SHAME AND POSTTRAUMATIC STRESS DISORDER IN WOMEN: THE IMPACT OF EVANGELICAL PURITY CULTURE

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ABSTRACT

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Up to 90% of Americans report at least one exposure to a potentially traumatic event, and 10-20% of trauma-affected individuals develop posttraumatic stress disorder (PTSD). Along with symptoms of re-experiencing, avoidance, and alterations in arousal, affective symptoms such as shame and guilt are implicated in both PTSD and complex PTSD (C-PTSD), with shame appearing to play a more prominent role. Socio-cultural context, such as religion, inevitably impacts an individual's experience in the wake of traumatic stress, and an increasingly relevant religious ideology in the United States is fundamentalist evangelicalism. Especially for women, this ideology includes gender-specific "shame conditioning" in the form of purity culture rhetoric. In a sample of trauma-exposed women, the current study tested hypotheses that shame has a stronger influence than guilt in their PTSD and C-PTSD presentations, and that religious fundamentalism and purity culture belief adherence moderated the relationship between shame and PTSD/C-PTSD. Trauma-related shame and trauma-related guilt both predicted PTSD and C-PTSD symptom severity, but contrary to predictions, trauma-related guilt continued to significantly predict PTSD and C-PTSD above and beyond the effect of trauma-related shame. Hypotheses about the potential moderating role of religious fundamentalism and purity culture beliefs in the relationships between trauma-related shame and PTSD/C-PTSD were not

supported. While notable limitations related to technical error, non-clinical high functioning sample, and correlational design limit the generalizability of these findings, the findings align with extant literature emphasizing the benefits of considering trauma-related guilt and trauma-related shame in the conceptualization of posttraumatic stress.

Keywords: PTSD, complex PTSD, shame, religious fundamentalism, evangelicalism, purity culture

CHAPTER ONE: LITERATURE REVIEW

Introduction

People exhibit varied psychological responses after experiencing potentially traumatic events, with most trauma-exposed individuals demonstrating resilience in the wake of trauma exposure (Norris & Sloane, 2007). Research has suggested a broad range of risk factors for the development of standard or complex presentations of posttraumatic stress disorder (PTSD), both of which implicate distressing affective symptoms such as anger, guilt, and shame (Brewin et al., 2000; Van der Kolk et al., 2005). Further, the experience of traumatic stress and its related affective dysfunction may interact with sociocultural variables such as religious values, group identity, and self-concept, which inform an individual's psychological outcomes. Rather than conflating all religious beliefs into a single variable, recent literature has supported the need for evaluating specific religious factors in posttraumatic outcomes and affective symptoms (Keller et al., 2015). Especially in rural areas, fundamentalist evangelicalism is a prevalent ideology in the United States and highly influential to its congregants' behavior, beliefs, and self-concept (Mauro & Joffe, 2007). Specifically, the gender and sexuality socialization of women and girls within evangelical communities, especially via purity culture rhetoric, presents unique implications for women's shame and its role in the development and maintenance of PTSD presentations.

Posttraumatic Stress Disorder

The impact of trauma exposure is ubiquitous, as research has indicated that up to 90% of Americans report experiencing a potentially traumatic event during their lifetime and that repeated exposure to traumatic events is normative in the general population (Kilpatrick et al., 2013). Per the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text*

Revision (DSM-5-TR), a potentially traumatic event is described as experiencing, witnessing, or hearing about "death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence," which includes experiences such as car accidents, physical and sexual assault or abuse, combat exposure, and natural disasters (American Psychiatric Association [APA], 2022, p. 271). Despite most people reporting experiencing one or more traumatic events, most of these trauma-exposed individuals do not develop PTSD; among trauma-exposed individuals, approximately 10-20% develop persistent PTSD symptoms associated with distress and impairment (Norris & Sloane, 2007). Per the current *DSM-5-TR* classification system, the diagnosis of PTSD requires that a trauma-exposed individual must experience unwanted reexperiencing of trauma-related content, effortful avoidance of internal and/or external stimuli reminiscent of the traumatic event, negative alterations in cognition and mood, and alterations in arousal persisting for at least one month (APA, 2022).

While mental health disorders are broadly characterized as causing distress and impairment for those affected, evidence suggests that individuals with PTSD experience more functional impairment and lower quality of life than those with other mental illnesses (Olatunji et al., 2007). More specifically, those with PTSD report experiencing more difficulties in community interactions, activities of daily living, self-care behaviors, and interpersonal functioning, along with reporting lower household income (Jellestad et al., 2021; Sareen et al., 2011). Further, PTSD and posttraumatic stress symptoms have been associated with poor physical health outcomes, with trauma-affected individuals reporting more general physical health complaints, more frequent and more severe pain, and cardiovascular difficulties (Pacella et al., 2013). The PTSD diagnosis, affecting 8.3% of the population during their lifetime (Kilpatrick et al., 2013), often presents alongside additional psychological symptoms and risks

for potentially fatal outcomes. Epidemiologic data indicates that the majority of those with lifetime PTSD meet criteria for at least one other mental health disorder, as those with PTSD are at significantly higher risk for psychiatric comorbidities (Kessler et al., 1995). In addition to high rates of comorbidity, even after adjusting for the effects of commonly co-occurring diagnoses, such as depression and personality disorders, cross-sectional and longitudinal studies have found that PTSD is one of the disorders most strongly associated with suicidal behaviors (Sareen et al., 2005). Further, the experience of posttraumatic stress is dimensional, with even subthreshold PTSD symptoms associated with psychological distress and risk for suicidal ideation after controlling for common comorbidities (Marshall et al., 2001).

Complex PTSD

While the *DSM-5-TR* includes only one PTSD diagnosis to reflect ongoing posttraumatic distress, the *International Classification of Diseases, 11th Revision* (*ICD-11*) includes an additional diagnosis of Complex PTSD (C-PTSD; World Health Organization, 2019). Originally proposed by Herman (1992) and subsequently examined by other scholars in the field, C-PTSD requires an individual to meet the *ICD-11* criteria for PTSD after exposure to one or more traumatic events (re-experiencing the event, deliberately avoiding reminders of the event, and a persistent sense of current, ongoing threat), along with additional symptom domains that reflect the impact of trauma on some individuals' systems of self-organization and occur across contexts (Cloitre et al., 2011). Within C-PTSD, symptoms related to an individual's self-organization can fall within three domains: the affective domain, with symptoms such as emotional dysregulation, violent outbursts, self-destructive behavior, prolonged dissociation, emotional numbing, and anhedonia; the self-concept domain, with symptoms such as negative self-concept, persistent beliefs of the self as diminished, defeated, or worthless, and deep and persistent shame and guilt;

and the domain of interpersonal disturbance, with symptoms such as difficulty sustaining relationships, difficulty achieving emotional intimacy with others, and difficulty with emotional engagement (Cloitre et al., 2011).

While C-PTSD, like PTSD, is not diagnosed based on the nature of traumatic exposure but rather the symptom profile, Courtois (2004) argues that experiences of "complex trauma" increases an individual's risk of meeting criteria for C-PTSD. Courtois (2004) described complex trauma as including interpersonal abuse occurring over extended periods of time during which the traumatized person feels unable to escape. Researchers examining both community and clinical samples have found that the symptom profile of C-PTSD is more commonly observed in the aftermath of chronic interpersonal violence or abuse when compared to other types of traumatic exposure (Van der Kolk et al., 2005). Of note, those with C-PTSD tend to report higher levels of distress in multiple domains of functioning and higher functional impairment than those with standard presentations of PTSD (Cloitre et al., 2013).

To examine the existence of a unique C-PTSD clinical presentation, researchers conducted a latent profile analysis (LPA) with a treatment-seeking sample of interpersonal trauma survivors and found three distinct profiles: PTSD profile, C-PTSD profile, and low overall symptom profile (Cloitre et al., 2013). As hypothesized, chronic trauma exposure strongly predicted the C-PTSD profile, while single-event trauma predicted the PTSD profile, even after controlling for borderline personality disorder comorbidity (Cloitre et al., 2013). Given that C-PTSD symptoms such as interpersonal difficulty, dissociation, impulsive behavior, and negative self-image overlap with symptoms of borderline personality disorder, the researchers conducted an additional latent class analysis (LCA) using archival data of women with a history of child abuse (Cloitre et al., 2014). This analysis provided further support for the

C-PTSD diagnosis despite some overlapping symptom domains, as distinct and stable C-PTSD, borderline personality disorder, and low overall symptom classes emerged (Cloitre et al., 2014).

Those seeking treatment for C-PTSD often respond to gold standard PTSD treatments targeting fear-based cognitive and behavioral mechanisms (such as Cognitive Processing Therapy and Prolonged Exposure), but C-PTSD specialists posit that those with complex presentations of PTSD benefit from using phase-based approaches with interventions tailored to specific symptom sets, often addressing emotional or affective dysregulation as a first line treatment target before conducting exposure interventions (e.g., STAIR Narrative Therapy; Cloitre et al., 2011). Further research indicates that treatment outcomes might be improved by addressing affective symptoms directly during case conceptualization and treatment for both complex and standard PTSD presentations (Saraiya & Lopez-Castro, 2016). Notably, self-blame cognitions, often associated with affective symptoms of shame and guilt, are common residual symptoms that persist in interpersonally traumatized women after completing gold standard PTSD treatments (Larsen et al., 2019). Shame appears to be a particularly salient treatment target for trauma-exposed women, as treatment data indicates that shame (but not guilt) mediated the effects of two PTSD treatment modalities (Ginzberg et al., 2009).

Shame and Guilt

When conceptualizing PTSD, many researchers have focused primarily on the roles of fear and anxiety in the development and maintenance of the diagnosis (Foa et al., 1989). While recognizing the important impact of fear and avoidance in posttraumatic stress, recent meta-analytic data indicate that affective symptoms of shame and guilt play a critical function in the structure of PTSD (Brewin et al., 2000; Lee et al., 2001; Lopez-Castro et al., 2019). Often conflated, several broad similarities exist between the experiences of guilt and shame. In their

comprehensive review, Tangney and Dearing (2002) highlight that both guilt and shame are negatively valanced "self-conscious" emotions, prompting an individual to evaluate the self and guide future behavior in the wake of personal error. In turn, both guilt and shame are proposed to be socially adaptive, morality-related emotions that facilitate learning from one's environment and enacting appropriate, pro-social behavior (Lewis, 1971; Tangney & Dearing, 2002). Beyond these similarities, guilt and shame strongly correlate, often co-occur, and both partly contribute to posttraumatic stress in various populations (Cunningham, 2020; Eisenberg, 2000; Wetterlov et al., 2021). Both shame and guilt have been associated with PTSD symptom severity and proposed to be causally related to maintaining PTSD symptoms (Cunningham et al., 2018; Oktedalen et al., 2015). These symptoms also impact treatment, as guilt and shame specifically can prevent help-seeking behaviors and even impede the effectiveness of PTSD treatment (Andrews et al., 2000; Cunningham, 2020; Ehlers & Steil, 1995). Despite several overlapping attributes, shame and guilt are unique affective experiences that differ in their impact on posttraumatic stress and therefore warrant separate examination (Gilbert, 2003; Lewis, 1971).

Lewis's (1971) early evaluation of the distinction between guilt and shame emphasizes the role of self-related attributions, which has been supported in subsequent studies. Guilt is understood as condemning one's own actions or inactions via specific, unstable attributions (i.e., criticism of one's specific behavior), while shame is associated with global, stable scrutiny (i.e., condemnation of the whole self; Cunningham, 2020; Lewis, 1971; Lindsay-Hartz, 1984; Tangney & Dearing, 2002). Given its association with more specific behavioral attributions, rather than condemnation of one's entire being, guilt is understood as a more transient experience than shame (Tangney et al., 1992). Scholars within this area conclude that the global nature of

self-condemnation related to shame likely explains why shame is more emotionally painful and psychologically impactful than guilt (Gilbert et al., 1994; Tangney & Dearing, 2002).

Guilt and shame also differ in their associated action urges; guilt prompts the desire to repair relationships or reputation via confession, apology, or reparative action, and shame is associated with the urge to hide oneself, escape, or strike back (Tangney & Dearing, 2002). Given the discrepancy in associated action urges, subsequent examinations found that shame's influence on the urge to hide oneself often leads to social isolation, chronic withdrawal behaviors, efforts to conceal sources of shame, and even a desire to die (Lewis, 1988). Conversely, research on guilt supports the conceptualization that guilt promotes pro-social behaviors, as researchers found that guilt negatively predicts concealment urges and behavior and that guilt-proneness (but not shame-proneness) predicts perspective-taking and empathy (Pineles et al., 2006; Tangney & Dearing, 2002; Tangney et al., 2007). Mirroring these differences in action urges, shame demonstrated no relation to the adaptive correlates of guilt and instead broadly predicted worse psychological and even physical outcomes (Dickerson et al., 2004; Wilson et al., 2006).

