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ADVANCING THE MEASUREMENT OF TRAUMA-RELATED SHAME AMONG WOMEN WITH HISTORIES OF INTERPERSONAL VIOLENCE

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ADVANCING THE MEASUREMENT OF TRAUMA-RELATED SHAME AMONG
WOMEN WITH HISTORIES OF INTERPERSONAL VIOLENCE

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Arts and Sciences
at the University of Kentucky

By
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Lexington, Kentucky
Director: Dr. Christal L. Badour, Assistant Professor of Psychology
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2020

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ABSTRACT OF DISSERTATION

ADVANCING THE MEASUREMENT OF TRAUMA-RELATED SHAME AMONG WOMEN WITH HISTORIES OF INTERPERSONAL VIOLENCE

Shame is a predominant emotion for some trauma-exposed individuals—particularly survivors of interpersonal violence (IPV)—that is associated with more severe symptoms of posttraumatic stress disorder (PTSD; see Saraiya & Lopez-Castro, 2016). Despite growing evidence of shame’s importance in recovery from trauma and PTSD, measurement challenges have played a large role in difficulties understanding and comparing the impact of shame across studies. These challenges include: 1) the use of measures that assess trait shame as opposed to trauma-related shame, 2) inconsistent use of established shame measures across studies, and 3) failure to acknowledge the co-occurrence of shame and guilt. These limitations are notable, given that trauma-related shame appears to be more predictive of PTSD symptoms and other psychiatric difficulties than trait shame (Semb et al., 2011) and more predictive of PTSD symptoms than trauma-related guilt (Cunningham et al., 2018). The Trauma-Related Shame Inventory (TRSI; Øktedalen et al., 2014) is the most widely used measure of trauma-related shame, yet additional psychometric support is needed. Two studies were thus conducted to provide additional psychometric validation to support the use of the TRSI among women with IPV histories and to better understand how trauma-related shame, relative to trait shame and trauma-related guilt, are associated with PTSD symptoms among this population.

KEYWORDS: posttraumatic stress disorder, shame, guilt, interpersonal violence

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08/10/2020

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CHAPTER 1. INTRODUCTION

1.1 Shame and Posttraumatic Stress Disorder

A century ago, Dr. William Rivers wrote that the dominant emotions of soldiers returning from war included “fear, horror or shame [that] the sufferer strives with all his strength to banish from his consciousness” (Rivers, 1922, p. 123). Despite this early nod to shame as a prominent emotion in the aftermath of trauma, shame in the context of posttraumatic stress disorder (PTSD) has been relatively overlooked compared to other trauma-related emotions (e.g., fear, anger, guilt; Cunningham, 2020). Shame was not explicitly included as a symptom of PTSD in the Diagnostic and Statistical Manual of Mental Disorders (DSM) until the most recent revision in the DSM-5 (American Psychiatric Association [APA], 2013), which now focuses on a greater range of posttraumatic emotions (i.e., fear, horror, anger, guilt, and shame). Shame is a primary emotion for some survivors of trauma (Saraiya & Lopez-Castro, 2016), so recognition of shame in the DSM-5 (APA, 2013) was thus an important step toward improving the assessment, conceptualization, and treatment of PTSD.

Shame is defined as distress associated with global, stable views of the self as inadequate, weak, and/or inferior (Lewis, 1971; Tangney & Dearing, 2003). Shame is among the self-conscious emotions, which are based on evaluations of the self (i.e., one’s identity and behavior) against social and moral standards. Self-conscious emotions are elicited as an individual evaluates whether they have lived up to, or failed to live up to, a personal, social, and/or moral ideal (Tracy & Robins, 2006). These emotions are also influenced by the perceived evaluations of others (see Leary, 2007). Self-verification theory poses that people often seek evidence from others that validates or confirms their

