistics and inter-item correlations are presented in Table 2 for the Positive Religious Coping Scale and the Negative Religious Coping Scale. Descriptive statistics for the composite variables of the Positive Religious Coping Scale, Negative Religious Coping Scale, and external correlates can be found in Table 1. Overall, there was little to no missing data (i.e., one piece of data missing on the Purity Scale only), good distribution of scores, and skewness and kurtosis were not of concern.

Factor Structure of the Brief Religious Coping Scale (H1)

To address Hypothesis 1, a confirmatory factor analysis (CFA) was conducted. The CFA results generally replicated the hypothesized 2-factor structure, such that the seven positive religious coping items loaded onto one factor, and six of the seven negative religious coping items loaded onto a separate factor. The item that was removed from the negative religious coping scale, "decided the devil/evil made this happen," did not have a comparably strong factor loading (i.e., .398). Additionally, model fit improved slightly on some indicators when that item was removed (model fit before the item was removed: $\chi^2 = 1356.04$, $df = 91$, $p < .001$; TLI = .94; CFI = .95; RMSEA = .07, $p = .04$; 90% C.I. [.05-.09]; SRMR = .11). For this two factor model, with seven items on the Positive Religious Coping Scale and six items on the Negative Religious Coping Scale, the fit was adequate according to some fit statistics (model fit after the item was removed: $\chi^2 = 1293.32$, $df = 78$, $p < .001$; TLI = .95; CFI = .96; RMSEA = .07, $p = .11$; 90% C.I. [.044-.085]; SRMR = .10). As expected, all remaining indicators demonstrated significant,

positive factor loadings of salient magnitude, with standardized coefficients ranging from .59 to .92 (Table 3). There were no modification indices, errors, or other indications of improper or inadequate factor solutions.

Descriptive statistics and inter-item correlations are presented in Table 2 for the seven-item Positive Religious Coping Scale and the six-item Negative Religious Coping Scale. The internal consistency of these two subscales were estimated using inter-item correlations, Cronbach's Alpha, and McDonald's Omega. Inter-item correlations ranged from .41-.83. Many of the interitem correlations fall near the upper end of the recommended range (Clark & Watson, 1995; i.e., .40-.50). In some situations, a high intercorrelation range may indicate redundancy among scale items, but for "narrower constructs," such as positive and negative religious coping, as opposed to coping or religious coping more broadly, higher interitem correlations are expected (Clark & Watson, 1995, p. 15). Cronbach's Alpha was high for the Positive Religious Coping Scale ($\alpha = .93$) and Negative Religious Coping Scale ($\alpha = .91$) as was McDonald's Omega ($\omega = .93$ and $\omega = .91$, respectively).

A *t*-test was performed to evaluate whether there were mean differences between men and women Veterans on their reports of positive and negative religious coping. No significant differences emerged for the Positive Religious Coping Scale ($t = -.92$, $p = .66$) or Negative Religious Coping Scale ($t = -.46$, $p = .91$). In other words, on average, men ($M = 2.75$; $SD = .85$) and women ($M = 2.90$; $SD = .87$) reported similar levels of positive religious coping. They also generally reported similar levels of negative religious coping (men: $M = 1.66$; $SD = .80$; women: $M = 1.72$; $SD = .80$).

Establishing Convergent and Discriminant Validity (H2)

Positive Religious Coping Subscale

To address Hypothesis 2 and determine the convergent and discriminant validity of the Positive Religious Coping Scale, external factors were added to the one-factor positive religious coping CFA model, specifically Purity and Situational Forgiveness were used to assess convergent validity and Anxiety Symptoms and Depressive Symptoms were used to assess discriminant validity (Table 1). The resulting five-factor CFA had adequate fit according to some ($\chi^2(496) = 4017.78$, $p < .001$; SRMR = .06; RMSEA = .07; 90% C.I. = .066-.081, $p < .001$) but not all fit statistics (TLI = .87; CFI = .88). Standardized loadings for all latent, external correlates were statistically significant and above magnitude .60. Standardized factor intercorrelations ranged from r = -.06 - .54. Because these external correlates were hypothesized to be similar *and* dissimilar to positive religious coping, adequate model fit is acceptable for moving forward with testing pairs of covariances with the external factors.

Next, Wald testing was used for within-factor comparisons. Overall, results indicated evidence of the convergent and discriminant validity of the Positive Religious Coping Scale, in that it demonstrated differential patterns of correlations with external correlates (Table 4). As expected, the Positive Religious Coping Scale was more strongly associated with theoretically similar constructs (i.e., Purity and Situational Forgiveness) than more distally related external constructs (i.e., Anxiety and Depressive Symptoms). Specifically, Purity was significantly and robustly related to the Positive Religious Coping Scale as compared to all other external factors (Purity = .54, $p < .001$). Further, Anxiety Symptoms and Depressive Symptoms were nonsignificant and negatively related to the Positive Religious Coping Scale (Anxiety Symptoms = -.06, p = .45; Depressive Symptoms = -.05, p =. 58). Given the large number of comparisons, which can inflate the p-value, the Benjamini-Hochberg (1995) method was used to maintain the type 1 error at .05. After applying the Benjamini-Hochberg (1995) method, these adjusted p-

values were compared with Cohen's q effect size which examines the difference in magnitude between each pair of correlations (i.e., q < .10 none; .10-.30 small, .30-.50 medium, > .5 large effect). The differences in effect sizes between positive religious coping's association with Purity and other factors were large (Situational Forgiveness q = .49; Anxiety Symptoms q = .67; Depressive Symptoms q = .66). These large effect size differences between Purity and the other external correlates provides evidence of Purity's strong association with positive religious coping as opposed to the other external correlates. Consistent with hypotheses, the second strongest relationship with positive religious coping was Situational Forgiveness, which had a higher association with positive religious coping than Anxiety Symptoms and Depressive Symptoms. The effect sizes of the differences between its association with Situational Forgiveness and other factors were marginal to small (q = .17 - .18).

Negative Religious Coping Subscale

To address Hypothesis 2 and determine the convergent and discriminant validity of the Negative Religious Coping Scale, external factors were added to the one-factor negative religious coping CFA model, specifically, Depressive Symptoms and Anxiety Symptoms were used to assess convergent validity and Purity and Effort were used to assess discriminant validity. The resulting five-factor CFA had adequate fit according to some ($\chi^2(435) = 3328.82$, p <.001; SRMR = .06; RMSEA = .07; 90% C.I. = .061-.077, p <.001) but not all fit statistics (TLI = .88; CFI = .89). Standardized loadings for all latent, external correlates were statistically significant and above magnitude .60. Standardized factor intercorrelations ranged from r = -.13 - .60. Because these external correlates were hypothesized to be similar *and* dissimilar to negative religious coping, adequate model fit is acceptable for moving forward with testing pairs of covariances with the external factors.

Next, Wald testing was used for within-factor comparisons, and, as expected, the external factor of Depressive Symptoms was significantly and more robustly related to Negative Religious Coping Scale (Depressive Symptoms = .60, $p < .001$) as compared to all other external factors, but Anxiety Symptoms was also significantly related to the Negative Religious Coping Scale per how it was hypothesized (Anxiety Symptoms = .51, $p < .001$). Further, Purity and Effort were nonsignificant and negatively related to the Negative Religious Coping Scale (Purity = -.06, $p = .54$; Effort = -.13, $p = .18$). Again, the Benjamini-Hochberg (1995) method was used to maintain the type 1 error at .05 and then these adjusted *p*-values were compared with Cohen's q effect size (i.e., $q < .10$ none; .10-.30 small, .30-.50 medium, > .5 large effect). The effect sizes of the differences between negative religious coping's association with Depressive Symptoms and other factors were small to large (Anxiety Symptoms $q = .12$; Purity $q = .75$; Effort $q = .82$). The large effect size differences between Depressive Symptoms and the other external correlates, namely the external correlates used to examine discriminant validity (i.e., Purity and Effort), provides further evidence for Depressive Symptom's stronger association with negative religious coping as opposed to the other external correlates. Consistent with hypotheses, the second strongest relationship with negative religious coping was Anxiety Symptoms (Table 5), which had a significantly higher association with negative religious coping than Purity and Effort. The effect sizes of the differences between its association with Anxiety Symptoms and other factors were large ($q = .63$ - .70).

Results indicated evidence of the convergent and discriminant validity of the Negative Religious Coping Scale, in that it demonstrated differential patterns of correlations with external correlates. As expected, negative religious coping was more strongly associated with theoretically similar constructs (i.e., Anxiety and Depressive Symptoms) than more distally

related external constructs (i.e., Purity and Effort). Overall, evidence of convergent and discriminant validity did emerge for both the Positive Religious Coping Scale and the Negative Religious Coping Scale.

Discussion

This study systematically evaluated the 14-item, two-factor Brief Religious Coping Scale (Brief RCOPE; Pargament et al., 2011) with a sample of deployed Veterans. Informed by the psychometric theory of scale development and validation (Clark & Watson, 1995; 2019) and best practices for measurement evaluation, this study advances both psychometric assessment research and our collective understanding of religious coping in several ways.

First, this psychometric assessment established strong evidence for the robustness of an adapted, thirteen-item Brief RCOPE with two subscales of positive and negative religious coping. Results from the confirmatory factor analysis suggested that two components did emerge, positive and negative religious coping, and the items that comprise each subscale hang together well as seen in several previous studies (e.g., Casaleiro et al., 2022; García et al., 2021; Mesidor & Sly, 2023; Mohammadzadeh & Najafi, 2016; Pagán-Torres et al., 2021). The factor structure of this adapted 13-item Brief RCOPE (7 items on the Positive Religious Coping Scale and 6 items on the Negative Religious Coping Scale) also emerged in a study focused on caregivers (Casalerio et al., 2022), such that the same item that was removed in the current study (i.e., "decided the devil/evil made this happen") was also removed based on model fit in the sample of caregivers. These caregivers were actively providing care to another adult relative with a health condition, perhaps representing another sample managing persistent stressors. In addition to determining the factor structure of the Positive and Negative Religious Coping Scales, results from the *t*-test suggest that that there were no differences between men and

women Veterans when implementing the scale and that they reported similar levels of both positive and negative religious coping; this information provides some initial evidence that this thirteen-item measure can be used across these genders although further invariance testing is needed in a sample with more women.

Further, results from validity testing provided evidence for discriminant and convergent validity. Evidence for discriminant validity was established such that the Positive Religious Coping Scale was weakly related to dissimilar constructs (i.e., Depressive and Anxiety Symptoms) as was the Negative Religious Coping Scale (i.e., Purity and Effort). Evidence for convergent validity also emerged such that the Positive Religious Coping Scale was related to similar constructs (i.e., Situational Forgiveness and Purity) as was the Negative Religious Coping Scale (i.e., Depressive and Anxiety Symptoms). Guidelines on establishing construct validity (O'Leary-Kelly & Vokurka, 1998) suggest that having only discriminant validity or only convergent validity is not enough to demonstrate that construct validity has been established, but if evidence for both discriminant and convergent validity emerge, it can be said with more certainty that construct validity has been established, as was the case in the current study.