Many scholarly works on guilt and shame emphasize how inconsistencies in conceptualizing and measuring the two affective states negatively impact the literature base. First, failure to adequately differentiate between guilt and shame (via conflating the two constructs or failing to examine each construct's unique role) can lead to misleading outcomes indicating that guilt and/or shame have no relationship to the variable of interest (Leskela, 2002). However, when examined more closely, it is likely that these "no relationship" findings are due to guilt and shame having opposite effects on the outcome variable or that only guilt or shame is meaningfully associated with the outcome, but the effect is diluted by conflating the two

constructs (Leskela, 2002). Second, measurement-based methodological differences limit the opportunity for aggregating evidence. While many researchers have supported early theoretical conceptualizations of guilt and shame (e.g., Lewis, 1971), others have noted the inherent limitations of examining these affective constructs without precise operational definitions and collective agreement on which specific attributes differentiate the two (Kubany & Watson, 2003). In his review of the literature related to shame and guilt, Blum (2008) notes that even small disagreements in defining the two and differences in other variables of interest have prompted researchers to propose and use new, sometimes contradictory, measurement tools for their projects (Blum, 2008). In turn, when examining the affective symptoms of PTSD, it is critical to specifically measure shame and guilt unique to the individual's traumatic stress (Oktedalen et al., 2014).

Trauma-Related Shame and Guilt. The *DSM-5* expanded the diagnostic criteria of PTSD beyond fear-based anxiety to include a symptom of persistent negative emotional state, such as guilt, shame, and anger, in the negative alterations in cognition and mood symptom cluster (APA, 2013). Several clinical studies have found that trauma-related guilt and shame not only play a vital role in PTSD, but also operate as maintaining factors for posttraumatic stress reactions (Beck et al., 2011; Ehlers & Clark, 2000; Harman & Lee, 2010; Resick et al., 2008). In their examination of a trauma exposed treatment-seeking sample, Aakvaag and colleagues (2016) found that experiences of severe violence are significantly associated with shame and guilt, and each affective symptom separately predicted psychological distress.

Ehlers and Clark (2000) present a cognitive model of PTSD, arguing that PTSD requires an individual to interpret the traumatic event (or the outcome of the traumatic event) in a way that suggests an ongoing, current threat. The model states that the traumatic memory, cognitive

appraisal of the traumatic event, and subsequent distressing symptoms combine and interact to create this sense of sustained threat (Ehlers & Clark, 2000). The trauma-related threat can be external (such as assuming the world is inherently dangerous), which often leads to fear and avoidance, and it can also be internal, such as viewing oneself as inferior, inadequate, and inherently flawed (Ehlers & Clark, 2000). Further, social-cognitive models of PTSD emphasize self-condemning appraisals about the self after the traumatic event leads to ongoing self-blame cognitions, serving as a vital link between exposure to a traumatic event and developing PTSD (Ehlers & Clark, 2000; Resick & Schnicke, 1992).

Regarding theoretical conceptualizations of the role of guilt and shame in PTSD, Harman & Lee (2010) draw parallels between this self-condemning interpretation of internal threat and the experience of shame, highlighting how the continuous self-criticism characteristic of shame emboldens this sense of internal threat, thus increasing the relationship between shame and PTSD (Lee et al., 2001). On the other hand, some consider the cognitive model of PTSD to be fueled by diffuse distress and persistent guilt-related cognitions related to responsibility, value violation, and assumptions about one's own failure in preventing the event prompting recurrent unwanted traumatic memories (Kubany & Watson, 2003). The literature base, however, paints a nuanced picture of how trauma-related shame and guilt operate in PTSD presentations.

Aligning with Ehlers and Clark's (2000) cognitive model of PTSD, trauma-related shame is understood as both cognitive and affective in nature, stemming from a conflict between an individual's self-perception and interpretation of a traumatic event, and intensified if the individual's perception of the traumatic event affirms negative beliefs about the self (Lee et al., 2001; Stone, 1992). Some authors have proposed that interpersonally traumatizing events, coupled with self-condemning interpretations of the event, induce shame, which can be

intensified by other PTSD symptoms such as social avoidance (Lewis, 2008; Stone, 1992). Thus, shame operates as a cyclical maintaining factor of posttraumatic stress symptoms (Stone, 1992).

Indeed, several examinations indicate that trauma-related shame is associated with immediate-onset PTSD symptoms and the maintenance of PTSD symptoms over time (Andrews et al., 2000; Andrews et al., 2008). Several studies indicate that self-blaming cognitions after exposure to a traumatic event predict developing PTSD, even after controlling for established risk factors (Ehring et al., 2008), with one examination finding that the relationship between self-blame and PTSD symptomatology is mediated by shame specifically (Feiring et al., 2002). Further, shame has been found to maintain PTSD symptoms through its associated action urge of avoidance, as avoidance of trauma cues inhibits effective emotional processing of the event, inhibits new learning opportunities, and prevents access to social supports, contributing to a strong sense of relationship disconnectedness in trauma-exposed individuals (Dorahy, 2010; Joseph et al., 1997; Lee et al., 2001).

On the other hand, providing support for Kubany and Watson's (2003) conception of a guilt-fueled cognitive model of PTSD, trauma-related guilt demonstrates associations with both PTSD symptom severity and depression symptoms in trauma-exposed individuals (Beck et al., 2011; Browne et al., 2015). However, Pugh and colleagues' (2015) comprehensive review of the relationship between guilt and PTSD yields mixed findings ranging from a positive association, a negative association, and no relationship whatsoever, noting that trauma-related guilt is more prevalent in trauma-affected veterans than in civilians exposed to interpersonal trauma. The researchers note that many of the investigations associating guilt and PTSD did not account for shame and conclude that given shame's unique contributions to PTSD severity, it is possible that the associations between guilt and PTSD are simply artifactual (Pugh et al., 2015).

Shame Accounting for Guilt in PTSD. Bannister and colleagues (2019) conducted an examination to determine the respective impact of shame and guilt on PTSD presentations. Like previous work by Cunningham et al. (2018), the researchers found that while the subcategory of guilt-related distress predicted PTSD symptom severity alongside shame, shame accounted for notable variance above and beyond the effects of guilt-related distress. Examining group differences in levels of shame and guilt (high versus low), the researchers discovered that 0% of participants fell within the high-guilt/low-shame group (Bannister et al., 2019). The absence of a "shame-free guilt group" supports Tangney and colleagues' (2007) assertion that guilt becomes maladaptive when fused with shame, or it suggests that shame and guilt simply co-occur in the context of PTSD (Bannister et al., 2019).

As Pugh et al. (2015) noted, many studies indicating a relationship between guilt and PTSD fail to account for the effects of shame. Indeed, effects of guilt tend to disappear when researchers control for shame, characterizing shame as a suppressor variable in the guilt/PTSD relationship (Leskela et al., 2002; Semb et al., 2011). Further, trauma-related shame has been found to mediate the relationship between trauma-related guilt and PTSD in a treatment-seeking sample of participants with comorbid PTSD and substance use disorders, with no evidence of guilt influencing PTSD without the influence of shame (Held et al., 2015).

Shame appears to have an even more prominent role in complex presentations of PTSD, while guilt does not demonstrate the same pattern within this population. While both state and trait shame predict C-PTSD, guilt did not emerge as a significant predictor (Dorahy et al., 2013). Higher PTSD severity and trauma-related shame are associated with both repeated trauma exposure and interpersonal index trauma, both characteristics of traumatic stress that often predict C-PTSD presentations (La Bash & Papa, 2014). Both chronic traumatic exposure and

interpersonal traumatic exposure predict frequent self-blaming (or "self-attacking") cognitions, increased PTSD symptom severity, and higher levels of shame (Dyer et al., 2017; Ford et al., 2006; Green et al., 2000; Harman & Lee, 2010; La Bash & Papa, 2014).

Religious Fundamentalism

The presentation of posttraumatic stress is inevitably influenced by environmental factors, such as social and cultural context. A particularly potent influence is religion, as individuals' lives are impacted by religious influence from the macro-level (i.e., religiously informed legislation at the national level) to the micro-level (i.e., internalized messages about one's worth and salvation; Glass, 2019). This widespread social influence interacts with one's religious affiliation, socialization, and personal belief system to inform how they interpret traumatic events and cope in the wake of trauma exposure (Park, 2005; Walker et al., 2021). While adaptive forms of religious coping can facilitate healing from adversity, struggling to reconcile one's religious beliefs with one's interpretation of their traumatic exposure has been linked to the development of posttraumatic stress symptoms (Gerber et al., 2011; Leo et al.,2021; Wortmann et al., 2017). Religious beliefs and group affiliations in the United States are incredibly heterogeneous and yield mixed or contradictory outcomes on similar measures of psychological health, limiting the generalizability of inferences made when measuring general religiosity (Allport, 1979; Murray et al., 2007). This emphasizes the importance of examining specific aspects or fields of religious involvement or belief to obtain meaningful data.

Religious fundamentalism (RF), as studied by Altemeyer and Hunsberger (2004), is a relevant American religious ideology characterized by four main tenants. First, there exists one set of religious teachings that contains the essential and perfect truth about humanity and God, and that truth is constantly under attack by an identifiable force of evil (i.e., Satan and his

influence in the secular world), which must be vigorously fought by true believers. Religious fundamentalists believe that this truth must be interpreted literally and followed today according to the unchangeable doctrines of the past, and that those who follow these teachings satisfactorily will reap eternal rewards in the afterlife while those who do not will be damned to eternal suffering (Altemeyer & Hunsberger, 2004).

Fundamentalist religious belief underlies the teachings and culture of some of the most prominent religious groups in the United States, with most American religious fundamentalists identifying as "evangelical" or "born-again," or simply identifying with their church affiliation, such as Southern Baptist (Mauro & Joffe, 2007). According to recent polls, approximately 36% of Americans identify as "evangelical" or "born again" in Jesus Christ (Gallup, 2021). Evangelical Protestant beliefs differ from non-evangelical beliefs based on their binary categorization of individuals either being "saved" or "unsaved," requirement of converting others to their own beliefs of salvation, and emphasis on the absolute authority of God as understood through literal interpretations of Biblical text (Bebbington, 2003; Lewis & Pierard, 2014).

Extant literature on evangelical religious fundamentalism highlights its consistent correlation with cognitive rigidity, exhibited through biblical literalism and "all-or-nothing" approaches to evaluating moral or appropriate behavior (Jackson & Hunsberger, 1999; Johnson et al., 2011). Cognitive inflexibility regarding traumatic attributions has been found to predict severity above and beyond other known predictors, while a relationship between cognitive rigidity and shame has also been established (Joseph & Gray, 2011; Zarei et al., 2018). Beyond psychological vulnerabilities, rigid ideology and expectations for appropriate beliefs and behavior likely contribute to the orientation toward strict and clearly delineated gendered social hierarchy endorsed by many fundamentalist evangelicals. Rigidity and literal interpretations of

the Bible are associated with a clearly mandated power structure within the family and community, where the man is the unquestioned, final authority while women are expected to be submissive – a context likely conducive to abusive dynamics and, in turn, higher rates of interpersonal abuse and poorer psychological outcomes (Mahoney et al., 2001; Nason-Clark, 2000). Pervasive sexism within fundamentalist evangelical groups is well-documented, which might contextualize the findings that, within evangelical communities, being a woman positively predicts personal shame (Helm et al., 2001). Further, evidence suggests that as women's adherence to fundamentalist religiosity increases, sense of personal pride decreases, while the opposite is true for men (Helm et al., 2001).

Purity Culture. Even while fundamentalist evangelical belief systems often promote divinely mandated, traditional gender roles, which rely upon the submission and subjugation of women and girls, women still comprise over half America's evangelical population (Etengoff & Lefevor, 2021; Pew Research Center, 2015). Traditional gender roles emphasizing patriarchal control, such as exclusive male authority in the church and household as well as the delegation of women to "supporting" roles, are both modeled and explicitly taught in the conservative evangelical church from an early age (Padgett, 2008).

A recent gender-specific socialization method within the evangelical church introduced in the 1990s and 2000s is purity culture, which relies upon biblical literalism to teach and enforce traditional gender roles for girls and women, specifically surrounding pre-marital sexual purity (Ortiz, 2019; Owens et al., 2020). Purity culture teachings are implemented in childhood and adolescence, providing concrete methods of obtaining external validation from religious authorities and instilling rigid beliefs about sexuality and gender roles during this critical developmental period (Moslener, 2015). Purity culture principles were also introduced to youth

in the general public, especially within conservative states, via an influx of widespread federal funding for Abstinence-Only-Until-Marriage campaigns to replace comprehensive sexual education in public schools during the 1990s and early 2000s (Bailey & Wolf, 2015).