view of themselves, even if that view is negative, and empirical evidence supports this notion (e.g., Swann & Pelham, 2002). This theory may explain why some trauma-exposed individuals believe themselves to be inherently flawed as a result of the trauma, and perceive that others will also view them as flawed. To cope with perceptions of inferiority or weakness—which are viewed as unchanging—shame drives individuals to withdraw and avoid others to facilitate self-preservation (Dickerson et al., 2004). Given that avoidance is also implicated in the development and maintenance of PTSD (Ehlers & Clark, 2000), shame-driven avoidance may prevent processing of trauma memories and interfere with the use of social support, thus maintaining PTSD symptoms (Cunningham, 2020; Lee et al., 2001). Indeed, shame appears to play a central role in PTSD for some individuals (Lee et al., 2001; Saraiya & Lopez-Castro, 2016; Taylor, 2015).

Research consistently demonstrates that shame is a predominant emotion for some trauma-exposed individuals and is associated with more severe PTSD symptoms (see Saraiya & Lopez-Castro, 2016). One study of a nationally-representative U.S. sample found that 62% of men and women with assault-related PTSD reported ongoing problems with shame (Badour et al., 2017). Participants who reported having problems with shame in this study were twice as likely to meet criteria for PTSD than those who did not report problems with shame. Another cross-sectional study found that the association between interpersonal violence (IPV; physical or sexual assault or abuse) and PTSD symptoms was explained by an indirect effect via shame, even when controlling for fear (La Bash & Papa, 2014), suggesting that IPV may be uniquely linked to PTSD through shame. Another study found that shame—but not fear—was the only predictor

of heightened autonomic arousal in response to a trauma imagery task among women with IPV histories (Freed & D'Andrea, 2015). These findings run counter to biological models of PTSD that traditionally emphasize fear.

Longitudinal research also supports the importance of shame for understanding PTSD. For example, shame positively predicts PTSD symptom severity days to years after a trauma (Andrews et al., 2000; Feiring et al., 2002; Feiring & Taska, 2005; Øktedalen et al., 2015). Higher shame has been linked to elevated symptoms of PTSD pre- and post-treatment as well as at follow-up (van Minnen et al., 2002). Shame is also associated with difficulties that commonly co-occur with PTSD. For instance, trauma-related shame has been associated with increased risk for suicide among veterans with PTSD (Cunningham et al., 2019) and female sexual assault survivors (DeCou, Kaplan, et al., 2019), and prospective research suggests that shame is associated with substance use among individuals with childhood trauma histories (Holl et al., 2017). Perhaps the most compelling link between PTSD and shame is the finding that changes in trauma-related shame prospectively predict changes in PTSD symptoms during trauma-focused treatment, while associations in the reverse direction (i.e., PTSD symptom change predicting change in shame) are not supported (Øktedalen et al., 2015). These findings point to the possibility that trauma-related shame may be an important mechanism of change in trauma-focused treatment. Despite growing evidence of shame's importance in recovery from trauma and PTSD, measurement challenges have played a large role in difficulties understanding and comparing the impact of shame across studies.

A review of the extant literature on shame and PTSD highlights several measurement inconsistencies, posing limitations for comparisons across studies and the

resulting implications of shame on PTSD. These inconsistencies fall within three primary domains: 1) the use of measures that assess trait shame as opposed to trauma-related shame, 2) inconsistent use of established shame measures across studies, and 3) failure to acknowledge the co-occurrence of shame and guilt.

1.1.1 Trait Shame versus Trauma-Related Shame

Measures of shame within the PTSD and trauma literature generally fall into two categories: trait shame (also referred to as shame proneness; i.e., the tendency to experience shame across different situations and contexts; Tangney et al., 1992) and trauma-related shame (i.e., feelings of shame associated with a traumatic event, or more specifically, the dissonance between an individual's perceived or ideal self-concept and their actions or attitudes associated with a traumatic event; Stone, 1992). Common measures of trait shame used within the PTSD and trauma literature have included the Experience of Shame Scale (ESS; Andrews et al., 2002), the Internalized Shame Scale (ISS; Cook, 2001), and the Tests of Self-Conscious Affect (TOSCA-3; Tangney et al., 2000). The ESS and ISS ask respondents to reflect on how they generally feel and rate their agreement on items such as “(In the past month/year) Have you felt ashamed of the sort of person you are?” (ESS) and “I feel like I am never quite good enough” (ISS). The TOSCA is a scenario-based measure that invites respondents to rate their likelihood of reacting with shame, guilt, unconcern, externalization, and pride to various situations. A sample scenario is: “You make plans to meet a friend for lunch. At 5 o'clock, you realize you stood your friend up.” A shame response to this scenario is “You would think: ‘I'm inconsiderate.’” Elevated shame via the ISS, ESS, and TOSCA-3 have been associated with elevated PTSD symptoms (Badour et al., 2020; Bannister et al., 2019; Bennett et al.,