Taken together, this evidence suggests that the 13 items that comprise the Brief RCOPE scale appear to capture the construct of religious coping and that there are nuanced differences in measuring positive religious coping and negative religious coping. Notably, in the current study the Positive Religious Coping Scale and Negative Religious Coping Scale were not significantly correlated, which suggests that the constructs as measured in this study, positive and negative religious coping, appear to be distinct. The distinctness of positive and negative religious coping can also be seen further through the nuanced, and not always straightforward (i.e., positive religious coping does not always act as a protective factor), differences in wellbeing outcomes

associated with positive and negative religious coping; these nuanced differences can be seen by the current study's results and are supported by previous literature (Carroll et al., 2020; Cornish et al., 2017; Currier et al., 2017). Previous literature suggests that positive religious coping can act as a protective factor against negative mental health symptoms, such as suicide, depression, anxiety, and thwarted belongingness, in Service members (Carroll et al., 2020), but it has also found that greater use of positive religious coping can cause greater distress in Service members (Cornish et al., 2017). Further, previous research suggests that negative religious coping practices can exacerbate mental health symptoms such as posttraumatic stress disorder (PTSD), depression, anxiety, and suicidal ideation (Carroll et al., 2020; Currier et al., 2017). Therefore, given the mixed findings and importance of religion as a source of strength and form of coping for many who identify as religious, measurement tools assessing religious coping that are reliable and precise for specialized populations, sensitive to change, allow for variability, and are predictive of critical outcomes are essential, and the findings from this study support the use of this thirteen-item Brief RCOPE measure in assessing both positive and negative religious coping.

Practical Guidance

Although widely used among diverse samples, the Brief RCOPE (Pargament et al., 2011) lacked validation studies specific to the use of this measure among military-connected samples. Based on data from a sample of U.S. Veterans, the current study provides emerging evidence that the 13-item Brief RCOPE is internally consistent (i.e., agreement between items), parsimonious (e.g., simple but useful), and functional (e.g., overlaps with similar constructs, but emerges as a unique construct) for this population, key components of effective measures (Boateng et al., 2018). The validation of this Brief RCOPE has implications for researchers, clinicians, and military leadership, namely chaplains.

First, as this is the first known study to psychometrically assess the Brief RCOPE Scale with a military-affiliated sample, military-focused researchers can now use this modified, 13-item scale with more certainty that the constructs of positive and negative religious coping are accurate and valid assessments. Using both subscales of positive and negative religious coping when examining associations among constructs can be done with more confidence, although researchers are encouraged to replicate these findings by conducting CFAs with other military samples to provide further evidence of the usefulness of this scale within this population. More generally, researchers are encouraged to regularly conduct psychometric assessments (e.g., CFAs) before implementing measures into larger models and briefly report psychometric assessment data in the methods section to communicate this information to the field. Future research should continue to build off this study by examining the predictive validity of this adapted 13-item Brief RCOPE through longitudinal assessments and with diverse military-affiliated populations (e.g., active duty Service members, National Guard and Reserve members, diverse races, differing religious denominations).

Next, clinicians are able, with more certainty, to accurately assess Veteran's positive and negative religious coping practices with a brief seven-item and six-item measure, respectively. As previous research has suggested, positive religious coping can act as a protective factor for Service members and Veterans (Carroll et al., 2020), but in other instances, has been a risk factor in exacerbating distress in military-affiliated populations; therefore, it is of the utmost importance for clinicians to have an accurate, brief, and parsimonious tool in order to assess how Service members and Veterans are using religion to cope and, further, how it is impacting their mental health. Additionally, previous research has suggested that negative religious coping practices can exacerbate mental health symptoms, thus it may be a meaningful risk factor to note

when serving military-connected clients (Carroll et al., 2020; Currier et al., 2017). Therefore, having brief and accurate scales to measure positive and negative religious coping can support comprehensive assessment of Service member and Veteran mental health and wellbeing.

Finally, military leadership, namely chaplains, can use these brief positive and negative religious coping measures as touchpoints when Service members and Veterans come to them seeking support and/or when they are coping with difficult life circumstances (e.g., deployments, relocations, transitions to new units, changes in their personal life). Due to its brevity, it will not take long for chaplains to assess the extent to which Service members are engaging in positive religious coping, negative religious coping, or both which will then allow chaplains to determine points of intervention to aid the Service member. Tracking positive and religious coping practices among Service members and Veterans may aid in supporting trainings, and other interventions on the use of religion as a coping mechanism and making meaning in healthy ways after challenging events have occurred.

Limitations and Future Directions

This study was the first, to our knowledge, to comprehensively examine the psychometric properties of the Brief RCOPE Scale with a sample of U.S. Veterans, yet study limitations should be taken into consideration. First, the sample size was robust enough to conduct the current analyses, but still relatively small and specific to Veterans. Future research with active-duty Service members is needed to determine if this 13-item religious coping scale would be effective for active-duty Service members. Examinations of measurement equivalence are also warranted to understand the properties of the measure with other groups and types of people such as those who have experienced trauma and those without, men and women, enlisted and officer rank, and across different racial groups. Further, the items that comprise the Brief RCOPE Scale

(Appendix B) appear to have a Christian bias; therefore, this scale may be more applicable for individuals who practice or identify with a Christian denomination of religion as opposed to other religious affiliations. Additionally, some items on the Brief RCOPE Scale (Pargament et al., 2011) may be interpreted as religious struggle (e.g., looking for a stronger connection with one's Higher Power) which, based on an individual's interpretation and religious affiliation, may make it difficult for researchers to delineate between positive and negative religious coping with specific items. More research is needed on other, more diverse, types of religious coping scales that do not lend themselves to only Christian denominations.

Finally, this study is cross-sectional and therefore cannot speak to the Brief RCOPE Scales' predictive validity or measurement invariance over time. More longitudinal research is needed to determine if these subscales of positive and negative religious coping have predictive validity and if the psychometric properties remain the same across time.

Conclusion

This study examined the psychometric properties of the Brief RCOPE Scale with a sample of Veterans and determined that the best fitting model included two subscales, Positive Religious Coping (7 items) and Negative Religious Coping (6 items), a slightly different configuration than most but not all assessments of this measure (e.g., García et al., 2021; Mesidor & Sly, 2023; Mohammadzadeha & Najafi, 2018). Specifically, one item pertaining to the influence of the devil and/or evil in a difficult situation was removed from the Negative Religious Coping Scale as it did not hang well with other study items, similar to the findings of Casaleiro and colleagues (2022) where the same item was removed. The psychometric evidence provided in this study for the 13-item Brief RCOPE Scale opens the door for future work by

researchers, clinicians, and military leadership who are interested in better understanding and assessing religious coping among military-affiliated samples.

Table 1.

Correlation table with religious coping constructs alongside and external correlates

	1	2	3	4	5	6	7
1. Positive Religious Coping	--						
2. Negative Religious Coping	-.01	--					
3. Depressive Symptoms	-.03	.59**	--				
4. Anxiety Symptoms	-.06	.48**	.86**	--			
5. Purity	.47**	-.09	-.16*	-.16*	--		
6. Effort	.14	-.13	-.26**	-.25*	.21**	--	
7. Situational Forgiveness	.12	-.52**	-.58**	-.53**	.09	.41**	--
N	170	170	170	170	169	170	170
Mean	2.79	1.68	1.77	1.86	4.66	2.43	4.83
Standard Deviation	.85	.81	.70	.73	1.38	.48	1.17
Range	1-4	1-4	1-4	1-4	1-7	1-3	1-7
Skewness (SE)	-.44(.19)	1.19(.19)	.98(.19)	.73(.19)	-.27(.19)	-.56(.19)	-.27(.19)
Kurtosis (SE)	-.69(.37)	.44(.37)	.60(.37)	-.28(.37)	-.46(.37)	-.44(.37)	.05(.37)

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

Table 2.

Item-level descriptive statistics for the seven-item Positive Religious Coping and six-item Negative Religious Coping Scales

	1	2	3	4	5	6	7	8	9	10	11	12	13
Positive Religious Coping Subscale													
1. Item 1	--												
2. Item 2	.83**	--											
3.Item 3	.72**	.73**	--										
4.Item 4	.76**	.74**	.68**	--									
5. Item 5	.78**	.79**	.69**	.77**	--								
6. Item 6	.59**	.63**	.50**	.55**	.61**	--							
7. Item 7	.58**	.60**	.53**	.54**	.61**	.54**	--						
Negative Religious Coping Subscale													
8. Item 1	-.07	.002	-.02	-.06	.01	.05	.02	--					
9. Item 2	.003	.07	.08	.07	.003	.11	.01	.75**	--				
10. Item 3	-.07	-.03	.02	-.04	-.06	.01	.01	.79**	.81**	--			
11. Item 4	-.07	-.007	-.07	-.07	-.05	-.02	.02	.73**	.61**	.72**	--		
12. Item 5	.07	.15	.19*	.13	.11	.08	.09	.48**	.52**	.46**	.53**	--	
13. Item 7	-.15	-.15*	-.05	-.12	-.12	-.16*	-.10	.55**	.51**	.63**	.64**	.41**	--
N	170	170	170	170	170	170	170	170	170	170	170	170	170
Mean	2.79	2.84	2.80	2.71	2.81	3.12	2.42	1.79	1.71	1.72	1.66	1.56	1.66
Standard Deviation	.98	.97	1.04	.99	1.03	1.03	1.05	1.02	.97	1.02	1.00	.92	.96
Range	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Skewness	-.33	-.43	-.42	-.31	-.41	-.81	.08	1.02	1.17	1.16	1.27	1.51	1.18
(SE)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)
Kurtosis	-.91	-.79	-.99	-.93	-.97	-.63	-1.18	-.23	.18	.002	.26(	1.09	.07
(SE)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)	.37)	(.37)	(.37)

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

Table 3.

Results of the CFA for the two subscales of the Brief RCOPE

Think about how you typically respond to stressful events that you experience. Please indicate the degree to which each of the following strategies applied to you (1=*not at all*; 4=*a great deal*).	Factor 1: Positive Religious Coping	Factor 2: Negative Religious Coping
Positive Religious Coping		
1. Looked for a stronger connection with my Higher Power	**.92**	
2. Sought my Higher Power's love and care	**.92**	
3. Sought help from my Higher Power in letting go of my anger	**.82**	
4. Tried to put my plans into action together with my Higher Power	**.86**	
5. Tried to see how my Higher Power might be trying to strengthen me in this situation	**.90**	
6. Asked forgiveness for my sins	**.71**	
7. Focused on religion to stop worrying about my problems	**.70**	
Negative Religious Coping		
1. Wondered whether my Higher Power had abandoned me		**.90**
2. Felt punished by my Higher Power for my lack of devotion		**.87**
3. Wondered what I did for my Higher Power to punish me		**.92**
4. Questioned my Higher Power's love for me		**.83**
5. Wondered whether my church had abandoned me		**.59**
6. Decided the devil/evil made this happen*		.40
7. Questioned the power of my Higher Power		**.70**

Note. The bolded numbers indicate that the item was retained for the given subscale based on factor loadings and best practices.
*Indicates the item was removed from the scale.