Scholarly examination of purity culture has only recently emerged, with Ortiz (2019) introducing a measure of purity culture based upon seven commonly identified themes within psychological literature, as well as personal accounts from those exposed. These themes include (1) a sexual double standard enforced for girls and women exclusively, mirroring the traditional sexual script that girls and women do not experience intrinsic sexual desire and that (2) girls and women are expected to assume a gatekeeping role for sexual activity (Ortiz, 2019). Another theme (3) characterizes boys and men as intrinsically lustful and unable to control themselves sexually, so (4) girls and women are taught to enact their role as sexual gatekeeper by embracing extreme modesty to avoid tempting boys and men into sexually forceful behavior. A common theme, exclusively for girls, is (5) protecting virginity as a gift to exchange for a godly husband and happy marriage. In emphasizing purity for girls and women, these teachings invoke (6) benevolent sexism, or the concept that women are pure, weak, and in need of male protection and guidance (Glicke & Fiske, 2001). Importantly, the final theme of purity culture as proposed by Ortiz (2019) is (7) an all-or-nothing conceptualization of sexual activity and purity. Purity culture teaches girls about sexual purity with various objectifying contamination metaphors, like comparing girls perceived to be sexually impure to dirty toothbrushes removed from their packaging, flowers with the petals ripped off, and pre-chewed chewing gum (Fahs, 2010; Gish, 2018; Ortiz, 2019).

Purity culture reinforces the role of women and girls as second-class citizens and has been described as shame-inducing regarding one's own body, sexuality, and gender expectations

in some accounts of women's involvement with purity culture teachings within the church (Barker & Galliher, 2017; Daniluk, 1993). Specifically, purity culture materials intended for evangelical girls and women normalize sexual assault and attribute sexual violence to women's immodesty provoking uncontrollable male desire (Klement & Sagarin, 2017; Moon & Reger, 2014). At the same time, while women's rates of sexual victimization and interpersonal trauma exposure are already higher than men, evidence suggests that fundamentalist religious environments are conducive to an even higher likelihood of sexual violence against women (Barker & Galliher, 2017; Giovannelli & Jackson, 2013; Owens et al., 2021; Sheldon & Parent, 2002). Further, purity culture belief endorsement has been found to positively predict rape myth endorsement and negatively predict accurate identification of rape, which might be informed by purity-based religious teachings that invoke shame and self-blame for women and girls, especially those who experience sexual violence (Owens et al., 2021). Given that purity culture is a mechanism through which young evangelical women are taught to differentiate moral versus immoral thoughts and behaviors, shame may be especially salient. Internalized sexism learned during a critical developmental period, along with inadequate sexual education and invalidating messages about sexual and interpersonal violence, likely contribute to global, condemning beliefs about the self (e.g., increased shame) among women involved in the evangelical community and, in turn, might be expected to predict worse posttraumatic outcomes (Dworkin et al., 2017).

Given the strong support for the relationships between trauma-related guilt, and especially trauma-related shame, in the development and maintenance of PTSD, it is important to examine these relationships with more nuance and consider contextual variables that may influence these associations. Guilt and shame are associated with the rigid belief system of

religious fundamentalism and purity culture, especially among young women. However, the roles of evangelicalism and purity culture beliefs have not been specifically examined in the context of PTSD. The current study will evaluate the role of trauma-related shame in PTSD and-PTSD symptomatology in a trauma-exposed sample of undergraduate women at a rural Southeastern American university, and how religious fundamentalism and purity culture beliefs affect the relationship between trauma-related shame and posttraumatic stress symptoms.

Hypotheses

Given the literature regarding PTSD and C-PTSD, posttraumatic affective symptoms, and evangelical fundamentalism in women, I proposed a series of hypotheses:

Hypothesis 1a: Trauma-related shame and trauma-related guilt would predict PTSD symptom severity.

Hypothesis 1b: Trauma-related shame and trauma-related guilt would predict C-PTSD symptom severity.

Hypothesis 2a: After controlling for trauma-related shame, trauma-related guilt would **not** significantly predict PTSD symptom severity.

Hypothesis 2b: After controlling for trauma-related shame, trauma-related guilt would **not** significantly predict C-PTSD symptom severity.

Hypothesis 3a: Fundamentalist religious belief adherence would moderate the relationship between trauma-related shame and PTSD symptom severity.

Hypothesis 3b: Fundamentalist religious belief adherence would moderate the relationship between trauma-related shame and C-PTSD symptom severity.

Hypothesis 4a: Evangelical purity culture belief adherence would moderate the relationship between trauma-related shame and PTSD symptom severity.

Hypothesis 4b: Evangelical purity culture belief adherence would moderate the relationship between trauma-related shame and C-PTSD symptom severity.

CHAPTER TWO: PRESENT STUDY

Method

Procedure

Recruitment and Data Collection. Following Institutional Review Board (IRB; Western Carolina University) approval, participants were recruited using SONA, an online platform for study management. Participants were undergraduate students enrolled in General Psychology, and they received course credit for completing the survey. No identifying information was requested from participants, and computer servers retaining data were password-protected to ensure privacy. Given the unique implications of self-identified gender and/or perceived gender in posttraumatic stress symptomatology, shame, and evangelical religious factors, analyses were restricted to participants who identified as women (cisgender or transgender) and any individuals who were assigned female at birth (AFAB; Barr et al., 2022; Olff, 2017). The study on SONA specified the inclusion criteria, stating that the researchers sought the participation of "Women and/or AFAB Only."

After selecting the current study on the SONA platform, participants were directed to an online survey hosted by Qualtrics. Before seeing any survey items, an informed consent form was provided that described basic information about the purpose of the research, a general description of the themes of the survey content and nature of survey items, the risks and benefits of participating, referrals to educational content/support services if distressed by the survey content, and contact information of the researchers. Participants who selected "no" to the item requesting their consent to participation were directed to the final page of the study and did not view any survey items, and those who selected "yes" proceeded to the first page of survey items and could proceed to the end of the survey. At the end of the survey, participants were again

provided with referrals to educational content and support services if desired. While support resources were provided, evidence suggests that participating in quantitative research about traumatic exposures does not evoke strong negative emotions or prompt psychological distress (Jaffe et al., 2015).

Participants

Participants recruited were undergraduate students at a regional public university in the southeastern United States. An *a priori* power analysis using G*Power software indicated that a total sample of 119 was appropriate for the proposed analyses, based on an effect size of 0.25, an alpha level of 0.05, and a power of 0.90 (Faul et al., 2007). Only individuals who were 18 years or older, identified their gender as "woman" and/or identified their sex as "female," and endorsed experiencing a potentially traumatic event per the *DSM-5-TR* were included in analyses. To account for potential missing data and missing and/or ineligible gender demographics, along with anticipating approximately 59% of college students would report exposure to a potentially traumatic event (based on previous data collection at this institution), a total of 398 submission were accepted.

Of these 398 submissions, five were identified as duplicates. For these cases, only each participant's primary submission was retained (n = 393). An additional 16 cases were identified as missing all measures except demographic information and removed from the dataset (n = 377). Gender identity and sex assigned at birth variables were then dummy-coded and reviewed to identify 351 participants who met inclusion criteria (310 who identified their sex as female and gender as woman, 23 who identified their sex as female and gender as non-binary, nine who identified their sex as male and gender as woman, and nine who identify their sex as female and gender as man). In turn, 26 cases were identified as ineligible and removed (21 who identified as

their sex as male and gender as man, four who identified their sex as male and gender as non-binary, and one who identified their sex as intersex and gender as non-binary).

Inclusion criterion regarding trauma exposure were conducted independently of gender identity inclusion criteria. Thus, all 377 cases were screened for exposure to a potentially traumatic event using the LEC-5. Of the participants who indicated trauma exposure by endorsing "happened to me," "witnessed it," "learned about it," "part of my job," or "not sure" to one or more of the 17 potentially traumatic events listed, two graduate student researchers independently reviewed each participant's brief description of their index event experienced and identified whether the experience constituted a Criterion A trauma per *DSM-5-TR* criteria. Responses were compared between the two reviewers, resulting in 85.9% agreement. Conflicting responses were then coded by a third reviewer, who determined the final count of trauma-exposed (n = 232, 61.5%) versus non-trauma-exposed (n = 145, 38.5%) participants. Of the 232 trauma-exposed participants, 219 (94.4%) met gender/sex inclusion criteria (58.1% of the total 377 cases). These 219 participants were retained for primary analyses.

Measures

Demographic Survey. Participants completed a brief demographic questionnaire assessing age, gender identity, sex assigned at birth, race, ethnicity, sexual orientation, relationship status, region of origin, church denomination, frequency of church attendance, importance of religion, and current and past religiosity.

Life Events Checklist for DSM-5: Extended Version. The Life Events Checklist for DSM-5: Extended Version (LEC-5; Weathers et al., 2013a) is a self-report measure designed to screen for lifetime exposure to potentially traumatic events. Participants responded to 16 brief descriptions of stressful life events known to potentially result in PTSD symptoms or distress, as

well as an additional item assessing any other extraordinarily stressful event not captured in the first 16 items. For each item, participants indicated the nature of their exposure (Happened to me; Witnessed it; Learned about it; Part of my job; Not sure; Doesn't apply). Participants were then asked to briefly describe the worst, currently most distressing event and indicate how long ago the event occurred, how many times they experienced a similar event, the nature of their exposure, whether the event (if related to death of a loved one) was accidental or violent, and whether the event involved life endangerment, serious injury, death, and/or sexual violence. The measure is used as a screening tool and does not yield a total or composite score.

PTSD Checklist for DSM-5. PTSD symptom severity was measured using the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013b). The PCL-5 is a 20-item self-report measure that assesses the 20 symptoms of PTSD experienced within the past month as described in the *DSM-5*. Participants responded to each item on a scale from zero (Not at all) to four (Extremely) in response to their identified index trauma, as indicated on the LEC-5. PTSD severity score is obtained by summing the total of all responses, with possible scores ranging from zero to 80, with a score of 33 or greater indicating probable PTSD (Bovin et al., 2016). The PCL-5 is a commonly used measure that demonstrates strong internal consistency (Cronbach's α = .94) and convergent and divergent validity (Blevins et al., 2015). In the present study, the PCL-5 demonstrated strong internal consistency (Cronbach's α = .94).

International Trauma Questionnaire. C-PTSD symptom severity, as described in the *ICD-11*, was measured using the International Trauma Questionnaire (ITQ; Cloitre et al., 2018). The ITQ is a 12-item measure completed in response to each participant's index trauma (as identified on the LEC-5), with six of the items measuring PTSD symptoms (re-experiencing, avoidance, and current sense of threat) and six items measuring C-PTSD symptoms related to

disturbances in self-organization (affective dysregulation, negative self-concept, disturbances in interpersonal relationships). Participants were asked to indicate responses, based on symptoms present within the last month, on a five-point scale ranging from 0 (Not at all) to 4 (Extremely). Total C-PTSD severity score is obtained by summing all responses, with possible scores ranging from zero to 48. A recent psychometric review of the ITQ indicated that the measure demonstrates good internal consistency, with alphas ranging from .89 to .94, and performs similarly to the PCL-5 in terms of reliability, magnitude, and measuring clinical change (Cloitre et al., 2021).

In the present study, an error was identified in which one item from the ITQ (DSO item "I feel worthless") was not shown to participants due to technical error. The item was not able to be estimated using missing values estimation because there were no data present for any participants. Thus, the total ITQ in the present study consisted of the sum total of the 11 items. The modified ITQ demonstrated satisfactory internal consistency (Cronbach's α = .89), and it had a modified possible range of 0-44.

Trauma-Related Shame Inventory. Trauma-related shame was measured using the Trauma-Related Shame Inventory (TRSI-24; Oktedalen et al., 2014). The TRSI-24 is a 24-item scale, measuring both internal and external shame experiences using the following four categories: internal condemnation, internal affective-behavioral, external condemnation, and external affective-behavioral. Participants are asked to respond to each item on a four-point scale, with responses ranging from one (Not true of me) to four (Completely true of me). All responses are summed to generate a total shame severity score (range 24-96). The TRSI-24 has yielded both generalizability and dependability coefficients of .87 (Oktedalen et al., 2014). Further, the TRSI-24 has been found to effectively measure shame as distinct from guilt, with a

generalizability coefficient of .81 for difference scores between the TRSI and a guilt cognition scale (Oktedalen et al., 2014).

In the present study, an error was identified during the administration of this scale for all participants. Six intended items (item 5, "As a result of my traumatic experience, I cannot accept myself;" item 20, "My traumatic experience has revealed a part of me that I am ashamed of;" item 21, "As a result of my traumatic experience, I don't like myself;" item 22, "If others knew how I felt during my traumatic experience, they would be ashamed of me;" item 23, "Because of what happened to me, I am disgusted with myself;" and item 24, "I am so ashamed of what happened to me that I sometimes want to be invisible to others") were inadvertently omitted from the survey due to technical error, which resulted in an incomplete assessment of trauma-related shame. Given the extent of missing data, it was not appropriate to try to estimate item-level missing data for all participants on this measure. Therefore, a total score was calculated using the 18 available items. Despite the omission, the current study's limited TRSI scale demonstrated strong internal consistency (Cronbach's α = .96). The measure had a modified possible range of 18-72. However, the limited scale inevitably lacks the psychometric properties as measured by previous studies and cannot be assumed to fully capture all dimensions of trauma-related shame. Given the missing items covered multiple subscales, it was not possible to use the short-form version (Grau et al., 2021) of the scale or rely on specific subscales.