2016; Crocker et al., 2016; Harman & Lee, 2010; Leskela et al., 2002; Pineles et al., 2006). However, Tangney and Dearing (2003) note that measures of trait shame, such as the TOSCA, are not able to reflect intense, idiographic shame experiences related to specific situations (e.g., a traumatic event) that may dominate a person's emotional life. For instance, a person who does not experience shame across a broad array of everyday circumstances may still experience intense shame after a sexual assault. Additionally, measures of trait shame have not always been shown to correlate with PTSD symptoms (Lowinger & Solomon, 2004; Ojserkis et al., 2014). In light of this limitation, measures of trauma-related shame may be more appropriate for studying the implications of shame on trauma-related psychopathology.

Trauma-related shame has been associated with elevated PTSD symptoms in both cross-sectional (Robinaugh & McNally, 2010; Stotz et al., 2015; Uji et al., 2007) and longitudinal (Brewin et al., 2000; Økstedalen et al., 2015) research. Although trauma-related shame may be exacerbated by pre-existing levels of trait shame (Beck et al., 2019; Lee et al., 2001), there is some evidence to suggest that trauma-related shame is more relevant to trauma-related psychopathology than trait shame. For example, Semb et al. (2011) compared the effects of trait shame (via the TOSCA-3) and trauma-related shame (via a one-item prompt "To what extent do you currently experience the emotion shame when thinking of the event?") as correlates of PTSD symptoms and other psychiatric symptoms (e.g., somatization, obsessions and compulsions, depression, anxiety, etc.) after a violent crime. Trauma-related shame demonstrated stronger correlations with PTSD symptoms compared to correlations between trait shame and PTSD symptoms. Additionally, there was an indirect effect of trauma-related shame on

the association between trait shame and PTSD symptoms as well as general psychiatric symptoms. These results indicate that trauma-related shame may be more strongly associated with—and may be a more proximal risk factor for—PTSD symptoms and general psychiatric symptoms than trait shame. The above mentioned study was limited, however, in the use of a single-item assessment of trauma-related shame. Fortunately, researchers have worked to develop more psychometrically sound, multi-item measures of trauma-related shame to allow for more thorough assessment.

To the author's knowledge, four measures of trauma-related shame currently exist: the Abuse-Related Beliefs Questionnaire (ARBQ; Ginzburg et al., 2006), Abuse Specific Shame Questionnaire (ASSQ; Feiring & Taska, 2005), the Shame and Guilt after Trauma Scale (SGATS; Aakvaag et al., 2016), and the Trauma-Related Shame Inventory (TRSI; Øktedalen et al., 2014). The ASSQ and the SGATS were developed specifically for their respective studies and, to the author's knowledge, have not undergone thorough psychometric analysis, while the ARBQ was developed to specifically assess shame and guilt among survivors of childhood sexual abuse. In addition to having preliminary psychometric support, a strength of the TRSI is that it is not specific to trauma type and could be used across a variety of trauma-exposed populations. The TRSI was developed and validated among an inpatient sample of 50 Norwegian individuals with PTSD using generalizability theory (G-theory), which is an extension of classical test theory that improves estimations of reliability by analyzing multiple sources of error variance (Brennan, 2011). The TRSI is comprised of two subscales: internalized shame and externalized shame. The internalized shame subscale is meant to reflect inner experiences of shame (e.g., "As a result of my traumatic