Table 4.

Standardized within-cluster correlations for Positive Religious Coping with Anxiety Symptoms, Depressive Symptoms, Situational Forgiveness, and Purity as external correlates

	Positive Religious Coping with Anxiety Symptoms	Positive Religious Coping with Depressive Symptoms	Positive Religious Coping with Situational Forgiveness	Positive Religious Coping with Purity
Positive Religious Coping with Anxiety Symptoms r = -0.063, p = .45	--			
Positive Religious Coping with Depressive Symptoms r = -0.053, p = .58	0.069 (.01)	--		
Positive Religious Coping with Situational Forgiveness r = 0.119, p = .22	1.445 (.18)	1.212 (.17)	--	
Positive Religious Coping with Purity r = 0.542, p < .001	14.439 (.67)*	13.085 (.66)*	3.285 (.49)	--

Note. Rows and column headers represent latent factor intercorrelations after conducting the confirmatory factor analysis.
Data are presented as: Within-cluster Wald W (Cohen's q).
*Statistically significant Wald W (p < .05) after Benjamini & Hochberg's (1995) procedure controlling for the false discovery rate.

Table 5.

Standardized within-cluster correlations for Negative Religious Coping with Purity, Effort, Depressive Symptoms, and Anxiety Symptoms as external correlates

	Negative Religious Coping with Purity	Negative Religious Coping with Effort	Negative Religious Coping with Depressive Symptoms	Negative Religious Coping with Anxiety Symptoms
Negative Religious Coping with Purity $r = -0.061$, $p = .54$	--			
Negative Religious Coping with Effort $r = -0.128$, $p = .18$	0.019 (.07)	--		
Negative Religious Coping with Depressive Symptoms $r = 0.598$, $p < .001$	15.321 (.75)*	30.075 (.82)*	--	
Negative Religious Coping with Anxiety Symptoms $r = 0.514$, $p < .001$	12.376 (.63)*	24.499 (.70)*	0.907 (.12)	--

Note. Rows and column headers represent latent factor intercorrelations after conducting the confirmatory factor analysis; Depression=Depressive Symptoms; Anxiety=Anxiety Symptoms.
Data are presented as: Within-cluster Wald W (Cohen's q).
*Statistically significant Wald W ($p < .05$) after Benjamini & Hochberg's (1995) procedure controlling for the false discovery rate.

Chapter 3

Study 2 – Religious coping and psychological wellbeing among Veterans: Examining the indirect influence of self-forgiveness and self-efficacy

Religion is a formal belief system that can be used to foster a connection or personal relationship with a Higher Power (Koening, 2012); religious beliefs and practices can also serve to provide comfort, stimulate growth, enhance intimacy with a Higher Power, facilitate closeness with others, or offer meaning and purpose to life (Koening, 1998). As such, the use of religion as a coping mechanism remains a focus of research and, to some extent, intervention work. There is a need to understand the ways in which religious coping practices can be both helpful and harmful to individuals who utilize these strategies to manage general and acute stressors (Koening, 2012; Starnino et al., 2019). This study focuses on the experiences of former Service members, specifically Veterans, as they are a population likely to manage chronic mental health stressors and a group of people who tend to identify with and engage in religious practices frequently (i.e., 70% identifying as Christian; National Academies of Sciences et al., 2019).

Previous research suggests that there are two types of religious coping, positive and negative, and that they are different, but related constructs (Pargament et al., 2001). Importantly, the use of positive and negative religious coping appears to be uniquely related to different health and wellbeing outcomes among those who value religion (Carroll et al., 2020; Currier et al., 2017; Cornish et al., 2017). Namely, positive religious coping is reflective of having a trusting and confident connection with a Higher Power; individuals tend to seek religious support and assume the best of the Higher Power (Park et al., 2018; Pargament et al., 2001). Negative religious coping, on the other hand, is reflective of a less secure relationship with a Higher Power

where individuals may make cruel religious appraisals or ascribe terrible situations happening in life to the Higher Power (Park et al., 2018; Pargament et al., 2001).

In many cases, the use of positive religious coping tends to be conceptualized as a healthy form of coping for Service members and it can act as a protective factor in the context of stress (Carroll et al., 2020), yet some evidence suggests that the use of positive religious coping is not uniformly associated with better outcomes, particularly in the context of extreme stress (e.g., 10+ months of deployment; Cornish et al., 2017). Conversely, negative religious coping has consistently been identified as a risk factor for adverse mental health outcomes, such that engaging in negative religious coping can exacerbate mental health symptoms (Allen, 2020; Carroll et al., 2020).

The current study seeks to expand our knowledge base regarding the use of positive and negative religious coping among Veterans and the associations with psychological wellbeing. Furthermore, this study also seeks to elucidate the mechanisms by which positive and negative religious coping are associated with wellbeing. Informed by the Stress Process Model (Pearlin et al., 1981), suppositions are that self-concepts, namely self-forgiveness (i.e., "the process in which we make good to ourselves on our failing" [Snow, 1993, p.75]) and self-efficacy (i.e., one's belief in their ability to perform behaviors to achieve or attain goals in life), will indirectly explain the associations between positive and negative religious coping and psychological wellbeing among Veterans.

Theoretical Foundations

This study is informed by Pearlin's Stress Process Model (Pearlin et al., 1981; Pearlin, 2010), which posits that stressors, often categorized as a specific stressful experience or chronic strains (e.g., combat exposure and the reliving of deployments experiences), are systematically

linked to adverse health and wellbeing. The Stress Process Model suggests that when individuals continue to struggle with a given stressor without resolution, there is anticipated damage or harm to one's self-concepts, beliefs one holds about oneself. The degradation of self-concepts, then, in turn is associated with poor mental health and wellbeing. In other words, stress can be helpful for growth, but continued struggles may wear down one's belief in themselves and their ability to accomplish tasks. When self-concepts are worn, there are adverse implications for an individual's psychological wellbeing. This study elevates two self-concepts, specifically, self-efficacy and self-forgiveness, in understanding the links between positive and negative religious coping (a manifestation of chronic stress) and personal wellbeing.

Religious Coping and Mental Health

Positive and negative religious coping appear to be uniquely related to mental health outcomes. Negative religious coping is consistently and robustly related to poorer outcomes, such as depressive symptoms, PTSD symptoms, and perceived burdensomeness (Allen, 2020; Carroll et al., 2020). Engagement in positive religious coping is less straightforward, such that it typically acts as a protective factor (Allen, 2020; Mallia 2020) but has also been documented as a risk factor for mental health (Cornish et al., 2017; Witvliet et al., 2004). This section explores relevant research related to the use of religious coping among Service members and Veterans and its impacts on mental health.

In a sample of 67 U.S. Veterans, Allen (2020) examined whether depressive symptoms mediated the association between negative religious coping and PTSD. As hypothesized, higher levels of negative religious coping were related to more depressive symptoms and, in turn, greater PTSD symptom severity. Further, with a sample of 201 Service members and Veterans, Carroll and colleagues (2020) found that positive religious coping acted as a protective factor

against thwarted belongingness, whereas negative religious coping exacerbated the impact of PTSD on perceived burdensomeness. In a longitudinal study, Mallia (2020) examined 24 Service member's religiosity before and after combat. Findings suggested that those who were more internally religious were also more likely to employ positive religious coping or, in other words, internal religiosity scores post-combat and positive religious coping were positively correlated.

Notably a few studies present counter evidence to the notion that positive religious coping is universally associated with better outcomes (Cornish et al, 2017; Witvliet et al., 2004). Cornish and colleagues (2017) found that greater use of positive religious coping among a sample of U.S. Soldiers was related to greater distress; this finding may be conflated with external and extenuating stressors as the Service members were in the midst of an extended deployment (i.e., 10 months), but it may also mean that engagement in positive religious coping still suggests that an individual is actively struggling or dealing with difficult circumstances which can be related to poorer mental health. Additionally, Witvliet and colleagues (2004) found that Veterans' positive religious coping was significantly and positively associated with their PTSD symptoms; this finding may be due to associations between greater guilt resulting in poorer mental health where individuals who use religion to positively cope may overthink or ruminate on the choices they make thus leading them to feel guilt which then results in poorer mental health outcomes.

In addition to empirical research, interventions and programs have sought to support Service members and Veterans struggling religiously or spiritually given the connections to negative mental health outcomes. One such intervention, the Spiritually-Based PTSD Intervention for Military Veterans, was implemented and assessed among 24 Veteran participants (Starnino et al., 2019). The purpose of the eight-week psychoeducational group

intervention was to treat trauma-related spiritual wounds such as shattered spiritual beliefs. Each session lasted 90 minutes and was led by co-therapists, a chaplain and mental health clinician, both trained in treating trauma. Although the direct association between religious coping and mental health was not examined, findings did suggest that engagement in the intervention was associated with significant reductions in spiritual injury, negative religious coping, and PTSD from pre- to posttest.

There is an ongoing need to investigate under what conditions both positive and negative religious coping affect the mental health and wellbeing of military-affiliated populations. This strengths-based study is positioned to contribute to this area of study by elucidating the pathways between religious coping and psychological wellbeing. In line with Pearlin's (1981) Stress Process Model, suppositions are that there may be direct associations between positive and negative relationship coping with wellbeing, but it may also be the case that there are important mechanisms that link religious coping behaviors to individual wellbeing. This theory elevates the role of self-concepts, specifically self-forgiveness and self-efficacy, as linking mechanisms to mental health and wellbeing (Pearlin et al., 1981; Pearlin, 2010).

The Role of Self-Concepts: Self-forgiveness and Self-efficacy

In the context of stressful experiences and religious coping among Veterans, we contend that ongoing challenges may erode one's ability to forgive themselves (self-forgiveness) and their belief in their capacity to accomplish a task (self-efficacy). This section explores self-forgiveness and self-efficacy as potential linking mechanisms between religious coping and wellbeing and highlights how each construct may uniquely impact mental health and wellbeing (Cleare et al., 2019; Currier et al., 2016; Witvliet et al., 2004).

Self-forgiveness. Self-forgiveness can be understood as a process in which "we make

good to ourselves on our failing" (Snow, 1993, p.75) and forgive or release ourselves of past pain or difficult experiences. Meaningful linkages between self-forgiveness and mental health have emerged in both the general literature and military-focused research (e.g., Cleare et al., 2019; Currier et al., 2016). Cleare and colleagues (2019) conducted a systematic review to examine the relationships between self-forgiveness, suicidal ideation, and self-harm. Across the literature, higher levels of self-forgiveness were associated with lower levels of self-harm and/or suicidal ideation. In addition, several studies found that self-forgiveness may mitigate the relationship between negative life events (e.g., stressors) and self-harm. In one sample of 605 older adults (i.e., ages ranged from 50 to 92 years old), self-forgiveness partially mediated the association between religious coping and depression such that self-forgiveness was positioned as a protective factor (Lawler-Row, 2010).