Trauma-Related Guilt Inventory. Trauma-related guilt was measured using the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996). The TRGI is a 32-item scale measuring five component subscales: global guilt, distress, hindsight-bias/responsibility, wrongdoing, and lack of justification. Five items are reverse scored. Participants responded to each item on a five-point scale, with responses ranging from one (Never/not at all true) to five

(Always/extremely true), with each response summed to create a total guilt severity score (range = 32-160). The TRGI demonstrates satisfactory internal consistency (α = .86) and acceptable short term temporal stability ranging from .73 to .86 (Kubany et al., 1996).

In the current study, one item of the TRGI was repeated, resulting in only 31 unique items. One item was inadvertently omitted due to technical error (item 25, "Overall, how guilty do you feel about the event(s)?"). A total score of the remaining 31 items was used with modified total score (range = 31-155). Good internal consistency was demonstrated in the current study (Cronbach's α = .90).

Revised Religious Fundamentalism Scale. Fundamentalist religious beliefs were measured using the Revised Religious Fundamentalism scale (RRF; Altemeyer & Hunsberger, 2004). The RRF is a 12-item scale where participants respond to a series of statements with their level of agreement, ranging from -4 (Very strongly disagree) to +4 (Very strongly agree), with zero indicating a purely neutral stance. Six items are reverse scored. Responses are summed to create a total score, with higher scores indicating higher fundamentalist belief adherence. Previous evaluations of the RRF were conducted and compared to the original 20-item Religious Fundamentalism measure, with the RRF demonstrating comparable, satisfactory internal consistency with a sample of undergraduate students and their parents (α = .91; Altemeyer & Hunsberger, 2004). Further, the RRF demonstrated satisfactory convergent validity, as the revised scale yielded correlations with dogmatism, right-wing authoritarianism, and religious service attendance similarly to the original scale (Altemeyer & Hunsberger, 2004). A recent study with a diverse MTurk sample comprised of both religious and non-religious participants demonstrated similar internal consistency (α = .96; Warlick et al., 2017). In the present study, the RRF demonstrated strong internal consistency (Cronbach's α = .94).

Purity Culture Beliefs Scale. Adherence to beliefs related to evangelical purity culture was measured using the Purity Culture Beliefs Scale (PCBS; Ortiz, 2018). The PCBS is a 24-item scale, requiring participants to respond to a series of statements on a five-point scale ranging from one (Strongly disagree) to five (Strongly agree). Four of the items are indicated to be used as control items and are not used in the calculation of the total score. The scale is comprised of three components: shame and guilt, gender roles, and idealization. Prior psychometric evaluation of the PCBS have yielded adequate internal consistency for each component (α = .83-.85) and satisfactory internal consistency for the overall scale (α = .90). Further, the PCBS demonstrated convergent validity with anticipated covariates such as the constructs of complementary gender differentiation (r = .37), heterosexual intimacy (r = .32), and hostile sexism (r = .41) subscales in Ambivalent Sexism Inventory (Ortiz, 2018). In the present study, the 20-item PCBS demonstrated good internal consistency (Cronbach's α = .90). See Appendix A for all scales.

Data Analysis

Data were downloaded securely from the Qualtrics application, and all data preparation and analyses were conducted using IBM's Statistical Package for the Social Sciences (SPSS) version 28 software. New items were created to reflect reverse scores, and total and subscale scores were calculated for each variable of interest. Data were screened for missingness, and list-wise deletion was performed as appropriate for duplicate cases. Missing Values Analysis (MVA) was conducted with SPSS to determine whether missing data was missing completely at random (MCAR). This analysis yielded a Little's MCAR variable of 1825.6, p = .97. This does not account for systematic missing data (see above for description of items missing from all participants due to survey errors), and thus this only assessed item-level missing data. For the

PCL-5, there were no missing items. For the ITQ, two participants were missing all 18 items included. For the TRSI, one participant was missing three items, and five participants were missing all 18 items included. For the TRGI, four participants were missing one item, one participant was missing 29 items, and seven participants were missing all 32 items. For the RRF, one participant was missing one item, one participant was missing two items, one participant was missing three items, and eight participants were missing all 12 items. For the PCBS, one participant was missing two items, and seven participants were missing all 24 items included. Missing values were estimated using EM estimation for individual item-level missing data (i.e., not systemically missing data) for participants missing <20% of the items for that measure. Values were not estimated for individuals missing more than 20% of the items on a measure, and thus were listwise deleted from analyses using those measures.

Means and standard deviations were calculated for variables of interest, and histograms were generated and visually reviewed to assess for normality. Skewness and kurtosis variables were generated for variables of interest. Skewness values for all variables fell within +/- 2 and kurtosis values fell within +/-7, which are considered within normal range (Tabachnick & Fidel, 2007). Data were also reviewed to ensure the data did not violate the assumptions of linearity and residual normality. Before conducting primary analyses, Pearson bivariate correlations were conducted among all variables of interest to examine interrelations.

Then, a series of regression-based analyses were conducted to test hypotheses. To test hypothesis 1a, trauma-related shame and trauma-related guilt were entered as predictor variables and PTSD symptom severity was entered as the outcome variable. For hypothesis 1b, trauma-related shame and trauma-related guilt were entered as predictor variables with C-PTSD symptom severity entered as the outcome variable.

Hierarchical regressions were used to test hypotheses 2a and 2b. For hypothesis 2a, trauma-related shame was entered in step 1 of the analysis to control for the effects of trauma-related shame on the outcome variable, PTSD severity. Then, trauma-related guilt was entered in step 2 of the analysis to determine whether trauma-related guilt significantly predicted PTSD severity above and beyond the effects of trauma-related shame. For hypotheses 2b, the same analyses were conducted with C-PTSD as the outcome variable.

Prior to testing the potential moderation effects, the relationships between the predictors, moderators, and outcomes were examined. First, linear regressions were used to examine the relationships between (a) predictor variable and outcome variable and (b) moderator variable and outcome variable. For example, linear regressions were conducted to assess the relationships between trauma-related shame (predictor variable) and PTSD symptom severity (outcome variable), and between religious fundamentalism (moderator) and PTSD symptom severity (outcome variable). Linear regressions were completed for each predictor variable (trauma-related shame) with each outcome variable (PTSD symptom severity and C-PTSD symptom severity) and for each moderator variable (religious fundamentalism and purity culture belief adherence) and outcome variable (PTSD symptom severity and C-PTSD symptom severity) combination.

Moderation analyses using the PROCESS macro were also conducted to test hypotheses related to the impact of religious fundamentalism and purity culture belief adherence. For hypotheses 3a and 3b, trauma-related shame total score was examined as the predictor variable and religious fundamentalism total score was specified as the moderator variable. The outcome was PTSD symptom severity (3a) and C-PTSD symptom severity (3b). For hypotheses 4a and 4b, trauma-related shame total score was examined as the predictor variable and purity belief

adherence total score was specified as the moderator variable. The outcome was PTSD symptom severity (4a) and C-PTSD symptom severity (4b). Standardized coefficients were interpreted. Mean and +/- 1 standard deviation of the moderator variable were graphed.

CHAPTER THREE: RESULTS

Sample Characteristics

After removing participants who did not meet inclusion criteria for gender identity and/or sex assigned at birth, the final overall sample was 351. Participants were 85.5% White/Caucasian (*n* = 300), 10.8% Black/African American (*n* = 38), and 11.4% Hispanic/Latine (*n* = 40), and 61% identified as straight/heterosexual (*n* = 214), with 28.8% identifying as bisexual or pansexual (*n* = 101). In the overall sample, participants ranged in age from 18 to 51 (*M* = 18.91, *SD* = 2.24), and 56.1% of the sample identified as Christian (*n* = 197). Of the Christian participants in the overall sample, 23.9% identified as evangelical (*n* = 47), and most Christian participants identified their denomination as Baptist (*n* = 75) or non-denominational (*n* = 46).

After removing participants who did not report a history of trauma exposure, 219 (62.4%) trauma-exposed participants comprised the final sample. Trauma-exposed participants ranged in age from 18 to 51, with a mean age of 18.87 (*SD* = 2.49), and 86.3% identified as White/Caucasian (*n* = 189), 9.1% as Black/African American (*n* = 20), and 14.2% as Hispanic/Latine (*n* = 31). Participants identified primarily as straight/heterosexual (58%, *n* = 127) and bisexual or pansexual (31.1%, *n* = 68). Among the final trauma-exposed sample, 112 participants identified as Christian (51.1%), with 29 of the Christian participants identifying as evangelical (25.9%). Similar to the overall sample, trauma-exposed Christian participants were also most likely to report their denomination as Baptist (*n* = 40) or non-denominational (*n* = 25). See Table 1 for detailed demographic information about the overall sample, non-trauma-exposed participants, and trauma-exposed final sample. The most commonly reported traumatic exposure types were transportation accidents (*n* = 192), unwanted or uncomfortable sexual experiences (*n*

= 178), and natural disasters (n = 176). Frequencies of all reported traumatic exposures are provided in Table 2.

Preliminary Data Analyses

Means, standard deviations, range, skew, and kurtosis were generated for PCL-5 total score, ITQ total score, TRSI total score, TRGI total score, RRF total score, and PCBS total score, which are presented in Table 3. Additionally, all variables were examined for bivariate correlations, which are presented in Table 4. Independent samples t-test analyses were conducted to examine any differences between trauma-exposed participants and participants who did not report experiencing a trauma exposure. Analyses were conducted with participants who met the inclusion criteria for gender identity/sex assigned at birth (n = 377). Regarding RRF, there was no significant difference between trauma-exposed participants (M = -13.21, SD = 23.96) and participants who were not trauma-exposed (M = -8.18, SD = 23.61), $t(336) = 1.85$, $p = .07$. Similarly, there was no significant difference between trauma-exposed participants (M = 31.06, SD = 11.18) and participants who were not trauma-exposed (M = 31.81, SD = 13.39) on the PCBS, $t(340) = .56$, $p = .58$. Differences were not examined for PTSD symptom severity, C-PTSD symptom severity, trauma-related guilt, and trauma-related because these constructs and measures require at least one potentially traumatic event.

Within the final trauma-exposed sample, independent samples t-test analyses were conducted to examine differences in sociocultural variables based on evangelical identity (determined by a yes or no response to the demographic item, “As a Christian, do you currently identify as evangelical?”). This item was only shown to participants who identified having a Christian religious identity. Self-identified evangelical Christians reported significantly higher RRF (M = 15.79, SD = 18.26) compared to non-evangelical Christians (M = -1.32, SD = 16.18),

$t(93) = 4.56$, $p < .001$, Cohen's $d = 1.11$, indicating a large effect size. However, self-identified evangelical Christians did not report significantly higher PCBS ($M = 40.17$, $SD = 12.38$) compared to non-evangelical Christians ($M = 35.47$, $SD = 11.02$), $t(95) = 1.85$, $p = .07$.

Regression Analyses

A series of regression-based analyses were then conducted to test hypotheses. To test hypothesis 1a, trauma-related shame and trauma-related guilt were entered as simultaneous predictor variables and PTSD symptom severity was entered as the outcome variable. Trauma-related shame and trauma-related guilt significant predicted PTSD symptom severity, $R^2 = .50$, $F(2, 206) = 103.12$, $p < .001$, with $\beta = .31$ ($p < .001$) for trauma-related shame and $\beta = .45$ ($p < .001$) for trauma-related guilt. To test hypothesis 1b, trauma-related shame and trauma-related guilt were entered as simultaneous predictor variables and C-PTSD symptom severity was entered as the outcome variable, and results indicated that these variables also significantly predicted C-PTSD symptom severity, $R^2 = .46$, $F(2, 206) = 85.88$, $p < .001$, with $\beta = .61$ ($p < .001$) for trauma-related shame and $\beta = .64$ ($p < .001$) for trauma-related guilt.

Hierarchical regressions were used to test hypothesis 2a and 2b. For hypothesis 2a, trauma-related shame was entered in step 1 of the analyses to control for its effects on the outcome variable, PTSD symptom severity. At step 1, trauma-related shame significantly predicted PTSD symptom severity, $F(1, 207) = 144.11$, $p < .001$, $R^2 = .41$, accounting for 41% of the variance in PTSD severity ($\beta = .64$, $p < .001$). Then, trauma-related guilt was entered in step 2 of the analyses to determine whether trauma-related guilt significantly predicted PTSD symptom severity above and beyond the effects of trauma-related shame. Upon adding trauma-related guilt in step 2, the model significantly improved, $R^2 = .50$, $\Delta R^2 = .09$, $F(2, 206) = 103.12$, $p < .001$. The addition of trauma-related guilt explained an additional 9% of the variance in

PTSD symptom severity (β = .45, $p < .001$), with shame still significantly predicting PTSD symptom severity, β = .31, $p < .001$.

For hypothesis 2b, the same analysis was conducted with C-PTSD symptom severity as the outcome variable. At step 1, trauma-related shame significantly predicted C-PTSD symptom severity, $F(1, 207) = 124.61$, $p < .001$, $R^2 = .38$, accounting for 38% of the variance in C-PTSD symptom severity (β = .61, $p < .001$). Upon adding trauma-related guilt in step 2, the model significantly improved, overall $R^2 = .46$, $\Delta R^2 = .08$, $F(2, 206) = 85.88$, $p < .001$. The addition of trauma-related guilt explained an additional 8% of the variance in C-PTSD symptom severity (β = .42, $p < .001$), with shame still significantly predicting C-PTSD symptom severity, β = .30, $p < .001$.