experience, I have lost respect for myself”), whereas the externalized shame scale reflects the perceptions of others (e.g., “If others knew what happened to me, they would view me as inferior”). The internalized and externalized subscales mirror the self-evaluation and perceived evaluation of others that occur in the context of self-conscious emotions (Leary, 2007; Tracy & Robins, 2006). The TRSI demonstrated good internal consistency in the initial validation sample—with the subscales reflecting the same higher order construct—as well as convergent validity via modest, positive correlations with measures of self-judgment and depression (Øktedalen et al., 2014). Scores on the TRSI have also been shown to positively correlate with measures of PTSD symptoms (DeCou, Mahoney, et al., 2019) and risk for suicide among sexual assault survivors (DeCou, Kaplan, et al., 2019). However, no studies have reported whether the different types of shame (as assessed via the subscales) are differentially associated with PTSD symptoms. Additional research is needed to better understand the individual utility of these subscales (Cunningham et al., 2018). Further, the TRSI has yet to be used in prospective research to test its predictive validity (e.g., do TRSI scores predict real-time feelings of state shame in the context of trauma memories?).

1.1.2 Inconsistent Use of Established Measures

Despite growing evidence of trauma-related shame’s importance in recovery from PTSD (Øktedalen et al., 2015), even when compared to trait shame (Semb et al., 2011), measurement inconsistencies have played a large role in difficulties comparing the impact of shame across studies. In an extensive review of the shame and PTSD literature, Saraiya and Lopez-Castro (2016) found that 23 different measures were used to assess shame (trait, state, and trauma-related) across 47 studies. Ten (21%) of these studies used

the TOSCA, seven (15%) used a single item to assess shame, six (12%) used the ISS, and another six (12%) used a study-specific measure. When looking at measures of trauma-related shame specifically, about 16 different measures were used, ranging from study-designed measures (e.g., Feiring & Taska, 2005) to single items (e.g., visual analogue scale; Semb et al., 2011). Some study-designed measures use a few items from one or more established measures of shame (e.g., Øktedalen et al., 2015). For instance, Cunningham et al. (2018) measured trauma-related shame by handpicking items from the TRSI, the Trauma Appraisal Questionnaire (DePrince et al., 2010), and the SGATS (Aakvaag et al., 2016). Although they reported high internal consistency for their composite measure, this process defeats the purpose of developing validated measures that facilitate easier use and comparison across studies, ultimately slowing the scientific process and muddying potentially important scientific discoveries. Consistent measurement is even more important in evaluations of trauma-focused treatment; if trauma-related shame is truly more predictive of recovery from PTSD than trait shame, clinical trials of PTSD treatments should include trauma-related shame as an outcome. However, PTSD treatment trials have often used trait shame as an outcome (Au et al., 2017; Harned et al., 2014; Resick et al., 2008), or they have used only one or two items assessing trauma-related shame (e.g., “How ashamed of the event are you?”; van Minnen et al., 2002). With additional validation of the TRSI, new clinical trials will be able to include a more thorough assessment of trauma-related shame as an outcome (e.g., Yeterian et al., 2017), which will enable researchers to test how trauma-related shame may or may not change throughout treatment as well as what interventions may be most effective at reducing trauma-related shame. Another key psychometric quality of the

TRSI is the extent to which it is correlated with, yet distinguishable from, trauma-related guilt. This is an important feature, given that a central consideration in shame research and measurement is the co-occurrence of shame and guilt.

1.1.3 Co-Occurrence of Shame and Guilt

Shame and guilt are both self-evaluative emotions that differ in their focus of attention. Where shame is focused on the *self* (e.g., *I am terrible*), guilt is focused on *behavior* (e.g., *I did something terrible*; Lewis, 1971; Tangney & Dearing, 2003; Tracy & Robins, 2006). Although shame and guilt often co-occur, research suggests that they are in fact discrete emotions with distinct consequences. In general, guilt is associated with pro-social behavior and actions aimed at repairing relationships, whereas shame is associated with avoidance and withdrawal (Tangney & Dearing, 2003). Furthermore, shame appears to be more maladaptive than guilt (Tangney & Dearing, 2003). For example, prospective research demonstrated that trait shame in fifth graders predicted subsequent high school suspensions, hard drug use, and suicide attempts years later; guilt-prone fifth graders, on the other hand, were less likely to attempt suicide, have unprotected sex, use illegal drugs, and be arrested or spend time in jail compared to those low in trait guilt (Stuewig et al., 2015). Research on the differential impact of shame and guilt indicates that there are unique implications for PTSD as well.