Further, Kaleta and Mróz (2020) examined forgiveness as a mediator between hope and depressive symptoms with a sample of outpatient psychotherapy clients and found that forgiveness, namely forgiveness of self, others, and situations, significantly mediated the relationship between hope and depressive symptoms suggesting that hope alongside the ability to forgive in different capacities may help reduce symptoms of depression. Additionally, in a study of 475 college students, self-forgiveness partially mediated the association between self-esteem and wellbeing (Yao et al., 2016). Therefore, there is evidence to suggest that self-forgiveness can act as a protective factor for mental health and wellbeing and possibly a linking mechanism between internal processing and wellbeing (Kaleta & Mróz, 2020; Yao et al., 2016).

Among military-affiliated samples, Witvliet and colleagues (2004) examined, among other things, the relationship between self-forgiveness and three mental health outcomes, anxiety, depressive, and PTSD symptoms, in a sample of 213 help-seeking Veterans diagnosed

with PTSD. Results suggested that the inability to forgive oneself was related to greater anxiety, depressive, and PTSD symptom severity. Currier and colleagues (2016) found that self-forgiveness was generally related to greater quality of life among Veterans ($N = 678$) in a residential PTSD treatment program. Further, an overall measure of forgiveness, as measured by self-forgiveness, forgiveness of others, and being forgiven by a Higher Power, significantly mediated the relationship between religiousness/religious coping and quality of life highlighting the role of self-concepts, namely self-forgiveness, as a meaningful linking mechanism.

Self-Efficacy. Self-efficacy can be understood as how capable an individual believes they are of producing the effects they desire (Bandura, 1999). Self-efficacy affects how people think, feel, motivate themselves, and behave; therefore, if an individual has a strong sense of self-efficacy, they may take on difficult tasks, set challenging goals, and maintain commitment to achieve tasks and goals. Conversely, someone with low self-efficacy may shy away from difficult tasks, have lower aspirations, and may not be very committed to their goals and aspirations (Bandura, 1999). Self-efficacy may be a salient linking mechanism between religious coping and psychological wellbeing. Dolcos and colleagues (2021) found that self-efficacy mediated the link between religious coping and emotional distress (i.e., depression and anxiety symptoms) in a sample of 203 university-attending young adults; higher levels of religious coping were related to greater self-efficacy, and in turn, greater self-efficacy was related to fewer depressive and anxiety symptoms. Further, LaRocca and colleagues (2018) examined the association between transformational leadership and outcomes of PTSD and depression with a sample of 130 U.S. combat Veterans. Findings suggested that post-deployment self-efficacy mediated the associations between transformational leadership and both outcomes, such that having more transformational leadership skills was related to greater post-deployment self-

efficacy, and in turn, greater self-efficacy was related to fewer PTSD and depressive symptoms.

The Current Study

Based on assumptions of the Stress Process Model (1981) and extant empirical evidence, the current study sought to examine a more nuanced perspective of the links between religious coping, both positive and negative, and individual wellbeing among a sample of Veterans. Further, this study elevated the role of self-concepts, namely self-forgiveness and self-efficacy, to investigate whether they indirectly explain the associations between positive and negative religious coping and psychological wellbeing. The following path models were hypothesized:

Hypothesis 1 (H1): Positive religious coping and negative religious coping will be significantly related to psychological wellbeing; positive religious coping will be related to higher levels of psychological wellbeing and negative religious coping will be related to lower levels of psychological wellbeing.

Next, the indirect effects of self-forgiveness and self-efficacy were incorporated into the model.

Hypothesis 2 (H2): Self-forgiveness and self-efficacy will indirectly explain the association between positive and negative religious coping and psychological wellbeing. Specifically, the use of positive religious coping is hypothesized to be related to greater self-forgiveness and self-efficacy, and, in turn, greater self-forgiveness and self-efficacy are expected to both be related to better wellbeing. Further, the use of negative religious coping is hypothesized to be related to less self-forgiveness and self-efficacy, and in turn, lower levels of self-forgiveness and self-efficacy are expected to be related to poorer wellbeing.

In addition to accounting for the constructs of interest, the model will also account for covariates based on previous literature (Murphy, 2016; Pew Research Center, 2018), namely

gender and age. Notably, Roothman and colleagues (2003) found that men scored higher on self-concepts and automatic positive thoughts whereas women scored higher on the expression of affect and religious wellbeing. Similarly, Matud and colleagues (2019) found differences between men and women such that men scored higher than women in self-acceptance and autonomy, and women scored higher than men in personal growth and positive relations with others. Regarding age, Ryff and Keyes (1995) found that individuals aged 18-29 years old rated environmental mastery and autonomy (constructs similar to self-efficacy) as most salient, whereas individuals aged 30-64 years old rated environmental mastery, autonomy, purpose in life, and personal growth as most salient; further, individuals aged 65+ rated purpose in life and personal growth as most salient. Given these established, gender and age were identified as potential covariates.

Method

Procedures and Participants

Data are drawn from the Faith & Forgiveness (F&F) Study, a study focused on the experiences of Veterans who experienced at least one deployment during their time in service. The survey was accessible to participants through the online data collection platform called Prolific. Prolific was developed for web-based research by academic researchers in exchange for monetary payment. It requires participants to be registered with the online platform and only presents studies to individuals for which they meet the criteria. Prolific has been shown to be a useful and systematic tool with high levels of transparency for both researchers and participants such that it is capable of reliably collecting data (Palan & Schitter, 2018). For this study, data collection occurred from May of 2023 to November 2023. Inclusion criteria required that all participants had to be 18 years old or older, be living in the United States of America, be a

Veteran who was deployed at least once, and identify as religious/spiritual. Participants were compensated $5.50 as a "thank you" for their time and attention while participating in the survey. The recruitment, consent, and data protection procedures were approved by Auburn University's Institutional Review Board, Human Subjects Committee (IRB #23-157).

The total number of respondents was 177 Veterans. Accounting for those removed due to survey non-response (n = 7), the final analytic sample was 170. Among the participants, 132 (77.6%) of the Veterans are men (n = 38 women). The average age is 45.5 years old (range 24-75 years old). The majority are White (n = 115; 67.6%), and the majority are married or in a committed relationship (n = 126; 74.1%). The majority had a bachelor's degree or a graduate/professional degree (n = 91; 53.5%) or attended some college (n = 41; 24.1%). Sixty-four of the Veterans served in the Army (37.6%), 41 served in the Air Force (24.1%), 35 served in the Navy (20.6%), 16 served in the Marine Corps (9.4%), 12 served in the National Guard/Reserves (branches unspecified; 7.1%), and 2 served in the Coast Guard (1.2%). Veterans served in the military an average of 9.7 years (ranging from 1-38 years).

Measures

Means, standard deviations, and bivariate correlations can be found in Table 1.

Brief Religious Coping Brief* (*RCOPE; Pargament et al., 2011). Seven items were used to assess Veterans' perceptions of their positive religious coping, and 6 items were used to assess negative religious coping per the findings from a previous study (Sherman & Lucier-Greer, in preparation). Veterans responded to the prompt, "Think about how you typically respond to stressful events that you experience. Please indicate the degree to which each of the following strategies applied to you." Sample positive religious coping items include: "Looked for a stronger connection with my Higher Power," and "Focused on religion to stop worrying about

my problems." Sample negative religious coping items include: "Wondered why my Higher Power had abandoned me," and "Wondered whether my church had abandoned me." See all items in Appendix B. Of note, the scale was slightly changed such that the word "God" in the original scale was changed to "Higher Power" in the current study for inclusivity purposes of different religions. These items were assessed on a scale of 1 (*not at all*) to 5 (*a great deal*) and were mean scored such that higher scores represented more of each type of coping. Cronbach's Alpha was high for both the Positive Religious Coping Scale ($\alpha = .93$) and the Negative Religious Coping Scale ($\alpha = .91$).

Heartland Forgiveness Scale: Forgiveness of Self (Thompson et al., 2005). Six items were used to assess forgiveness of self (henceforth, self-forgiveness). Veterans responded to the prompt, "In the course of our lives negative things may occur because of our own actions, the actions of others, or circumstances beyond our control. For some time after these events, we may have negative thoughts or feelings about ourselves, others, or the situation. Think about how you typically respond to such negative events. Next to each of the following items select the number that best describes how you typically respond the negative situation." Sample items include: "Although I feel bad at first when I mess up, over time I can give myself some slack," and "It is really hard for me to accept myself once I've messed up." These items were assessed on a scale of 1 (*almost always false of me*) to 7 (*almost always true of me*). Some items were reverse coded when applicable, and then these six items were mean scored such that higher scores represented more self-forgiveness when examining correlations among variables and in the path model. In the present sample, the scale demonstrated good internal consistency, Cronbach's $\alpha = .84$.

Self-Efficacy (Sherer et al., 1982)**.** Twelve items were used to assess Veterans' self-efficacy. Veterans were asked, "How true do you feel these statements are about your

personally?" on a scale of 1 (*not like me*) to 3 (*a lot like me*). Sample items include: "If something looks too complicated, I will not even bother to try it," "When I make plans, I am certain I can make them work," and "When I set important goals for myself, I rarely achieve them." Some items were reverse scored before all items are mean scored such that higher scores represented more self-efficacy. In the present sample, the scale demonstrated good internal consistency, Cronbach's α = .86.

Psychological Wellbeing (Ryff & Keyes, 1995)**.** Eleven items were used to assess psychological wellbeing. Veterans were asked the extent to which they agree or disagree with a series of statements on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items include: "Some people wander aimlessly through life, but I am not one of them," "The demands of everyday life often get me down," and "I am good at managing the responsibilities of daily life." Some items were reverse scored before all items are mean scored such that higher scores represented more psychological wellbeing. In the present sample, the scale demonstrated good internal consistency, Cronbach's α = .86. A CFA was conducted to examine if all of the original 18 items were needed to assess psychological wellbeing with the current sample; results suggested only 11 items were needed.

Covariates. Veterans indicated their age in years (M = 45.5; SD = 12.48). For gender, participants were prompted to 'select all that apply' and had the options to select the following: man, woman, non-binary, genderfluid, cisgender, transgender – male to female, transgender – female to male, prefer not to say, and there was also an "other, please specify" where respondents could type in their own response. Gender was grouped dichotomously as only two gender groups emerged, n = 132 men and n = 38 women. Gender and age were selected as covariates due to previous literature finding that women tend to identify as religious more than

men (Murphy, 2016) and that, on average, men tend to employ more negative religious coping than women (Rassoulian et al., 2021). Further, older individuals also tend to identify as religious more than younger individuals (Pew Research Center, 2018) and, on average, older individuals tend to use negative religious coping less frequently than younger individuals (O'Brien et al., 2019).

Analytic Plan

Preliminary analyses included a review of descriptive statistics and missingness across all study variables in SPSS Version 26. Covariates were included in the model to control for any effects on negative religious coping. Path models were then conducted in Mplus version 8.6.

To examine H1, psychological wellbeing was regressed onto both positive religious coping and negative religious coping in a path model, accounting for relevant covariates. To examine H2, an indirect effects model was fit (Figure 1). The indirect effects model examined whether positive religious coping was significantly associated with greater self-forgiveness and self-efficacy, and in turn, if self-forgiveness and self-efficacy was significantly associated with better psychological wellbeing. Similarly, and simultaneously, the model examined if negative religious coping was significantly associated with lower levels of self-forgiveness and self-efficacy, and in turn, if self-forgiveness and self-efficacy was associated with psychological wellbeing. Both direct and indirect associations were examined.