Before conducting moderation analyses for hypotheses 3 and 4 using the PROCESS Macro (Hayes, 2012), linear regression was used to confirm the relationships between (a) predictor variable and outcome variable and (b) moderator variable and outcome variable for each hypothesis. Trauma-related shame was found to significantly predict PTSD symptom severity, $R^2 = .41$, $F(1, 207) = 144.11$, $p < .001$, β = .64, $p < .001$, and fundamentalist religious belief adherence was found to significantly predict PTSD symptom severity, $R^2 = .04$, $F(1, 206) = 8.790$, $p = .003$, β = -.20, $p = .003$. For hypothesis 3b, trauma-related shame was found to significantly predict C-PTSD symptom severity, $R^2 = .36$, $F(1, 212) = 127.02$, $p < .001$, β = .61, $p < .001$, and fundamentalist religious belief adherence was found to significantly predict C-PTSD symptom severity, $R^2 = .05$, $F(1, 206) = 11.14$, $p = .001$, β = -.23, $p = .001$. For hypotheses 4a and 4b, purity culture belief adherence did not significantly predict PTSD symptom severity, $R^2 = .02$, $F(1, 210) = 3.26$, $p = .07$, and did not significantly predict C-PTSD symptom severity, $R^2 = .02$, $F(1, 210) = 3.65$, $p = .06$.

The PROCESS macro was then used to conduct moderation analyses. First, fundamentalist religious belief adherence was tested as a moderator for the relationship between trauma-related shame and PTSD symptom severity (see Figure 1). The direct effect for trauma-related shame was significant, $t = 9.72$, $\beta = .38$, $B = .91$, $SE = .09$, $p < .001$, and the direct effect for fundamentalist religious belief adherence was significant, $t = -1.97$, $\beta = .04$, $B = -.10$, $SE = .05$, $p = .05$. The interaction term was not significant, $F(1, 204) = .45$, $\Delta R^2 = .00$, $t = .67$, $\beta = -.01$, $B = .00$, $SE = .00$, $p = .50$. Fundamentalist religious belief adherence was tested as a moderator for the relationship between trauma-related shame and C-PTSD symptom severity (see Figure 2). The direct effect for trauma-related shame was significant, $t = 9.08$, $\beta = .35$, $B = .49$, $SE = .05$, $p < .001$, and the direct effect for fundamentalist religious belief adherence was significant, $t = -2.40$, $\beta = .05$, $B = -.07$, $SE = .03$, $p = .02$. The interaction term was not significant, $F(1, 204) = .45$, $\Delta R^2 = .00$, $t = .71$, $\beta = -.01$, $B = .00$, $SE = .00$, $p = .48$.

Evangelical purity culture belief adherence was tested as a moderator for the relationship between trauma-related shame and PTSD symptom severity (see Figure 3). The direct effect for trauma-related shame was significant, $t = 3.98$, $\beta = .33$, $B = .80$, $SE = .20$, $p < .001$, and the direct effect for evangelical purity culture belief adherence was not significant, $t = -1.60$, $\beta = -.16$, $B = -.18$, $SE = .11$, $p = .11$. The interaction term was not significant, $F(1, 208) = .26$, $\Delta R^2 = .00$, $t = .51$, $\beta = .04$, $B = .00$, $SE = .01$, $p = .61$. Evangelical purity culture belief adherence was tested as a moderator for the relationship between trauma-related shame and C-PTSD symptom severity (see Figure 4). The direct effect for trauma-related shame was significant, $t = 3.68$, $\beta = .30$, $B = .43$, $SE = .12$, $p < .001$, and the direct effect for evangelical purity culture was not significant, $t = -1.66$, $\beta = -.17$, $B = -.11$, $SE = .07$, $p = .10$. The interaction term was not significant, $F(1, 208) = .21$, $\Delta R^2 = .00$, $t = .46$, $\beta = .03$, $B = .00$, $SE = .00$, $p = .64$.

CHAPTER 4: DISCUSSION

Discussion

The current study examined the complex interactions between trauma-related emotions, posttraumatic stress outcomes, and the impact of religious ideology in a sample of undergraduate women/AFAB individuals at a public university in the rural southeastern US. As predicted, trauma-related shame and trauma-related guilt both significantly predicted PTSD and C-PTSD symptom severity in the current sample. Results indicated, however, that trauma-related guilt continued to predict PTSD and C-PTSD symptom severity after controlling for the impact of trauma-related shame, which contradicted the proposed hypothesis. Regarding the moderating role of sociocultural religious variables, none of the study's hypotheses were supported. When examining the potential moderating effect of religious fundamentalism and purity culture belief adherence on the relationships between trauma-related shame and PTSD and C-PTSD outcomes, none of the interaction terms were statistically significant. In fact, when examining the relationships between predictor and outcome variables in the proposed moderations, religious fundamentalism was unexpectedly a significant predictor of lower PTSD and C-PTSD symptom severity scores in the current sample, and there was no relationship between purity culture belief adherence and PTSD and C-PTSD symptom severity.

In alignment with the extant literature, the current study's findings are consistent with the role of shame and guilt in the development and maintenance of PTSD symptoms, in line with meta-analyses supporting shame and guilt's prediction of posttraumatic stress symptoms (e.g., Brewin et al., 2000; Lee et al., 2001; Lopez-Castro et al., 2019; Shi et al., 2021). More generally, the findings align with Aakvaag and colleagues' (2016) finding that shame and guilt each independently predict psychological distress in the wake of trauma exposure. However, the

finding that trauma-related guilt continued to significantly predict PTSD and C-PTSD symptoms above and beyond trauma-related shame was inconsistent with *a priori* hypotheses that trauma-related guilt would no longer significantly predict posttraumatic stress symptoms after controlling for trauma-related shame. This suggests that both shame and guilt related to trauma may play an important role in PTSD symptomatology. This result challenges some of the extant literature that centers shame as a more potent contributor to PTSD symptom severity, given shame's association with more global and stable self-condemnation (Lee et al., 2001; Tangney & Dearing, 2002). This inconsistency may be related to sample-specific effects, so further research is warranted.

The persistence of trauma-related guilt as a significant predictor of PTSD and C-PTSD symptom severity after controlling for shame may support Kubany and Watson's (2003) position that guilt specifically related to trauma exposure may have especially maladaptive characteristics beyond those of general guilt-related distress. Specifically, they posit that guilt-based reactions to trauma exposure exacerbate distress, and that guilt-related self-blaming evaluations of traumatic events contribute to the frequency and severity of intrusive symptoms. This contrasts with the findings of other researchers examining the differences between shame and guilt, who suggest that general guilt might be understood as socially adaptive and potentially beneficial compared to the more global self-condemnation of shame (Tangney et al., 2007). Meta-analytic data about shame predicting PTSD symptoms emphasizes the challenges in measuring shame, as studies use measurements targeting different types of shame, single-item measures, non-validated measures, or measures that conflate guilt and shame (Lopez-Castro et al., 2019).

Given the inconsistency in measurement, the current study's hypotheses about trauma-related shame and trauma-related guilt were informed by research using an array of tools that

expanded beyond trauma-specific emotion and cognition. Further, the current study had a sample comprised of high-functioning college students who reported overall low levels of posttraumatic stress symptoms, complex posttraumatic stress symptoms, trauma-related shame, and trauma-related guilt. Shame in the context of posttraumatic stress is associated with higher levels of distress and impairment, including depressive symptoms, suicidal ideation, and suicidal behavior (Alix et al., 2017; Cunningham et al., 2019; Leskela et al., 2002), and data that align more with extant examinations of shame and posttraumatic stress might be obtained in a sample with a wider representation of symptom severity, trauma history, and level of functioning.

Contrary to hypotheses, religious fundamentalism did not moderate the relationship between trauma-related shame and PTSD or C-PTSD. In the process of building the moderation analysis, a surprising relationship emerged, specifically that RF was associated with lower PTSD and C-PTSD scores. This finding may suggest a more complicated relationship between religious context, traumatic stress, and trauma-related shame than initially proposed. The finding that RF predicted lower PTSD and C-PTSD symptoms might reflect previous findings that higher RF is related to more active religious coping in the wake of distressing experiences, alleviation of anxiety related to uncertainty, and lower psychological distress in a sample with similar mean levels of religious fundamentalism (Kossowska et al., 2016; Phillips & Ano, 2016; Womick et al., 2021). In addition, there is evidence that more devoutly religious individuals tend to be more guilt-prone than shame-prone, which might contextualize this unexpected relationship (Luyten et al., 1998). However, these considerations must be made with caution, as the findings do not support a protective effect. Alternatively, they may be an artifact of the overall low levels of fundamentalism and symptomatology that were endorsed in the current sample.

Contrary to predictions, PCBS was not found to influence the relationship between trauma-related shame and PTSD or C-PTSD symptom severity. This result challenges existing findings suggesting that purity culture ideology intensifies shame in women and AFAB individuals, given its association with rigidly enforced gender roles and victim blaming ideology, such as rape myth acceptance (Ortiz, 2020; Owens et al., 2021). It is possible that other positive factors of religious identity and church involvement such as social support and community connectedness might counteract the potential negative impacts of purity culture ideology (Calhoun et al., 2022). It is worth noting that there were not differences in the PCBS between individuals who identified as Evangelical and those who did not endorse that identity, but it would have been expected that Evangelical participants would have endorsed more purity culture belief adherence. This may be sample specific, or it could represent challenges to the construct of and measurement of purity culture adherence. In addition, the PCBS measurement tool is a recently developed scale and has not been used or validated extensively in the literature, which may limit its effectiveness in measuring the role of purity culture in the relationship between shame and PTSD symptoms. Similarly, lack of moderating relationship may be related to the low levels of endorsed purity culture beliefs in the present sample.

Theoretical Implications

In the current study, the significant roles of trauma-related shame and trauma-related guilt as predictors of PTSD and C-PTSD symptom severity align with existing literature, which recognizes these symptoms not only as byproducts of posttraumatic stress but also as core components of PTSD and C-PTSD outcomes (Cunningham, 2020; Shi et al., 2021). The findings underscore the impact of cognitive appraisals related to traumatic stress that perpetuate negative self-evaluation and self-blame. Whether these cognitions manifest as conditional self-blame

specific to one event or behavior (guilt) or more global self-condemnation (shame), these cognitions may exacerbate posttraumatic stress symptoms. Both shame and guilt are associated with these self-focused and self-critical cognitions, which reflect the attributes of the self-blame cognitions foundational to the cognitive model of PTSD (Ehlers & Clark, 2000). These findings highlight the necessity of considering shame and guilt, including related self-blaming cognitions, in the assessment and treatment of PTSD and C-PTSD. This is especially significant given the evidence supporting the importance of addressing shame and guilt directly in treating posttraumatic stress (Lee et al., 2001; Norman, 2022).

The finding that trauma-related guilt predicted PTSD and C-PTSD above and beyond trauma-related shame supports the notion that shame and guilt both contribute to posttraumatic stress despite their overlapping attributes (Gilbert, 2003; Lewis, 1971). Although there is substantial support for the theory that shame plays a more central role in PTSD and C-PTSD symptom severity, the literature on shame and guilt related to posttraumatic stress is limited by inconsistent measurement and differing conceptualizations, leading to mixed results and unexpected findings in the wider literature base (Bannister et al., 2019; Pugh et al., 2015; Shi et al., 2021). The results of the current study fall within this trend. It is possible that shame and guilt related to trauma are difficult to distinguish given their similarities or overlapping attributes, especially when relying on cross-sectional self-report survey items, which might affect the results. Additionally, examining shame and guilt specific to posttraumatic stress might warrant a unique conceptualization beyond the proposed functions of more generalized shame and guilt. Notably, technical errors in the current study related to six items in the TRSI being missing and one item in the TRGI being missing limits interpretability of the data and likely impacts the results.

The unexpected finding that RF did not moderate the relationship between trauma-related shame and PTSD or C-PTSD, along with the observation that RF predicted lower PTSD and C-PTSD symptom severity, contradicts the perspective that the cognitive rigidity and devaluation of women associated with fundamentalist faith would be associated with shame and poor posttraumatic outcomes in women and AFAB individuals. This suggests that RF might have a more nuanced impact on mental health, especially given recent literature that illustrates how RF offers a straightforward framework for constructing a coherent sense of meaning in the wake of challenging life experiences. High rates of active religious coping paired with strong ingroup boundaries among those high in RF has been found to alleviate uncertainty and anxiety, potentially protecting against PTSD (Kossowska et al., 2016; Womick et al., 2021). Evidence suggests an association between higher religious doubt and lower rates of psychological wellbeing (Krause, 2006); in turn, it is possible that the clearly defined belief structure of religious fundamentalism might instead support a sense of wellbeing. Further, those with more devout religious faith tend to develop strong community bonds with those in their religious group (Bane, 2021). Given that perceived social support is a strong protective factor in the development and severity of PTSD (Calhoun et al., 2022), it is possible that this social aspect of religiosity influences RF's relationship with symptom severity. Of note, it is also important to consider that participants in the current study reported fairly low religious fundamentalism overall. Given that participants were women/AFAB individuals enrolled in a secular state university, the current study's sample likely does not reflect the experiences of highly fundamentalist religious individuals.