Empirical evidence suggests that trait shame (compared to trait guilt) is more strongly associated with PTSD symptoms among veterans (Bannister et al., 2019; Leskela et al., 2002), female survivors of intimate partner violence (Beck et al., 2011), treatment-seeking adults with complex PTSD (Dorahy et al., 2013), and adult male survivors of IPV (Schoenleber et al., 2015). Although research has found associations

between guilt and PTSD, these findings are inconsistent, and often become non-significant if shame is included in the model (see Pugh et al., 2015). For example, Cunningham et al. (2018) compared the effects and relative weights of trauma-related shame versus trauma-related guilt on PTSD symptoms among veterans, finding that trauma-related guilt was not a significant predictor of PTSD symptoms when trauma-related shame was included in the model. Furthermore, trauma-related shame accounted for twice the explained variance in PTSD symptoms (65.2%) compared to the variance explained by trauma-related guilt (34.8%). In the context of treatment, a clinical trial of group therapy for female childhood sexual abuse survivors found that change in trauma-related shame, but not trauma-related guilt, was associated with improvement in PTSD symptoms (Ginzburg et al., 2009). Given that shame and guilt do appear to have differential outcomes, in general (e.g., Stuewig et al., 2015) and in the context of PTSD (Cunningham et al., 2018; Ginzburg et al., 2009), valid and reliable assessments that distinguish between trauma-related shame and trauma-related guilt are imperative.

One obstacle in the assessment of shame and guilt is that laypersons are often unable to verbally distinguish the two (see Tangney & Dearing, 2003). As such, one-item assessments asking individuals “Do you feel guilty?” or “Do you feel ashamed?” may lead to inaccuracies, given 1) the assumption that respondents know how to distinguish these emotions, and 2) the assumption that one item is enough to capture such complexity. Development of the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996) thus allowed for a more thorough investigation of the impact of trauma-related guilt on trauma survivors, yet still left a gap with regard to the assessment of trauma-related shame. Tangney and Dearing (2003) warn that measures that confound shame

and guilt may observe small or insignificant correlations and inaccurately conclude the emotion assessed is unrelated to the outcome, when “in fact two noteworthy but opposing relationships have essentially canceled one another out” (p. 30). This is also the reason it is advisable to control for guilt when studying the effects of shame (and vice versa) in order to obtain what Tangney et al. refer to as guilt-free shame (or uncomplicated shame) and shame-free guilt (Tangney et al., 1994). Given evidence that trauma-related guilt may be indirectly associated with PTSD through trauma-related shame (Held & Owens, 2015), and those who report trauma-related guilt are likely to also struggle with shame (Bannister et al., 2019), it is especially important to assess both guilt and shame concurrently in the context of PTSD. To ensure that shame-specific measures are not confounded by guilt, they should evidence modest correlations with measures of guilt. Psychometric support for the TRSI indicates that its items do demonstrate more consistency across scores with each other, compared to consistency of scores with trauma-related guilt, and moderate correlations with trauma-related guilt ($r = .58, p < .001$; Øktedalen et al., 2014). This provides initial evidence of discriminant validity between the TRSI and the TRGI. Replication of this finding will provide more confidence in the TRSI’s ability to discriminate between trauma-related shame and guilt. Once this is established, future research is needed to replicate prior work in determining whether the TRSI is more strongly associated with PTSD symptoms than the TRGI.