Results

Preliminary Descriptive Statistics

Most of the variables of interest were significantly correlated in the expected direction. One notable exception was that positive religious coping and negative religious coping were not significantly correlated, and positive religious coping was not significantly correlated with any

other variable in the study. The selected covariates, age and gender, were included in the model.

Positive and Negative Religious Coping in Relation to Psychological Wellbeing (H1)

To address Hypothesis 1, psychological wellbeing was regressed onto both positive religious coping and negative religious coping, and negative religious coping was regressed onto gender and age. Model fit was acceptable for most ($\chi^2(12) = 64.79$, $p < .001$; SRMR = .06; RMSEA = .06; 90% C.I. = .00 - .12, $p = .39$; CFI = .92) but not all fit statistics (TLI = .88). Hypothesis 1 is partially supported such that negative religious coping was significantly and negatively associated with psychological wellbeing ($\beta = -.48$, $p < .001$; supported), but positive religious coping was not significantly associated with psychological wellbeing ($\beta = .04$, $p = .53$; not supported). Specifically, greater engagement in negative religious coping was related to poorer psychological wellbeing. Regarding the covariates, those who were younger reported greater use of negative religious coping ($\beta = -.16$, $p = .01$) but no difference emerged between reports of negative religious coping between men and women ($\beta = .12$, $p = .18$).

The Effects of Self-forgiveness and Self-Efficacy (H2)

To address Hypothesis 2, direct and indirect effects were modeled between the religious coping constructs and wellbeing accounting for the roles of self-forgiveness and self-efficacy. See Figure 1. Model fit was good ($\chi^2(10) = 8.27$, $p = .60$; CFI = 1.00; TLI = 1.00; 90% C.I. = .00 - .07, $p = .84$; RMSEA = .00; SRMR = .04). Hypothesis 2 was partially supported. Positive religious coping did not significantly predict self-forgiveness ($\beta = .05$, $p = .49$) or self-efficacy ($\beta = .14$, $p = .06$; not supported), but negative religious coping was associated with less self-forgiveness ($\beta = -.45$, $p < .001$) and lower self-efficacy ($\beta = -.30$, $p < .001$). In turn, greater self-forgiveness ($\beta = .33$, $p < .001$) and self-efficacy ($\beta = .39$, $p < .001$) were associated with better psychological wellbeing. Regarding the direct effects, positive religious coping was not

associated with psychological wellbeing (β = -.03, p = .60; not supported), but negative religious coping was associated with poorer psychological wellbeing when accounting for all else in the model (β = -.21, p < .001). The indirect effects of positive religious coping on psychological wellbeing through self-forgiveness (β = .02, p = .51) and self-efficacy (β = .07, p = .10) were nonsignificant. This means that self-forgiveness and self-efficacy did not significantly explain the association between positive religious coping and psychological wellbeing. The indirect effects of negative religious coping on psychological wellbeing through both self-forgiveness (β = -.20, p < .001) and self-efficacy (β = -.16, p = .001) were significant. This means that self-forgiveness and self-efficacy significantly explained the association between negative religious coping and psychological wellbeing.

Regarding the covariates, age (β = -.16, p = .01) but not gender (β = .12, p = .21) was associated negative religious coping. Older Veterans were less likely to endorse negative religious coping but no differences were found between men and women Veterans.

Discussion

The purpose of this study was to examine whether self-forgiveness and self-efficacy indirectly explain the associations between positive and negative religious coping and psychological wellbeing with a sample of U.S. Veterans, a group of people who typically identify as religious (~72%; Kamarck, 2019). In other words, do the ways in which Veterans engage and grapple with religion and their Higher Power in the context of stress impact how they perceive themselves, specifically their ability to forgive themselves and perception of their ability to overcome tough situations? In turn, do these salient self-concepts have implications for psychological wellbeing? This study was informed by the Stress Process Model (Pearlin et al., 1981) and extant empirical evidence demonstrating the pathways between stressful contexts,

perceptions of self, and wellbeing, and this study advances religious coping research and theory in several ways.

First, as hypothesized, negative religious coping was associated with psychological wellbeing; Veterans who engaged in greater levels of negative religious coping tended to report lower psychological wellbeing. This evidence partially supported Hypothesis 1, and this finding is similar to previous research in that negative religious coping has consistently been found to act as a risk factor for adverse mental health outcomes (Allen, 2020; Carroll et al., 2020). Further, negative religious coping may be associated with spiritual struggle, something the current study did not account for; therefore, future research may account for spiritual struggle as it may explain associations between negative religious coping and mental health outcomes (Bockrath et al., 2022). Contrary to expectations, in this sample of Veterans, positive religious coping was not associated with psychological wellbeing. While other studies have found that positive religious coping could act as a protective factor (Carroll et al., 2020), that trend did not emerge in this sample. Interestingly, research with other military-affiliated samples also identified mixed results regarding the use of positive religious coping as a protective factor; specifically Cornish and colleagues (2017) found that greater use of positive religious coping was related to greater distress among Service members who were in the midst of an extended deployment (i.e., 10 months). It will be important to continue to examine under what conditions positive religious coping acts as a protective factor for military-affiliated populations given that research with other samples has found that thoughts (e.g., sought my Higher Power's love and care) and behaviors (e.g., looked for a stronger relationship with my Higher Power) that connect individuals to their Higher Power can be an effective form of coping (e.g., Carroll et al., 2020).

Further results from the indirect effects model (Hypothesis 2) were also partially

supported and were similar to those of Hypothesis 1 in that positive religious coping was not significantly associated with either the self-concept variables, self-forgiveness and self-efficacy, or psychological wellbeing, but evidence did emerge regarding the association between negative religious coping and psychological wellbeing as explained by self-forgiveness and self-efficacy. This means that greater use of negative religious coping (e.g., feeling abandoned or punished by Higher Power, questioning the abilities of one's Higher Power) was associated with lower levels of both self-forgiveness and self-efficacy, and in turn, lower levels of self-forgiveness and self-efficacy significantly were systematically associated with poorer psychological wellbeing. Therefore, if military-affiliated individuals are employing negative religious coping, points of intervention could include changing negative patterns of thinking as well as implementing practices of self-forgiveness and self-efficacy. Previous research substantiates these findings in that negative religious coping has consistently been found to act as a risk factor for psychological wellbeing (Allen, 2020; Carroll et al., 2020). Additionally, self-forgiveness and self-efficacy have been found to act as protective factors between negative forms of coping, namely negative religious coping, and negative mental health outcomes (e.g., depression, PTSD, anxiety) (Cleare et al., 2019; Kaleta & Mróz, 2020; Dolcos et al., 2021; LaRocca et al., 2018). In other words, self-forgiveness and self-efficacy serve as important linking mechanisms between coping behaviors and mental health. These findings align with the Pearlin's Stress Process Model (Pearlin et al., 1981; Pearlin, 2010) such that these concepts of self are systematically linked to health and wellbeing as, in the current study, these self-concepts explain and mitigate the negative effects of the relationship between negative religious coping and psychological wellbeing.

Practical Guidance

With a sample of U.S. Veterans, the present study identified important associations between a common form of coping, religious coping, and concepts of self that influence one's overall psychological wellbeing. The findings from this study have implications for researchers, clinicians, policy makers, and religious leaders.

To begin, this is the first study to use the adapted Brief RCOPE Scale (Pargament et al., 2011; Sherman & Lucier-Greer, [in preparation]) following a psychometric assessment with a military-affiliated sample. This study provides additional evidence for the reliability and validity of this measurement tool with military-affiliated samples, specifically evidence of the measure's internal consistency and predictive validity emerged. Researchers are encouraged to continue to use this measure to better understand how religious coping is systematically associated with personal and interpersonal wellbeing which will help inform points of intervention for Veterans who identify as religious.

Even though this study was focused on a community-based sample of Veterans (e.g., non-clinical sample), clinicians may choose to utilize this measure of religious coping or integrate conversations about religious coping, more generally, given the systematic link between negative religious coping and adverse mental health outcomes, such as depression and anxiety symptoms (Dolcos et al., 2021). Further, clinicians will be able to make more informed choices about treatment plans, especially with military-affiliated individuals who are employing negative religious coping as this has been systematically associated with negative mental health outcomes (Dolcos et al., 2021) and could be directly addressed in order to reduce its negative effects. Some points of intervention could include implementing practices of self-forgiveness and self-efficacy. Additionally, consideration of why positive religious coping was not associated with self-forgiveness, self-efficacy, or psychological wellbeing is important as mixed findings

have surfaced regarding the impact of positive religious coping on different mental health outcomes (Cornish et al., 2017). Therefore, it will be important for clinicians to survey the impact positive religious coping is having on the Veterans' mental health and, when applicable, suggest other forms of coping (e.g., self-forgiveness) that will aid in their treatment journey as opposed to hinder it.

Finally, policy makers and religious leaders can use these study findings to inform the approaches they take in addressing mental health challenges and overall wellbeing. Policy makers can continue to fund and use research around religious coping and mental health outcomes to inform both policy and prevention/intervention efforts for our U.S. Service members and Veterans. As a foundation for these efforts, there are accessible programs available for military-affiliated individuals who desire to address religion and mental health in order to make meaning of the experiences they might have had while serving in the armed forces (e.g., Spiritually-Based PTSD Intervention for Military Veterans, REBOOT Recovery, access to Chaplains). Recognizing that negative religious coping is a risk factor for mental health is an important step in mitigating the effects of negative religious coping and in finding positive protective factors, such as self-forgiveness and self-efficacy, that can become points of intervention through programming or training of military leaders, such as Chaplains. In reference to religious leaders, it is important for these individuals to recognize that not all individuals use religion as a positive form of coping. It is also possible that individuals who do not understand their belief system in its entirety may misconstrue what their belief system actually posits, thus harming their mental health and wellbeing. Therefore, when religious leaders work with military-affiliated individuals, asking pointed questions, recognizing that people use religion to negatively cope, and being open to suggesting alternative forms of coping to those they are serving (e.g., a

licensed therapist, physical exercise, social support) is important.

Limitations and Future Directions

Although this study advances our collective understanding of religious coping especially among military-affiliated populations, study limitations should be noted. First, the study sample is relatively small and specific to Veterans; future research is needed with active-duty and Reserve component Service members to determine if these findings are consistent across different service statuses. Additionally, the study design was cross-sectional; therefore, casual relationships cannot be inferred. Future research should include examining these associations longitudinally. Further, Veterans were prompted to think about a stressful experience generally when completing the positive and negative religious coping items which means that they may not have been thinking of a military-affiliated event specifically; future research may include more specific military-affiliated stressors in the prompt when asking about religious coping. Finally, most Veterans in the current study were Christian (86%) and the Brief Religious Coping Scale (Pargament et al., 2011) may demonstrate bias toward Christian belief systems; therefore, we cannot currently generalize findings to other beliefs and denominations. Research that is more comprehensive and inclusive of other belief systems is needed.