Beyond measurement limitations, the finding that PCBS did not moderate the relationship between trauma-related shame and PTSD/C-PTSD symptom severity may prompt further

exploration into whether purity culture components are more related to trauma-related guilt rather than shame. Kubany and colleagues' (2003) proposed cognitive mechanisms of trauma-related guilt include a violation of one's personal standards of right and wrong, perceived personal responsibility for causing the event, perceived lack of justification for action taken, and false beliefs about pre-outcome knowledge (e.g., hindsight bias). Purity culture beliefs, as outlined by Ortiz (2019), placing disproportionate responsibility for ensuring their pre-marital sexual abstinence (e.g., sexual gatekeeping) for women and girls compared to men and boys, delineates clear guidelines for appropriate behavior for women, and is associated with victim blaming attitudes toward women (Owens et al., 2021). This emphasis on women's personal responsibility to prevent victimization might bolster trauma-related guilt cognitions related to responsibility, self-blame, and violation of personal morals, which could reflect the unique themes of purity culture more effectively than more global self-condemning cognitions associated with trauma-related shame. In addition, much of the literature emphasizes the impact of purity culture on adolescents in the 1990s and 2000s, but the current sample was comprised mostly of traditional college aged students who were likely less impacted by overt purity culture compared to the millennial cohort (Batchelder, 2020).

Clinical Implications

The current study's findings suggest that addressing trauma-related shame and guilt in PTSD assessment and treatment could be beneficial when working with women and AFAB individuals. Given the negative self-evaluative cognitions associated with both shame and guilt in the context of posttraumatic stress, Cognitive Processing Therapy (CPT) might be especially helpful to target negative self-evaluative cognitions regardless of their categorization as shame-based or guilt-based (Sobel et al., 2009). Notably, for individuals who are involved in more

fundamentalist religious faiths, CPT might also be helpful in developing flexibility regarding "just world" assumptions and integrating memories of traumatic stress into existing belief structures. The just world belief in CPT is a cognitive bias assuming that people get what they deserve (i.e., good things happen to good people and bad things happen to bad people), which can exacerbate feelings of self-blame and worsen posttraumatic stress symptoms (Sobel et al., 2009). In addition, for trauma-exposed individuals who experience distress related to guilt and/or shame, Trauma Informed Guilt Reduction Therapy (TriGR) is a newer therapy with growing empirical support that addresses both guilt and shame concurrently (Norman, 2022). Literature on TriGR suggests that trauma-related negative self-evaluations (along with their associated emotions and action urges) are best addressed holistically given their overlapping characteristics and the complex interactions of culture, dispositional shame and guilt, and traumatic stress attributes (Norman, 2022).

Especially for those with strong religious beliefs and involvement in religious groups, supporting recovery from PTSD using an integrated biopsychosocial model might be helpful (Calhoun et al., 2022). This model highlights the importance of inter- and intrapersonal dynamics in PTSD recovery and addresses how these dynamics interact to impact one's response immediately following trauma exposure, facilitate recovery from posttraumatic symptoms, and shape the nature of posttraumatic growth (Calhoun et al., 2022; Fredette et al., 2016). Clinicians might incorporate religious beliefs and community as strengths to support recovery, especially given that positive religious coping, social connectedness with church members, and spiritual meaning-making have been found to be protective factors against anxiety and trauma-related distress (Abreu Costa et al., 2022).

Strengths & Limitations

The current project contributes to the understanding of posttraumatic stress by examining the distinct roles of trauma-related shame and trauma-related guilt in PTSD and C-PTSD symptom severity rather than conflating the two. Further, the project explores the impact of sociocultural variables within traumatic stress, specifically religious ideology that is generally under-evaluated in the clinical literature (Vogel et al., 2013). Examining specific variables related to posttraumatic stress symptoms along with contextual sociocultural variables offers both breadth and depth of analysis, which might support considering both micro- and macro-level factors in the conceptualization and assessment of posttraumatic stress.

On the other hand, several limitations impact the interpretability of the current study's findings. Technical errors in data collection led to participants not being shown several scale items, which significantly impacted the data obtained from the TRSI and prevented including several items from the TRGI and ITQ. Especially with the six items missing on the TRSI, the ability to interpret shame-related findings is limited. Regarding the measurement of RF, the use of Altemeyer & Hunsberger's RRF scale may not effectively capture fundamentalist religious beliefs among college-aged women and AFAB individuals at a public university, as the scale correlates strongly with several cultural and political ideologies that are often reported at much higher rates in men (such as right-wing authoritarianism and social dominance orientation; Harnish et al., 2018). Especially regarding fundamentalist religious beliefs and purity culture ideology, the college-aged student sample likely fails to reflect broader generational, regional, and cultural experiences. While expected in a university sample, participants' generally low PTSD and C-PTSD symptom severity hinders the ability to observe differences at varying levels of symptom severity and limits generalizability to a clinical population. These factors limit the interpretation of results and hinder the generalizability of the findings to more diverse and lower

functioning groups. Finally, the present study relied on self-reported experiences and cross-sectional data collection, which may result in limiting the generalizability of the findings.

Future Research Directions

Given the complexity of shame and guilt's relationship to posttraumatic stress and challenges in consistent measurement in the current literature, future studies might measure shame and guilt both specific to traumatic stress, as well as dispositional shame and guilt. This might provide clarity when disentangling their overlapping attributes and account for shame- and guilt-proneness in the development of PTSD/C-PTSD. In addition, future research might examine shame, guilt, and religious sociocultural variables in clinical or treatment seeking samples, and it would be valuable to examine the development and maintenance of these symptoms over time using longitudinal designs. Regarding measurement, future research might incorporate measures that better reflect the religious beliefs of young women, such as extrinsic versus intrinsic religiosity (Park, 2021) or Christian orthodoxy (Fullerton & Hunsberger, 1982). While purity culture ideology is a worthwhile area of inquiry in the clinical literature, future research might use the updated PCBS (Ortiz et al., 2023) to enhance measurement accuracy and recruit an older demographic of participants to better reflect the impact of purity culture's peak popularity in the 1990s and 2000s. The present study began data collection prior to the publication of the updated version, and there were item-level differences between the two scales, such that the updated version was not able to be investigated in the present dataset.

Given that the current sample is exclusively comprised of women and AFAB individuals who tend to have higher rates of sexual and interpersonal abuse victimization (Olff, 2017), along with purity culture's highly gendered and sexualized themes of blame and morality, future research might specifically recruit participants who are women/AFAB and report sexual or

interpersonal abuse as their primary trauma for more specificity. Alternatively, including men in future studies for comparative analyses across genders might illustrate gendered effects in posttraumatic stress symptoms and the influence of religious variables. Especially given the lack of clarity in the broader literature on the unique contributes of trauma-related shame and guilt along with several unexpected findings in the current study, future research might engage directly with religious communities for recruitment and collect qualitative data for a more nuanced perspective on religious and trauma-related experiences.

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Table 1

Participant Demographics

Demographic	Total sample (N = 351)		Trauma-exposed (n = 219)		Non-trauma-exposed (n = 132)	
	n	%	*n*	%	*n*	%
Race						
White/Caucasian	300	85.5	189	86.3	111	84.1
Black/African American	38	10.8	20	9.1	18	13.6
Asian/Asian American	16	4.6	7	3.2	9	6.8
Native American/Indigenous/ American Indian	12	3.4	8	3.7	4	3.0
Other	8	2.3	6	2.7	2	1.5
Native Hawaiian/Pacific Islander	6	1.7	5	2.3	1	0.8
Ethnicity						
Not Hispanic/Latine	311	88.6	188	85.8	123	93.2
Hispanic/Latine	40	11.4	31	14.2	9	6.8
Sexual orientation						
Straight/heterosexual	214	61.0	127	58.0	87	65.9
Bisexual or pansexual	101	28.8	68	31.1	33	25.0
Gay or lesbian	26	7.4	20	9.1	6	4.5
Asexual	8	2.3	2	0.9	6	4.5
Other	2	0.6	2	0.9	0	0
Relationship status						
Single, never married	226	64.4	137	62.6	89	67.4
In a committed relationship	123	35.0	81	37.0	42	31.8
Married	2	0.6	1	0.5	1	0.8
Current Religion						
Christian	197	56.1	112	51.1	85	64.4
None	52	14.8	36	16.4	16	12.1
Agnostic	42	12.0	30	13.7	12	9.1
Atheist	34	9.7	25	11.4	9	6.8
Other	16	4.6	9	16.4	7	5.3
Jewish	7	2.0	5	2.3	2	1.5
Buddhist	2	0.6	1	0.5	1	0.8
Hindu	1	0.3	1	0.5	0	0

Note. For race, participants were instructed to select all identities that apply, which resulted in frequencies over 100%.

Table 2

Frequencies of Traumatic Exposures

Traumatic event	*n*	% of participants endorsed (*n* = 219)
Transportation accident (for example, car accident, boat accident, train wreck, plane crash)	192	87.7
Other unwanted or uncomfortable sexual experience	178	81.3
Natural disaster (for example, flood, hurricane, tornado, earthquake)	176	80.4
Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)	162	74.0
Sexual assault (rape, attempted rape, made to perform any sexual act through force or threat of harm)	160	73.1
Fire or explosion	147	67.1
Serious accident at work, home, or during recreational activity	144	65.8
Life-threatening illness or injury	143	65.3
Other very stressful life event or experience	132	60.3
Sudden violent death (for example, homicide, suicide)	123	56.2
Sudden accidental death	120	54.8
Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)	100	45.7
Combat or exposure to a war-zone (in the military or as a civilian)	99	45.2
Severe human suffering	89	40.6
Exposure to toxic substance (for example, dangerous chemicals, radiation)	78	35.6
Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)	68	31.1
Serious injury, harm, or death you caused to someone else	41	18.7

Table 3

Descriptive Statistics for Study Variables

Variable	*n*	*M*	*SD*	Range	Skew	Skew *SE*	Kurtosis	Kurtosis *SE*
1. PCL-5	219	27.01	18.05	0-76	.33	.16	-.73	.33
2. ITQ	217	15.99	10.10	0-42	.48	.17	-.55	.33
3. TRSI	214	10.72	12.84	0-54	1.40	.17	1.33	.33
4. TRGI	209	47.10	20.87	12-107	.48	.17	-.80	.34
5. RRF	208	-13.21	23.96	-48-48	.42	.17	-.69	.34
6. PCBS	212	31.06	11.18	20-66	1.26	.17	.88	.33

Note. PCL-5 = PTSD Checklist for DSM-5; ITQ = International Trauma Questionnaire; TRSI = Trauma-Related Shame Inventory; TRGI = Trauma-Related Guilt Inventory; RRF = Revised Religious Fundamentalism scale; PCBS = Purity Culture Beliefs Scale.

Table 4
Correlations for Study Variables

Variable	PCL-5	ITQ	TRSI	TRGI	RRF	PCBS
PCL-5	—					
ITQ	.89**	—				
TRSI	.64**	.61**	—			
TRGI	.68**	.64**	.74**	—		
RRF	-.20**	-.23**	-.15*	-.20**	—	
PCBS	-.12	-.13	-.05	-.05	.60**	—

Note. *$p < .05$. **$p < .01$. PCL-5 = PTSD Checklist for DSM-5; ITQ = International Trauma Questionnaire; TRSI = Trauma-Related Shame Inventory; TRGI = Trauma-Related Guilt Inventory; RRF = Revised Religious Fundamentalism scale; PCBS = Purity Culture Beliefs Scale.