1.2 Future Directions in Trauma-Related Shame Measurement

As highlighted above, valid and reliable measurement of trauma-related shame is greatly needed, given that it appears to be 1) more predictive of PTSD symptoms and other psychiatric difficulties than trait shame (Semb et al., 2011), and 2) more predictive

of PTSD symptoms than trauma-related guilt (Cunningham et al., 2018). The TRSI is the most widely used measure of trauma-related shame, yet more psychometric support is needed. Specifically, little research, aside from the initial validation paper, has studied the TRSI's two-factor structure. Additionally, it is unknown whether the internalized or externalized shame subscales are differentially related to PTSD symptoms and/or trauma-related guilt (Cunningham et al., 2018). Further research is also needed to compare the TRSI to measures of trait shame to replicate prior findings that trauma-related shame may be more predictive of PTSD symptoms than trait shame. Finally, the TRSI was initially validated in a sample of Norwegian inpatients with PTSD, so additional research is needed to support its validity and reliability in a variety of trauma-exposed samples with and without PTSD, including those in the United States.

One specific group that would benefit from further validation of the TRSI are women exposed to IPV. One study found that over half (53%) of a nationally-representative U.S. sample reported lifetime exposure to IPV, with prevalence being higher among women (Kilpatrick et al., 2013). This is notable given that IPV is associated with an increased risk for development of PTSD compared to other types of trauma (Kilpatrick et al., 2013), particularly among women (Olf et al., 2007). Roughly 59% of women (compared to 47% of men) report exposure to IPV, and when looking at sexual violation specifically, 42% of women compared to 16% of men report a history of sexual victimization (Kilpatrick et al., 2013). IPV is often dehumanizing and associated with betrayal or a threat to one's social esteem, status, and/or social acceptance, which may lead to negative cognitions related to powerlessness, worthlessness, and/or social subordination (Dickerson et al., 2004; Lee et al., 2001). Cognitions that often result after

IPV (e.g., “Other people will think I’m worthless because I let it happen” or “I am unlovable because of the trauma”) are indicative of shame. Indeed, trauma-related shame is frequently reported among individuals with IPV-related PTSD (Badour et al., 2017), particularly after sexual assault (Vidal & Petrak, 2007). Furthermore, individuals exposed to IPV report more feelings of shame compared to those exposed to non-interpersonal traumas (e.g., accident, disaster; Andrews et al., 2000; La Bash & Papa, 2014). Given the high prevalence of PTSD and trauma-related shame after IPV (Badour et al., 2017; Kilpatrick et al., 2013; Vidal & Petrak, 2007), and high rates of IPV and PTSD among women (Kilpatrick et al., 2013; Olf et al., 2007), psychometric support for the TRSI among female IPV survivors specifically would benefit both research and clinical practice.

1.3 The Present Study

To date, only three peer-reviewed studies have used the TRSI among samples of women with IPV histories (DeCou, Kaplan, et al., 2019; DeCou, Mahoney, et al., 2019; Kizilhan et al., 2020). These studies were cross-sectional, limiting our understanding of how trauma-related shame—and the TRSI specifically—predict real-time reactions to memories of IPV. These studies were also comprised of female undergraduate students (DeCou, Kaplan, et al., 2019; DeCou, Mahoney, et al., 2019) or Iraqi women held captive by ISIS (Kizilhan et al., 2020), posing potential generalizability limitations. Furthermore, none of these studies reported on differences between the TRSI’s internalized versus externalized shame subscales on study outcomes (i.e., suicide risk, DeCou, Kaplan, et al., 2019; PTSD symptoms, DeCou, Mahoney, et al., 2019; dissociative disorders, Kizilhan et al., 2020). Finally, none of these studies have

compared how scores on the TRSI, relative to measures of trait shame and trauma-related guilt, are differentially related to PTSD symptoms following IPV.

Given the prevalence of shame after IPV (Badour et al., 2017; La Bash & Papa, 2014; Vidal & Petrak, 2007), and its role in recovery from PTSD (Øktedalen et al., 2015), research dedicated to trauma-related shame measurement is both warranted and important. Two studies were thus conducted to provide additional psychometric validation to support the use of the TRSI among women with IPV histories.