Conclusion

Study findings provide theoretical evidence for the ongoing usefulness of Stress Process Model (Pearlin et al., 1981; Pearlin, 2010) and reminders about the importance of religious coping, namely negative religious coping, for self-concepts and wellbeing with a sample of Veterans. More specifically, results from an indirect effects path model suggest that negative religious coping is directly associated with psychological wellbeing and indirectly associated via self-forgiveness and self-efficacy. More research is needed to understand the implications of

positive religious coping for personal health and wellbeing as it was not directly or indirectly associated with self-forgiveness, self-efficacy, or psychological wellbeing in the current study. Researchers, clinicians, policy makers, and religious leaders who are interested in assessing religious coping, examining the effects of religious coping on mental health and wellbeing, and finding points of intervention that include concepts of self within military-affiliated samples can use findings from this study to extrapolate relevant implications and conduct future studies to better understand the nuanced differences in outcomes between the use of positive and negative religious coping.

Chapter 4:

General Discussion

The purpose of this dissertation was to advance the literature on religious coping among Veterans by focusing on the measurement of religious coping and the ways in which religious coping manifests within the individual. As such, two complementary studies were conducted. In the first study, an in-depth psychometric assessment of the two-factor Brief Religious Coping (Brief RCOPE) Scale (Pargament et al., 2011) was conducted with a sample of U.S. Veterans; the scale was comprised of positive religious coping and negative religious coping subscales and, to our knowledge, had not been fully validated with a military-affiliated sample. Then, the findings from the psychometric assessment informed the use of the two-factor Brief RCOPE Scale (Pargament et al., 2011) in the second study which examined the pathways by which religious coping is systematically associated with psychological wellbeing. More specifically, the links between religious coping (positive and negative), self-concepts (self-forgiveness and self-efficacy), and psychological wellbeing were examined as informed by the Stress Process Model ([Pearlin et al., 1981; Pearlin, 2010). Overall, the aims of these complementary studies were to extend our understanding of religious coping in the context of stress and the downstream implications of religious coping on mental health and wellbeing among Veterans. Key findings from these studies are highlighted below.

Study 1: Assessing the Brief Religious Coping Scale (Brief RCOPE) with a Veteran sample

The psychometric assessment of the Brief Religious Coping Scale (Brief RCOPE; Pargament et al., 2011) established strong evidence for the robustness of an adapted, thirteen-item measure with two subscales of positive and negative religious coping. These findings

replicate previous research (Casaleiro et al., 2022) in that seven items were found to comprise the positive religious coping subscale, and six items, of the original seven, were found to comprise the negative religious coping subscale.

Evidence for both discriminant and convergent validity emerged such that variables that were hypothesized to provide evidence for convergent validity (i.e., purity for positive religious coping and depressive symptoms for negative religious coping) did so and variables that were hypothesized to provide evidence for discriminant validity (i.e., anxiety symptoms for positive religious coping and effort for negative religious coping) did so. These findings align with best practices in establishing construct validity given that evidence for both discriminant and convergent validity emerged (O'Leary-Kelly & Vokurka, 1998). This means that it can be said with more confidence that both the Positive and Negative Religious Coping Subscales of the Brief RCOPE (Pargament et al., 2011) measure have construct validity. Taken together, the aforementioned findings suggest that there are nuanced differences in measuring positive religious coping and negative religious coping within military-affiliated populations. Further evidence of the Positive and Negative Religious Coping Scales being unique and nuanced constructs can be seen in that they were uncorrelated with one another.

As researchers, we know the creation and validation of measurement tools is of the utmost importance when conducting high-quality research. Because, as we know, if constructs we seek to explore in research are not being accurately assessed, then the models in which these variables are being used become obsolete. As it cannot be said with confidence that the variables we seek to utilize are in fact being assessed accurately within the models. Therefore, a call for future research is for researchers to psychometrically assess the effectiveness of scales that are implemented in studies as it is always important for this to occur. Simple analyses can be

conducted if the main purpose of the study is not a full psychometric assessment; analyses that could be conducted include confirmatory factor analyses (CFAs), inter-item correlations, and including McDonald's Omega alongside Cronbach's Alpha. Psychometric assessments are especially important to be conducted with diverse samples (e.g., men and women, military and civilian, racial minorities and majorities), after long periods of time have passed since the scale had been psychometrically assessed, and when cultural differences are present (e.g., different languages, contexts).

Study 2: Religious coping, self-concepts, and psychological wellbeing

Given the large number of Service members and Veterans that identify as religious, assessing religious coping and its effects on the mental health of this population is important for their overall health and wellbeing. Therefore, by fitting direct and indirect effects models, we found that direct and indirect effects emerged in understanding the relationships between religious coping, self-concepts, and psychological wellbeing. First, negative, but not positive, religious coping was found to be negatively associated with psychological wellbeing.

Next, self-forgiveness and self-efficacy indirectly explained the association between negative religious coping and psychological wellbeing, but they did not explain the association between positive religious coping and psychological wellbeing. Therefore, continued research is needed to determine how, when, and in what contexts religious coping may be helpful or harmful to Service members and Veterans. This is especially important as different programs and interventions are being created to help address any mental health challenges that arise due to the various types of religious coping (Ames et al., 2021), and for these programs/interventions to help heal military-affiliated individuals, rather than harm them, effective assessment and implementation of knowledge around the use of positive and negative religious coping is needed.

In addition to future research continuing to investigate the ways in which religious coping affects mental health, it is also important for religious leaders, clergy, and mental health professionals to stay up to date on the most recent research so they know how to best aid our Service members and Veterans (Trevino et al., 2012).

Theoretical Approaches to Examining the Brief RCOPE Scale and Psychological Wellbeing

These studies can be synthesized and interpreted together utilizing the psychometric theory of scale development and validation (Clark & Watson, 1995) and the Stress Process Model (Pearlin et al., 1981; Pearlin, 2010). Notably, the frequent psychometric assessment of scales with diverse populations and across diverse perspectives (e.g., languages, races, countries, religions, careers, stage of life) is important before implementing a construct into a larger model (i.e., the psychometric theory of scale development and validation [Clark & Watson, 1995]). Further, there is the notion that stress manifests in undesirable ways; the continuous struggle with a given stressor without resolution may damage or harm one's self-concepts, such as self-forgiveness and self-efficacy, which in turn may impact one's psychological wellbeing (i.e., the Stress Process Model [Pearlin et al., 1981; Pearlin, 2010]). In the two studies presented, a thorough psychometric assessment of the Brief RCOPE Scale (Pargament et al., 2011) was conducted with a sample of U.S. Veterans before using the Positive and Negative Religious Coping subscales in a larger model to assess the indirect associations between religious coping and psychological wellbeing through self-forgiveness and self-efficacy. These studies took a best practices approach by psychometrically assessing the predictors of interest for soundness of the measures in the given sample before implementing the scale into a larger model to better understand important relationships among the constructs of interest.

Conclusion

Overall, routine psychometric assessments of all measures and scales are, and will continue to be, important for research as a whole, and continuing to investigate the nuances of religious coping within Service member and Veteran samples is important for furthering knowledge that will inform programming and interventions for this important population.

Table 1.

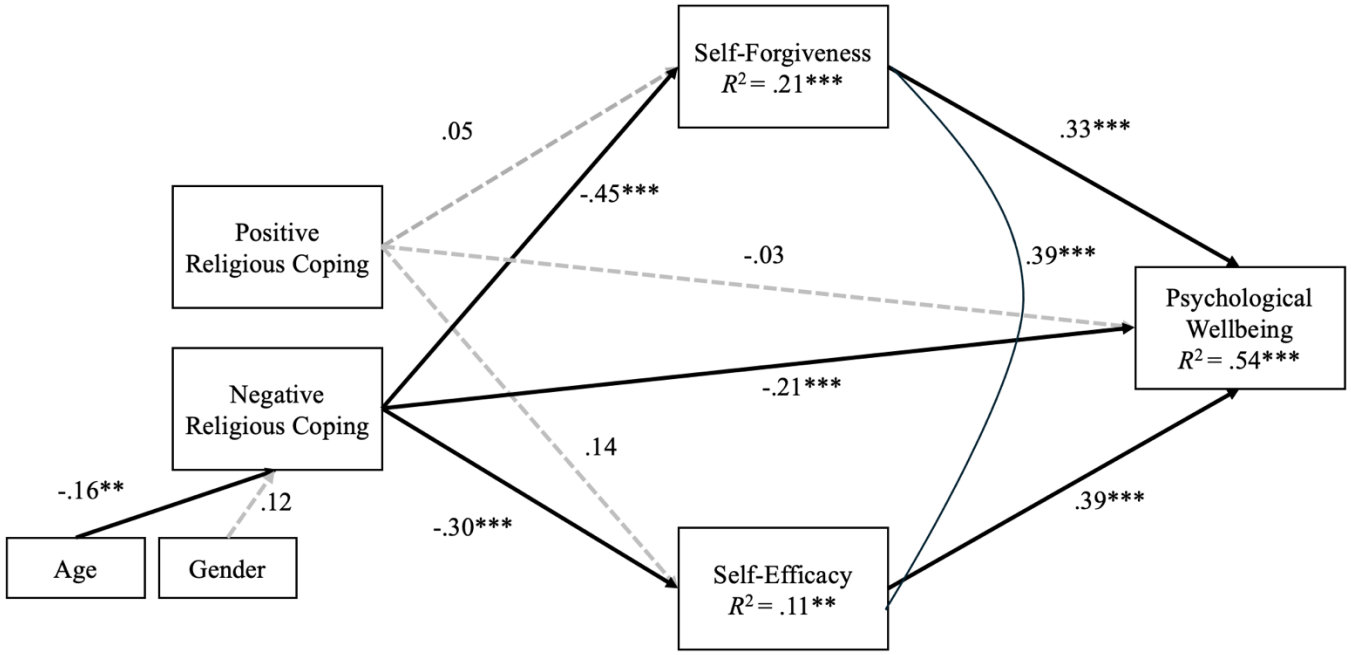
Correlation table with main variables of interest and covariates (N = 170 Veterans)

	1	2	3	4	5	6	7
1. Positive Religious Coping	--						
2. Negative Religious Coping	-.01	--					
3. Self-Forgiveness	.06	-.45**	--				
4. Self-Efficacy	.14	-.30**	.47**	--			
5. Psychological Wellbeing	.05	-.48**	.61**	.61**	--		
6. Age	.10	-.28**	.13	.10	.11	--	
7. Gender	.04	.14	-.14	-.12	-.16*	-.14	--
N	170	170	170	170	170	169	170
Mean	2.79	1.68	4.79	2.55	4.88	45.5	--
Standard Deviation	.85	.81	1.15	.37	1.09	12.48	--
Range	1-4	1-4	1-7	1-3	1-7	24-75	0-1
Skewness	-.44	1.19	-.26	-.88	-.25	.42	5.38
(SE)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)	(.19)
Kurtosis	-.69	.44	-.01	.52	-.48	-.70	46.01
(SE)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)	(.37)

Note. Gender (1=men; 0=women); *$p < .05$, **$p < .01$, ***$p < .001$

Figure 1.