Figure 1

Results of Hypothesis 3a

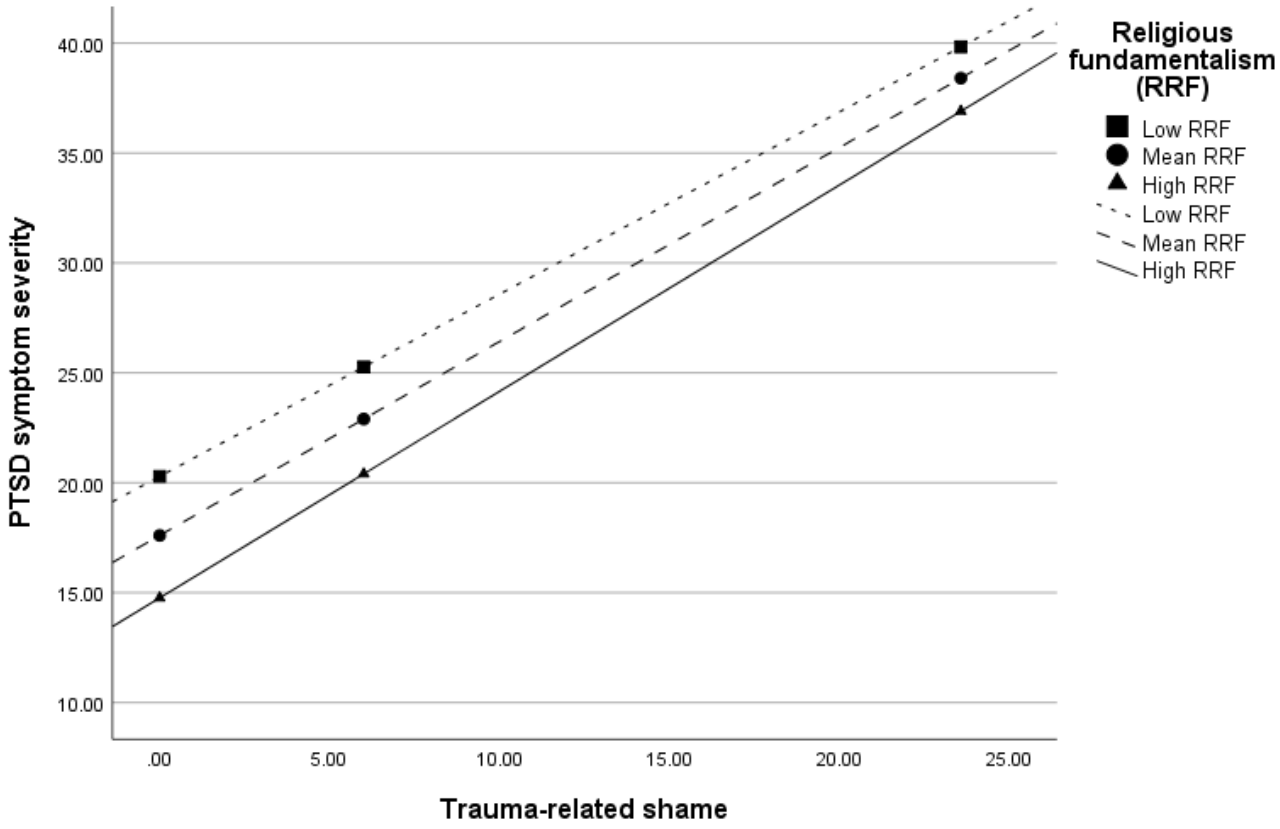


Figure 2

Results of Hypothesis 3b

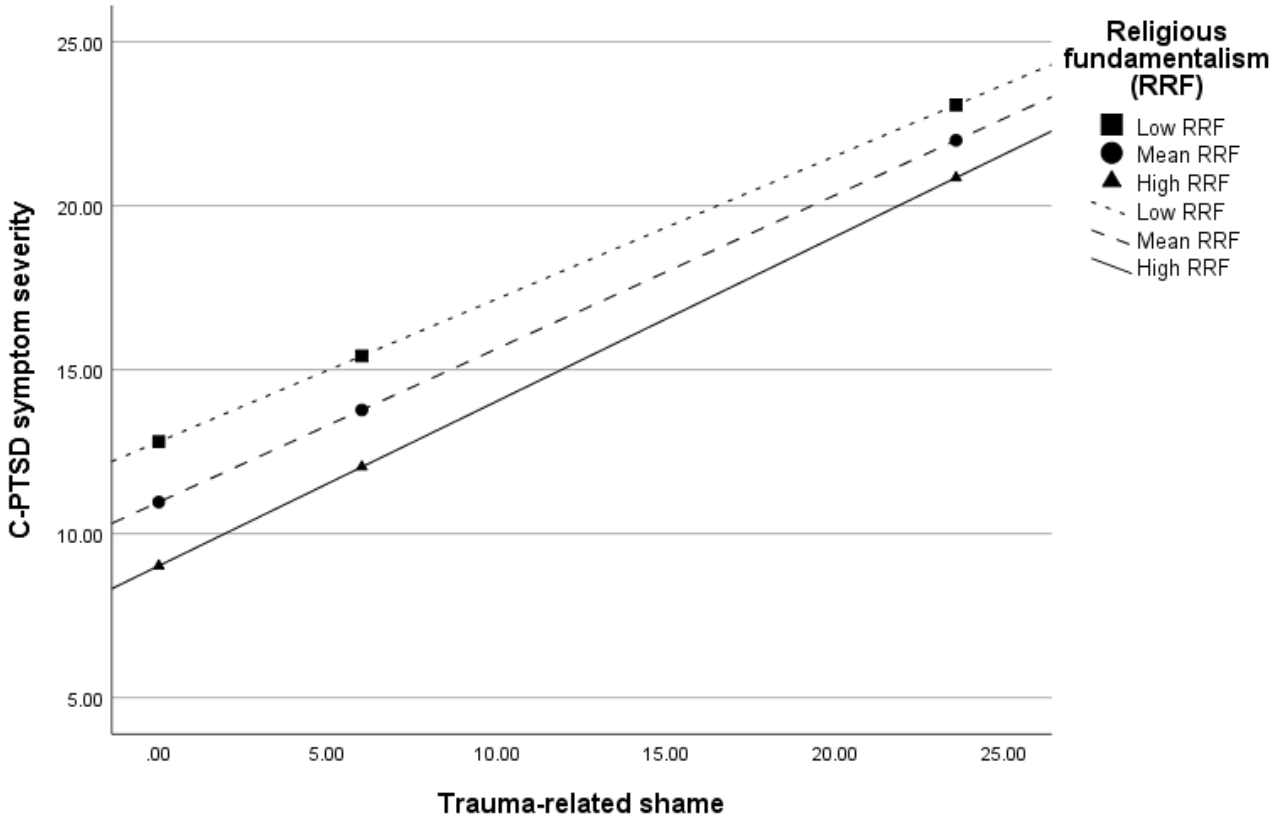


Figure 3

Results of Hypothesis 4a

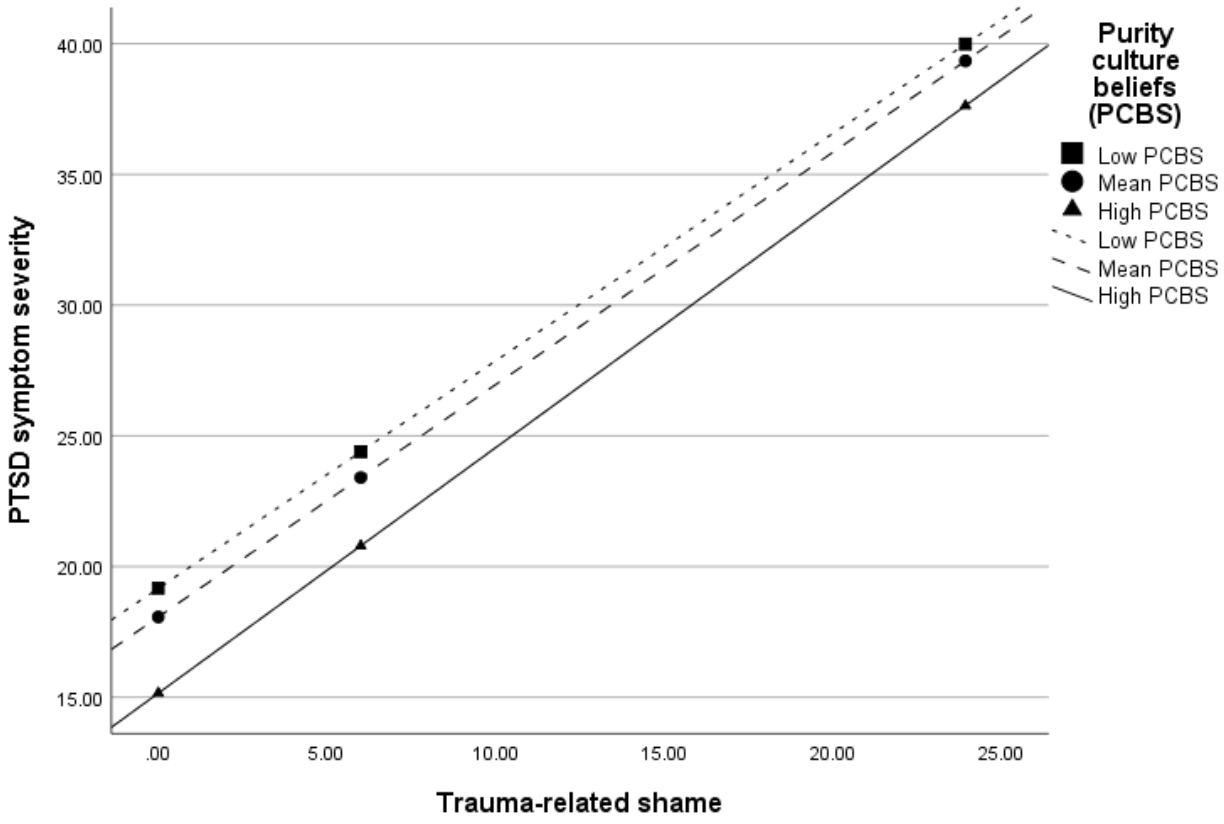
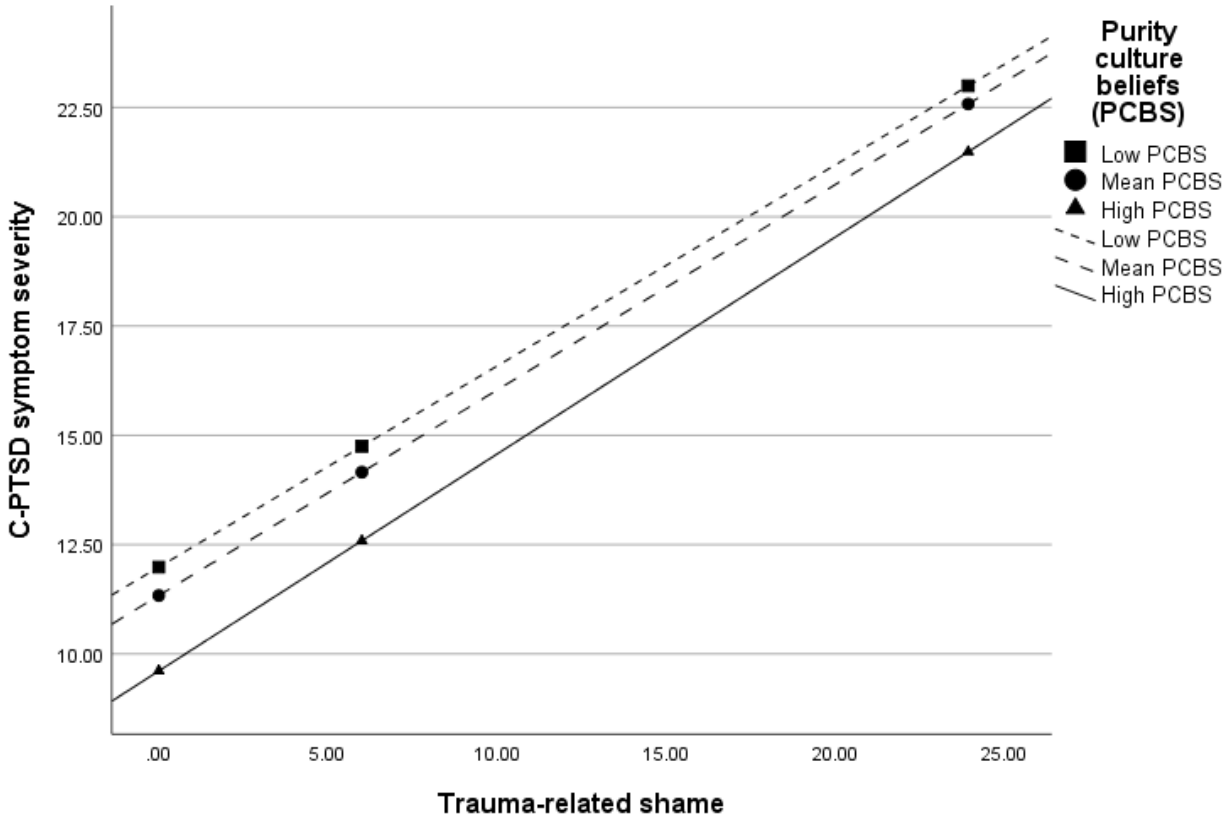


Figure 4

Results of Hypothesis 4b



APPENDIX A: MEASURES

Demographics Form

1. **Age: _____**

2. **Ethnicity (please select all that apply):**

White/Caucasian | Hispanic/Latino | Black/African American
Asian or Pacific Islander | Native American | Other

3. **Gender:**

Woman | Man | Non-Binary | Other (please specify)

4. **Sex Assigned at Birth:**

Female | Male | Intersex | Other (please specify)

5. **Sexual Orientation:**

Straight/Heterosexual | Gay or Lesbian | Bisexual or Pansexual
Asexual | Other (please specify)

6. **Relationship Status:**

Single/Never Married | Married | In a Committed Relationship
Separated/Divorced | Widowed

7. **If married or in a relationship, how long have you been with your current partner? _____ _____**

8. **Religious Identification**

Christian | Jewish | Muslim | Hindu | Buddhist | Agnostic
Atheist | Other (please specify)

9. **If you identify as Christian, what is your denomination or church affiliation?**

Baptist | Non-denominational | Seventh-Day Adventist
Catholic | Methodist | Presbyterian | Mormon / LDS
Pentecostal | Anglican | Mennonite | Lutheran
Jehovah's Witness | Other (please specify)

10. **If you are Christian, do you identify as evangelical?**

Yes | No

11. **How important to your life are your religious beliefs?**

Rate from 1 (not at all important) to 7 (extremely important)

12. **How frequently do you attend church services or other faith-based meetings?**

Once a year | Two to three times a year | Once a month
Two or three times a month | Once a week | More than once a week

Life Events Checklist for DSM-5 – Extended Version (LEC-5)

Part 1

Instructions: Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally; (b) you witnessed it happen to someone else; (c) you learned about it happening to a close family member or close friend; (d) you were exposed to it as part of your job (for example, paramedic, police, military, or other first responder); (e) you're not sure if it fits; or (f) it doesn't apply to you. Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

Note. Each item can be marked with any of the following: Happened to me, Witnessed it, Learned about it, Part of my job, Not sure, Doesn't Apply

1. Natural disaster (for example, flood, hurricane, tornado, earthquake)
2. Fire or explosion
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)
4. Serious accident at work, home, or during recreational activity5. Exposure to toxic substance (for example, dangerous chemicals, radiation)
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)
9. Other unwanted or uncomfortable sexual experience
10. Combat or exposure to a war-zone (in the military or as a civilian)
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)
12. Life-threatening illness or injury
13. Severe human suffering
14. Sudden violent death (for example, homicide, suicide)
15. Sudden accidental death
16. Serious injury, harm, or death you caused to someone else
17. Any other very stressful event or experience

Part 2

A. If you checked anything for #17 in Part 1, briefly identify the event you were thinking of:

B. If you have experienced more than one of the events in PART 1, think about the event you consider the worst event, which for this questionnaire means the event that currently bothers you the most. If you have experienced only one of the events in PART 1, use that one as the worst event. Please answer the following questions about the worst event (check all options that apply):

1. Briefly describe the worst event (for example, what happened, who was involved, etc.)

2. How long ago did it happen? (Please estimate if you are not sure)

3. How did you experience it?
   __ It happened to me directly
   __ I witnessed it
   __ I learned about it happening to a close family member or friend
   __ I was repeatedly exposed to details about it as part of my job (for example, paramedic, police, military, or other first responder)
   __ Other, please describe:

4. Was someone's life in danger?
   __ Yes, my life
   __ Yes, someone else's life
   __ No

5. Was someone seriously injured or killed?
   __ Yes, I was seriously injured
   __ Yes, someone else was seriously injured or killed
   __ No

6. Did it involve sexual violence?
   __ Yes
   __ No

7. If the event involved the death of a close family member or close friend, was it due to some kind of accident or violence, or was it due to natural causes?
   __ Accident or violence
   __ Natural causes
   __ Not applicable (The event did not involve the death of a close family member or close friend)

8. How many times altogether have you experienced a similar event as stressful or nearly as stressful as the worst event?
   __ Just once
   __ More than once (please specify or estimate the total # of times you have had this experience)

PTSD Checklist for DSM-5 (PCL-5)

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

Note. For each item, participants can respond: Not at all (0), A little bit (1), Moderately (2), Quite a bit (3), Extremely (4)

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

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
10. Blaming yourself or someone else for the stressful experience or what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities that you used to enjoy?
13. Feeling distant or cut off from other people?
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
15. Irritable behavior, angry outbursts, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?
17. Being “superalert” or watchful or on guard?
18. Feeling jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

International Trauma Questionnaire

Instructions: Please identify the experience that troubles you most and answer the questions in relation to this experience.

Brief description of the experience _____

When did the experience occur? (circle one)

a. less than 6 months ago
b. 6 to 12 months ago
c. 1 to 5 years ago
d. 5 to 10 years ago
e. 10 to 20 years ago
f. more than 20 years ago

Below are a number of problems that people sometimes report in response to traumatic or stressful life events. Please read each item carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

Note. For each item, participants can respond: Not at all (0), A little bit (1), Moderately (2), Quite a bit (3), Extremely (4)

P1. Having upsetting dreams that replay part of the experience or are clearly related to the experience?
P2. Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now?
P3. Avoiding internal reminders of the experience (for example, thoughts, feelings, physical sensations)?
P4. Avoiding external reminders of the experience (for example, people, places, conversations, objects, activities, or situations)?
P5. Being “super-alert”, watchful, or on guard?
P6. Feeling jumpy or easily startled?

In the past month, have the above problems:

P7. Affected your relationships or social life?
P8. Affected your work or ability to work?
P9. Affected any other important part of your life such as parenting, or school or college work, or other important activities?

Below are problems that people who have had stressful or traumatic events sometimes experience. The questions refer to ways you typically feel, ways you typically think about yourself and ways you typically relate to others. Answer the following thinking about how true each statement is of you.
How true is this of you?

C1. When I am upset, it takes me a long time to calm down.

C2. I feel numb or emotionally shut down.
C3. I feel like a failure.
C4. I feel worthless. †
C5. I feel distant or cut off from people.
C6. I find it hard to stay emotionally close to people.

In the past month, have the above problems in emotions, in beliefs about yourself, and in relationships:

C7. Created concern or distress about your relationships or social life?
C8. Affected your work or ability to work?
C9. Affected any other important parts of your life such as parenting, or school or college work, or other important activities?

Note. † indicates an item missing from data analysis.

Trauma-Related Shame Inventory (TRSI-24)

Individuals who experience traumas often have many different types of reactions. Below are a number of statements that describe thoughts and feelings that people sometimes have about themselves. Please read each statement carefully and decide how much it applies to you. Check the option that best describes how much the statement is true for you over the past week.

Note. For each item, participants can respond: Not true of me, Somewhat true of me, Mostly true of me, Completely true of me

1. As a result of my traumatic experience, I have lost respect for myself.
Because of what happened to me, others find me less desirable.
3. I am ashamed of myself because of what happened to me.
4. As a result of my traumatic experience, others have seen parts of me that they want nothing to do with.
5. As a result of my traumatic experience, I cannot accept myself. †
6. If others knew what happened to me, they would view me as inferior.
7. If others knew what happened to me, they would be disgusted with me.
8. I am ashamed of the way I behaved during my traumatic experience.
9. I am so ashamed of what happened to me that I sometimes want to escape from myself.
10. As a result of my traumatic experience, I find myself less desirable.
11. I am ashamed of the way I felt during my traumatic experience.
12. If others knew what had happened to me, they would look down on me.
13. As a result of my traumatic experience, there are parts of me that I want to get rid of.
14. If others knew what happened to me, they would not like me.
15. Because of my traumatic experience, I feel inferior to others.
16. If others knew what happened to me, they would be ashamed of me.
17. If others knew what happened to me, they would find me unacceptable.
18. As a result of my traumatic experience, a part of me has been exposed that others find shameful.
19. If others knew how I behaved during my traumatic experience, they would be ashamed of me.
20. My traumatic experience has revealed a part of me that I am ashamed of. †
21. As a result of my traumatic experience, I don't like myself. †
22. If others knew how I felt during my traumatic experience, they would be ashamed of me. †
23. Because of what happened to me, I am disgusted with myself. †
24. I am so ashamed of what happened to me that I sometimes want to become invisible to others. †

Note. † Indicates an item missing from data analysis.

Trauma-Related Guilt Inventory (TRGI)

Instructions: Individuals who have experienced traumatic events – such as physical or sexual abuse, military combat, sudden loss of loved ones, serious accidents or disasters, etc. – vary considerably in their response to these events. Some people do not have any misgivings about what they did during these events, whereas other people do. They may have misgivings about something they did (or did not do), about beliefs or thoughts they had, or for having certain feelings (or lack of feelings). The purpose of this questionnaire is to evaluate your response to a traumatic experience.

Please take a moment to think about what happened. All the items below refer to events related to this experience. Circle the answer that best describes how you feel about each statement.

Note: Unless otherwise indicated, for each item, participants can respond on a scale from 1 (Not at all true) to 5 (Extremely true).

1. I could have prevented what happened.
2. I am still distressed about what happened.
3. I had some feelings that I should not have had.
4. What I did was completely justified.*
5. I was responsible for causing what happened.
6. What happened causes me emotional pain.
7. I did something that went against my values.
8. What I did made sense.*
9. I knew better than to do what I did.
10. I feel sorrow or grief about the outcome.
11. What I did was inconsistent with my beliefs.
12. If I knew today—only what I knew when the event(s) occurred—I would do exactly the same thing.*
13. I experience intense guilt that relates to what happened.
14. I should have known better.
15. I experience severe emotional distress when I think about what happened.
16. I had some thoughts or beliefs that I should not have had.
17. I had good reasons for doing what I did.*
18. Indicate how frequently you experience guilt that relates to what happened.
never 1 — 2 — 3 — 4 —5 always
19. I blame myself for what happened.
20. What happened causes a lot of pain and suffering.
21. I should have had certain feelings that I did not have.
22. Indicate the intensity or severity of guilt that you typically experience about the event(s).
none 1 — 2 — 3 — 4 —5 extreme
23. I blame myself for something I did, thought, or felt.
24. When I am reminded of the event(s), I have strong physical reactions such as sweating, tense muscles, dry mouth, etc.
never true 1 — 2 — 3 — 4 —5 always true

25. Overall, how guilty do you feel about the event(s)? †
Not guilty at all 1 — 2 — 3 — 4 —5 extremely guilty
26. I hold myself responsible for what happened.
27. What I did was not justified in any way.
28. I violated personal standards of right and wrong.
29. I did something that I should not have done.
30. I should have done something that I did not do.
31. What I did was unforgivable.
32. I didn't do anything wrong.*

* Indicates reverse-scored item.
† Indicates item missing in data collection.

Revised Religious Fundamentalism Scale (RRF)

Instructions: This survey is part of an investigation of general public opinion concerning a variety of social issues. You will probably find that you agree with some of the statements, disagree with others, to varying extents. Please indicate your reaction to each statement by responding according to the following scale.

Select -4 if you very strongly disagree with the statement.
Select -3 if you strongly disagree with the statement.
Select -2 if you moderately disagree with the statement.
Select -1 if you slightly disagree with the statement.
Select 1 if you slightly agree with the statement.
Select 2 if you moderately agree with the statement.
Select 3 if you strongly agree with the statement.
Select 4 if you very strongly agree with the statement.
If you feel exactly and precisely neutral about an item, select 0.

You may find that you sometimes have different reactions to different parts of a statement. For example, you might very strongly disagree ("-4") with one idea in a statement, but slightly agree ("1") with another idea in the same item. When this happens, please combine your reactions, and write down how you feel on balance (a "-1" in this case).

1. God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed.
2. No single book of religious teachings contains all the intrinsic, fundamental truths about life.*
3. The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.
4. It is more important to be a good person than to believe in God and the right religion.*
5. There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message that God has given humanity.
6. When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not.
7. Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.*
8. To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.
9. "Satan" is just the name people give to their own bad impulses. There really is no such thing as a diabolical "Prince of Darkness" who tempts us.*
10. Whenever science and sacred scripture conflict, science is probably right.*
11. The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.
12. All of the religions in the world have flaws and wrong teachings. There is no perfectly true, right religion.*

* Indicates reverse-scored item.

Purity Culture Beliefs Scale (PCBS)

Instructions: The following items deal with the messages about sexuality you received growing up and whether you endorsed them. Please answer all items using a 5-point scale, in which a "1" represents that you strongly disagree with the statement, and a "5" represents that you strongly agree with the statement.

1. Women should dress modestly to avoid sexually tempting men.
2. Virginity is a gift to give your spouse on your wedding night.
3. God's will is for sex to happen within a marriage relationship.
4. It is more acceptable for a man to not be a virgin on his wedding night than a woman.
5. Waiting to have sex until marriage will make the wedding night and future sex life that much better.
6. Women should cover themselves up; men can wear whatever clothing they choose.
7. Sexual thoughts and feelings outside of marriage should cause guilt.
8. It is normal to experience sexual thoughts and feelings throughout one's life.
9. You lose a piece of yourself every time you have sex with someone new.
10. A woman who dresses immodestly causes her brothers to stumble.
11. Women should not have sexual desire.
12. Purity is primarily about my virginity.
13. Having premarital sex will make you unattractive to your future spouse.
14. Men and women should be equally responsible for maintaining sexual purity.
15. If you remain a virgin until marriage, God will bless you and your spouse with a great sex life.
16. It is normal for a man to struggle with pornography, but not normal for a woman.
17. Sex outside of marriage will make you damaged goods.
18. It will be difficult for your future spouse to forgive you if you have sex with someone else before marriage.
19. If you are patient and sexually pure, God will bring you the perfect spouse.
20. Women are, by nature, more sexually pure than men.
21. You should feel ashamed if you have sex outside of marriage.
22. It is normal for women to struggle with lust.
23. Women should be cherished as pure creatures.
24. It is the woman's fault if sexual boundaries are crossed in a dating relationship.