Indirect effects of self-concepts on the associations between positive and negative religious coping and psychological wellbeing with a sample of Veterans



Note. Standardized coefficients are presented. $X^2(10) = 8.27$, $p = .60$; CFI = 1.00; TLI = 1.00; 90% C.I. = .00 - .07, $p = .84$; RMSEA = .00; SRMR = .04. *$p < .05$, **$p < .01$, ***$p < .001$

References

Allen, C. M. (2020). *Depression as a mediator among military veterans: A quantitative correlational study* [Ph.D., Grand Canyon University]. https://www.proquest.com/docview/2435218351/abstract/B49211B0A1EE4557PQ/1

Ames, D., Erickson, Z., Geise, C., Tiwari, S., Sakhno, S., Sones, A. C., Tyrrell, C. G., Mackay, C. R. B., Steele, C. W., Van Hoof, T., Weinreich, H., & Koenig, H. G. (2021). Treatment of moral injury in U.S. veterans with PTSD using a structured chaplain intervention. *Journal of Religion and Health*, *60*(5), 3052–3060. https://doi.org/10.1007/s10943-021-01312-8

Bandura, A., Freeman, W. H., & Lightsey, R. (1999). Self-efficacy: The exercise of control. *Journal of Cognitive Psychotherapy*, *13*(2), 158–166. https://doi.org/10.1891/0889-8391.13.2.158

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, *57*(1), 289–300. https://doi.org/10.1111/j.2517-6161.1995.tb02031.x

Blau, G., & Miller, G. (2021). Comparing two distinct miliary samples on traumatic events, positive coping styles and post traumatic growth. *Journal of Education and Learning*, *11*(1), 1. https://doi.org/10.5539/jel.v11n1p1

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health*, *6*(149), 1-18. https://doi.org/10.3389/fpubh.2018.00149

Bockrath, M. F., Pargament, K. I., Wong, S., Harriott, V. A., Pomerleau, J. M., Homolka, S. J., Chaudhary, Z. B., & Exline, J. J. (2022). Religious and spiritual struggles and their links to

psychological adjustment: A meta-analysis of longitudinal studies. *Psychology of Religion and Spirituality*, *14*(3), 283–299. https://doi.org/10.1037/rel0000400

Brown, K. M., Hoye, R., & Nicholson, M. (2012). Self-esteem, self-efficacy, and social connectedness as mediators of the relationship between volunteering and well-being. *Journal of Social Service Research*, *38*(4), 468–483. https://doi.org/10.1080/01488376.2012.687706

Büssing, A. (2015). Spirituality/religiosity as a resource for coping in soldiers: A summary report. *Medical Acupuncture*, *27*(5), 360–366. https://doi.org/10.1089/acu.2014.1062

Carroll, T. D., McCormick, W. H., Smith, P. N., Isaak, S. L., & Currier, J. M. (2020). PTSD, religious coping, and interpersonal antecedents of suicidal desire among military veterans: An initial examination of moderation models. *Psychology of Religion and Spirituality*, *12*(3), 304–310. https://doi.org/10.1037/rel0000270

Casaleiro, T., Martins, H., & Caldeira, S. (2022). Validation of the Brief RCOPE in Portuguese family caregivers of adults with health conditions. *Religions*, *13*(2), Article 2. https://doi.org/10.3390/rel13020144

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, *7*(3), 309–319. https://doi.org/10.1037/1040-3590.7.3.309

Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment, 31*(12), 1412-1427. https://doi.org/10.1037/pas0000626

Cleare, S., Gumley, A., & O'Connor, R. C. (2019). Self-compassion, self-forgiveness, suicidal ideation, and self-harm: A systematic review. *Clinical Psychology & Psychotherapy*, *26*(5),

511–530. https://doi.org/10.1002/cpp.2372

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Routledge. https://doi.org/10.4324/9780203771587

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis, 2nd ed* (pp. xii, 430). Lawrence Erlbaum Associates, Inc.

Cornish, M. A., Lannin, D. G., Wade, N. G., & Martinez, M. (2017). Can use of positive religious coping predict greater distress? An examination of Army soldiers on deployment. *Journal of Counseling Psychology*, *64*(3), 302–309. https://doi.org/10.1037/cou0000200

Currier, J. M., Drescher, K. D., Holland, J. M., Lisman, R., & Foy, D. W. (2016). Spirituality, forgiveness, and quality of life: Testing a mediational model with military veterans with PTSD. *International Journal for the Psychology of Religion*, *26*(2), 167–179. https://doi.org/10.1080/10508619.2015.1019793

Currier, J. M., Smith, P. N., & Kuhlman, S. (2017). Assessing the unique role of religious coping in suicidal behavior among US Iraq and Afghanistan veterans. *Psychology of Religion and Spirituality*, *9*(1), 118–123. https://doi.org/10.1037/rel0000055

Davis, D. E., Worthington Jr., E. L., Hook, J. N., & Hill, P. C. (2013). Research on religion/spirituality and forgiveness: A meta-analytic review. *Psychology of Religion and Spirituality*, *5*(4), 233–241. https://doi.org/10.1037/a0033637

Davis, E. B., Worthington, E. L., & Schnitker, S. A. (Eds.). (2023). *Handbook of Positive Psychology, Religion, and Spirituality*. Springer International Publishing. https://doi.org/10.1007/978-3-031-10274-5

Dolcos, F., Hohl, K., Hu, Y., & Dolcos, S. (2021). Religiosity and resilience: Cognitive reappraisal and coping self-efficacy mediate the link between religious coping and well-

being. *Journal of Religion and Health*, *60*(4), 2892–2905. https://doi.org/10.1007/s10943-020-01160-y

Furr, R. M., & Bacharach, V. R. (2013). *Psychometrics: An introduction* (2008-03291-000; 2nd ed.). Sage Publications, Inc.

García, F. E., Oyanedel, J. C., Páez, D., & Arias, P. R. (2021). Psychometric properties of the Brief Religious Coping Scale (Brief-RCOPE) in Chilean adults exposed to stressful events. *Journal of Religion and Health*, *60*(1), 475–487. https://doi.org/10.1007/s10943-019-00976-7

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using pls-graph: Tutorial and annotated example. *Communications of the Association for Information Systems*, *16*. https://doi.org/10.17705/1CAIS.01605

Graham, J., Haidt, J., & Nosek, B. A. (2008). *Moral Foundations Questionnaire*. Moral Foundations. https://psycnet.apa.org/doiLanding?doi=10.1037%2Ft05651-000

Gray, K., DiMaggio, N., Schein, C., & Kachanoff, F. (2023). The problem of purity in moral psychology. *Personality and Social Psychology Review*, *27*(3), 272–308. https://doi.org/10.1177/10888683221124741

Haikola, A. (2023). Conversations with God: How are religion and spirituality used to make sense of forgiveness? *Pastoral Psychology*. https://doi.org/10.1007/s11089-023-01081-z

Hamlin-Glover, D. L. (2009). *Spirituality, religion, and resilience among military families*. https://diginole.lib.fsu.edu/islandora/object/fsu%3A182453/

Hayes, A. F., & Coutts, J. J. (2020). Use Omega rather than Cronbach's alpha for estimating reliability. But…. *Communication Methods and Measures*, *14*(1), 1–24. https://doi.org/10.1080/19312458.2020.1718629

Heggestad, E. D., Scheaf, D. J., Banks, G. C., Monroe Hausfeld, M., Tonidandel, S., & Williams, E. B. (2019). Scale adaptation in organizational science research: A review and best-practice recommendations. *Journal of Management*, *45*(6), 2596–2627. https://doi.org/10.1177/0149206319850280

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Janu, A., Malinakova, K., Kosarkova, A., Furstova, J., & Tavel, P. (2019). Psychometric evaluation of the Negative Religious Coping (NRC) Scale of the Brief RCOPE in the Czech environment. *Mental Health, Religion & Culture*, *22*(6), 614–625. https://doi.org/10.1080/13674676.2019.1597033

Kaleta, K., & Mróz, J. (2020). The relationship between basic hope and depression: Forgiveness as a mediator. *Psychiatric Quarterly*, *91*(3), 877–886. https://doi.org/10.1007/s11126-020-09759-w

Kamarck, K. N. (2019). *Diversity, inclusion, and equal opportunity in the armed services: Background and issues for congress*.

Koening, H. (1998). *Handbook of religion and mental health—1st edition*. Academic Press.

Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *ISRN Psychiatry*, *2012*, 278730. https://doi.org/10.5402/2012/278730

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Largent, E. A., & Lynch, H. F. (2017). Paying research participants: Regulatory uncertainty, conceptual confusion, and a path forward. *Yale Journal of Health Policy, Law, and Ethics*,

17(1), 61–141.

LaRocca, M. A., Scogin, F. R., Hilgeman, M. M., Smith, A. J., & Chaplin, W. F. (2018). The impact of posttraumatic growth, transformational leadership, and self-efficacy on PTSD and depression symptom severity among combat Veterans. *Military Psychology*, *30*(2), 162–173. https://doi.org/10.1080/08995605.2018.1425073

Lawler-Row, K. A. (2010). Forgiveness as a mediator of the religiosity-health relationship. *Psychology of Religion and Spirituality*, *2*(1), 1–16.

Mallia, M. (2020). *The effect of religiosity on the coping ability of post-combat service members* [Thesis]. https://baylor-ir.tdl.org/handle/2104/10941

Matud, M. P., López-Curbelo, M., & Fortes, D. (2019). Gender and psychological well-being. *International Journal of Environmental Research and Public Health*, *16*(19), Article 19. https://doi.org/10.3390/ijerph16193531

Mesidor, J. K., & Sly, K. F. (2023). Psychometric properties of the Haitian Creole Brief Religious Coping Scale (RCOPE) with a sample of adult Haitians impacted by the 2010 earthquake. *Journal of Religion and Health*. https://doi.org/10.1007/s10943-023-01853-0

Na, P. J., Schnurr, P. P., & Pietrzak, R. H. (2023). Mental health of U.S. combat veterans by war era: Results from the National health and Resilience in veterans study. *Journal of Psychiatric Research*, *158*, 36–40. https://doi.org/10.1016/j.jpsychires.2022.12.019

National Academies of Sciences, E., Education, D. of B. and S. S. and, Board on Children, Y., Families, C. on the W.-B. of M., Menestrel, S. L., & Kizer, K. W. (2019). Demographic and military service characteristics of military families. In *Strengthening the Military Family Readiness System for a Changing American Society*. National Academies Press (US). https://www.ncbi.nlm.nih.gov/books/NBK547615/

Nadeem, R. (2022, September 13). Modeling the future of religion in America. *Pew Research Center's Religion & Public Life Project*. https://www.pewresearch.org/religion/2022/09/13/modeling-the-future-of-religion-in-america/

Mohammadzadeha, A., & Najafi, A. M. (2018). Factor analysis and validation of the Brief Religious Coping Scale (Brief-RCOPE) in Iranian university students. In *Assessment of Mental Health, Religion and Culture*. Routledge.

Murphy, C. (2016). Women generally are more religious than men, but not everywhere. *Pew Research Center*. https://www.pewresearch.org/short-reads/2016/03/22/women-generally-are-more-religious-than-men-but-not-everywhere/

O'Brien, B., Shrestha, S., Stanley, M. A., Pargament, K. I., Cummings, J., Kunik, M. E., Fletcher, T. L., Cortes, J., Ramsey, D., & Amspoker, A. B. (2019). Positive and negative religious coping as predictors of distress among minority older adults. *International Journal of Geriatric Psychiatry*, *34*(1), 54–59. https://doi.org/10.1002/gps.4983

Paloutzian, R. F., & Park, C. L. (Eds.). (2005). *Handbook of the psychology of religion and spirituality*. Guilford Press.

Pearlin, L. I. (2010). The life course and the stress process: Some conceptual comparisons. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *65B*(2), 207–215. https://doi.org/10.1093/geronb/gbp106

Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The Stress Process. *Journal of Health and Social Behavior*, *22*(4), 337–356. https://doi.org/10.2307/2136676

Palan, S., & Schitter, C. (2018). Prolific.ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, *17*, 22–27.

https://doi.org/10.1016/j.jbef.2017.12.004

Pargament, K., Feuille, M., & Burdzy, D. (2011). The Brief RCOPE: Current psychometric status of a short measure of religious coping. *Religions*, *2*(1), 51–76. https://doi.org/10.3390/rel2010051

Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, *56*(4), 519–543. https://doi.org/10.1002/(SICI)1097-4679(200004)56:4<519::AID-JCLP6>3.0.CO;2-1

Pargament, K. I., H. G. Koenig, and L. M. Perez. (1998). The many methods of religious coping: Development and initial validation of the RCOPE. Paper presented at the Annual Meeting of the American Psychological Association, San Francisco, CA.

Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion*, *37*(4), 710–724. https://doi.org/10.2307/1388152

Pargament, K. I., Tarakeshwar, N., Ellison, C. G., & Wulff, K. M. (2001). Religious coping among the religious: The relationships between religious coping and well-being in a national sample of Presbyterian clergy, elders, and members. *Journal for the Scientific Study of Religion*, *40*(3), 497–513. https://doi.org/10.1111/0021-8294.00073

Park, C. L., Holt, C. L., Le, D., Christie, J., & Williams, B. R. (2018). Positive and negative religious coping styles as prospective predictors of well-being in African Americans. *Psychology of Religion and Spirituality*, *10*(4), 318–326. https://doi.org/10.1037/rel0000124

Park, C. L., Smith, P. H., Lee, S. Y., Mazure, C. M., McKee, S. A., & Hoff, R. (2017). Positive and negative religious/spiritual coping and combat exposure as predictors of posttraumatic

stress and perceived growth in Iraq and Afghanistan veterans. *Psychology of Religion and Spirituality*, *9*(1), 13–20. https://doi.org/10.1037/rel0000086

Pew Research Center. (2018, June 13). *Why do levels of religious observance vary by age and country?* Pew Research Center's Religion & Public Life Project. https://www.pewresearch.org/religion/2018/06/13/why-do-levels-of-religious-observance-vary-by-age-and-country/

Rassoulian, A., Gaiger, A., & Loeffler-Stastka, H. (2021). Gender differences in psychosocial, religious, and spiritual aspects in coping: A cross-sectional study with cancer patients. *Women's Health Reports*, *2*(1), 464–472. https://doi.org/10.1089/whr.2021.0012

Rönkkö, M., & Cho, E. (2022). An updated guideline for assessing discriminant validity. *Organizational Research Methods*, *25*(1), 6–14. https://doi.org/10.1177/1094428120968614

Roothman, B., Kirsten, D. K., & Wissing, M. P. (2003). Gender differences in aspects of psychological well-being. *South African Journal of Psychology*, *33*(4), 212–218. https://doi.org/10.10520/EJC98250

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727.

Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, *51*(2), 663–671. https://doi.org/10.2466/pr0.1982.51.2.663

Siedlecki, S. L., & Bena, J. F. (2021). What you need to know about running and interpreting the *t* test: A guide for the clinical nurse specialist. *Clinical Nurse Specialist*, *35*(2), 56. https://doi.org/10.1097/NUR.0000000000000575

Silverstein, M. W., Dieujuste, N., Kramer, L. B., Lee, D. J., & Weathers, F. W. (2018). Construct

validation of the hybrid model of posttraumatic stress disorder: Distinctiveness of the new symptom clusters. *Journal of Anxiety Disorders*, *54*, 17–23. https://doi.org/10.1016/j.janxdis.2017.12.003

Smith-MacDonald, L., Norris, J. M., Raffin-Bouchal, S., & Sinclair, S. (2017). Spirituality and mental well-being in combat veterans: A systematic review. *Military Medicine*, *182*(11), e1920–e1940. https://doi.org/10.7205/MILMED-D-17-00099

Snow, N. E. (1993). Self-forgiveness. *Journal of Value Inquiry*, *27*, 75-80.

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097. https://doi.org/10.1001/archinte.166.10.1092

Starnino, V. R., Angel, C. T., Sullivan, J. E., Lazarick, D. L., Jaimes, L. D., Cocco, J. P., & Davis, L. W. (2019). Preliminary report on a spiritually-based PTSD intervention for military veterans. *Community Mental Health Journal*, *55*(7), 1114–1119. https://doi.org/10.1007/s10597-019-00414-8

Stone, A. A., Schwartz, J. E., Broderick, J. E., & Deaton, A. (2010). A snapshot of the age distribution of psychological well-being in the United States. *Proceedings of the National Academy of Sciences*, *107*(22), 9985–9990. https://doi.org/10.1073/pnas.1003744107

Sureshchandar, G. S. (2021). Quality 4.0 – a measurement model using the confirmatory factor analysis (CFA) approach. *International Journal of Quality & Reliability Management*, *40*(1), 280–303. https://doi.org/10.1108/IJQRM-06-2021-0172

Thompson, L. Y., Snyder, C. R., Hoffman, L., Michael, S. T., Rasmussen, H. N., Billings, L. S., Heinze, L., Neufeld, J. E., Shorey, H. S., Roberts, J. C., & Roberts, D. E. (2005). Dispositional forgiveness of self, others, and situations. *Journal of Personality*, *73*(2), 313–

359. https://doi.org/10.1111/j.1467-6494.2005.00311.x

Trevino, K. M., Archambault, E., Schuster, J., Richardson, P., & Moye, J. (2012). Religious coping and psychological distress in military veteran cancer survivors. *Journal of Religion and Health*, *51*(1), 87–98. https://doi.org/10.1007/s10943-011-9526-0

Voytenko, V. L., Pargament, K. I., Cowden, R. G., Lemke, A. W., Kurniati, N. M. T., Bechara, A. O., Joynt, S., Tymchenko, S., Khalanskyi, V. V., Shtanko, L., Kocum, M., Korzhov, H., Mathur, M. B., Ho, M. Y., VanderWeele, T. J., & Worthington, E. L. Jr. (2023). Religious coping with interpersonal hurts: Psychosocial correlates of the brief RCOPE in four non-Western countries. *Psychology of Religion and Spirituality*, *15*(1), 43–55. https://doi.org/10.1037/rel0000441.supp

Wang, Z., Liu, H., Yu, H., Wu, Y., Chang, S., & Wang, L. (2017). Associations between occupational stress, burnout and well-being among manufacturing workers: Mediating roles of psychological capital and self-esteem. *BMC Psychiatry*, *17*(1), 364. https://doi.org/10.1186/s12888-017-1533-6

Wang, Y. Y., & Wang, Y. S. (2022). Development and validation of an artificial intelligence anxiety scale: An initial application in predicting motivated learning behavior. *Interactive Learning Environments*, *30*(4), 619–634. https://doi.org/10.1080/10494820.2019.1674887

Westen, D., & Rosenthal, R. (2003). Quantifying construct validity: Two simple measures. *Journal of Personality and Social Psychology*, *84*(3), 608–618. https://doi.org/10.1037/0022-3514.84.3.608

Witte, T. K., Domino, J. L., & Weathers, F. W. (2015). Item order effects in the evaluation of posttraumatic stress disorder symptom structure. *Psychological Assessment*, *27*(3), 852–864. https://doi.org/10.1037/pas0000089

Witvliet, C. V. O., Phipps, K. A., Feldman, M. E., & Beckham, J. C. (2004). Posttraumatic mental and physical health correlates of forgiveness and religious coping in military veterans. *Journal of Traumatic Stress*, *17*(3), 269–273. https://doi.org/10.1023/B:JOTS.0000029270.47848.e5

Yao, S., Chen, J., Yu, X., & Sang, J. (2017). Mediator roles of interpersonal forgiveness and self-forgiveness between self-esteem and subjective well-being. *Current Psychology*, *36*(3),585–592. https://doi.org/10.1007/s12144-016-9447-x

Appendix A

Original 14-item Brief RCOPE Scale

Pargament, K., Feuille, M., & Burdzy, D. (2011). The Brief RCOPE: Current psychometric status of a short measure of religious coping. *Religions*, *2*(1), 51–76. https://doi.org/10.3390/rel2010051

Note: From the original scale, the term "God" was replaced with "Higher Power" to make the scale more inclusive of different belief systems for the current study.

Prompt: Think about how you typically respond to stressful events that you experience. Please indicate the degree to which each of the following strategies applied to you. Responses ranged from 1 (*not at all*) to 4 (*a great deal*).

Positive Religious Coping

1. Looked for a stronger connection with my Higher Power
2. Sought my Higher Power's love and care
3. Sought help from my Higher Power in letting go of my anger
4. Tried to put my plans into action together with my Higher Power
5. Tried to see how my Higher Power might be trying to strengthen me in this situation
6. Asked forgiveness for my sins
7. Focused on religion to stop worrying about my problems

Negative Religious Coping

1. Wondered whether my Higher Power had abandoned me
2. Felt punished by my Higher Power for my lack of devotion
3. Wondered what I did for my Higher Power to punish me
4. Questioned my Higher Power's love for me
5. Wondered whether my church had abandoned me
6. Decided the devil/evil made this happen
7. Questioned the power of my Higher Power

Appendix B

Findings from Study 1: The Adapted, 13-item Brief RCOPE Scale

Prompt: Think about how you typically respond to stressful events that you experience. Please indicate the degree to which each of the following strategies applied to you. Responses ranged from 1 (*not at all*) to 4 (*a great deal*).

Positive Religious Coping

1. Looked for a stronger connection with my Higher Power
2. Sought my Higher Power's love and care
3. Sought help from my Higher Power in letting go of my anger
4. Tried to put my plans into action together with my Higher Power
5. Tried to see how my Higher Power might be trying to strengthen me in this situation
6. Asked forgiveness for my sins
7. Focused on religion to stop worrying about my problems

Negative Religious Coping

1. Wondered whether my Higher Power had abandoned me
2. Felt punished by my Higher Power for my lack of devotion
3. Wondered what I did for my Higher Power to punish me
4. Questioned my Higher Power's love for me
5. Wondered whether my church had abandoned me
6. Questioned the power of my Higher Power