1.3.1 Study 1

In study 1, 365 female undergraduate students with a history of IPV completed the TRSI as well as a series of questionnaires assessing trait shame and guilt, trauma-related guilt, PTSD symptoms, trauma-related mental contamination, difficulties with emotion regulation, and self-compassion. Specific aims for Study 1 included the following:

1. **Evaluate the structural validity of the TRSI via confirmatory factor analysis to validate the two-factor model in a sample of undergraduate women with IPV histories.**
2. **Evaluate the convergent and discriminant validity of the TRSI.** It was anticipated that the TRSI would be positively correlated with trait shame (i.e., the tendency to feel shame across a variety of situations), but scores would provide evidence of the unique nature of the underlying constructs being assessed. It was further anticipated that scores on the TRSI would have modest, positive correlations with measures of trauma-related guilt, trait guilt (i.e., the tendency to feel guilt across a variety of situations), PTSD symptoms, trauma-related mental

contamination (i.e., internal feelings of dirtiness or impurity that occur in the absence of a physical contaminant that are linked to a trauma; Herba & Rachman, 2007), and difficulties with emotion regulation (i.e., the awareness, evaluation, and modulation of emotional experiences; Gratz & Roemer, 2004). Finally, it was anticipated that the TRSI would have a modest, negative correlation with scores on a measure of self-compassion (i.e., self-directed care and kindness and forgiveness of one's own shortcomings; Neff, 2003).

3. **Compare the impact of trauma-related shame and trauma-related guilt on PTSD symptoms.** It was anticipated that when trauma-related shame and trauma-related guilt are examined together, trauma-related shame would account for a greater proportion of explained variance in PTSD symptoms in comparison with trauma-related guilt.
4. **Compare the impact of trauma-related shame and trait shame on PTSD symptoms.** It was anticipated that when trauma-related shame and trait shame are examined together, trauma-related shame would account for a greater proportion of explained variance in PTSD symptoms in comparison with trait shame. Trait shame will still be a unique predictor of explained variance in PTSD symptom severity.

1.3.2 Study 2

In Study 2, 32 community-recruited women with a history of IPV completed a series of questionnaires (including the TRSI) and two visits to the laboratory. The first visit included diagnostic interviews to assess for PTSD and other psychiatric diagnoses. During visit two, participants completed an autobiographical imagery task modeled upon

previously used laboratory procedures (Badour et al., 2011a; Freed & D'Andrea, 2015). During the task, participants were recorded as they completed a 5-minute oral recall of their index IPV experience. This recording was then played back for them to listen to, after which they sat in silence for a 5-minute recovery period. Participants answered questions about their current emotional experiences before the recording, after recording their experience, and after the recovery period. They also answered questions after the recovery period about their reactions to the imagery task (e.g., emotional experiences, emotion regulation use, and attitudes about emotion). Specific aims for Study 2 include the following:

1. **Evaluate the predictive validity of the TRSI on emotional reactivity in the context of trauma cues.** It was anticipated that TRSI scores would predict elevated feelings of shame following the trauma imagery task, and the effect size of TRSI on increases in shame will be higher than for increases in other emotions (i.e., fear, anxiety, sadness, anger, guilt, disgust).
2. **Evaluate the predictive validity of the TRSI on reactions to trauma imagery.** It was anticipated that TRSI scores would predict elevated: a) re-experiencing, b) dissociation, c) emotional suppression, d) fear of experiencing emotions, and e) perceived difficulty finishing the study if emotions were experienced (controlling for PTSD symptoms). It was anticipated that TRSI scores would predict lower: f) confidence in the ability to handle emotions, and g) perception that emotions would pass quickly (controlling for PTSD symptoms).

CHAPTER 2. STUDY ONE

2.1 Method

2.1.1 Participants

A total of 892 female participants were recruited from the University of Kentucky psychology subject pool and completed the study survey. Participants in the present study included a subset of 365 adult women (41%) who reported personally experiencing at least one instance of IPV based on endorsing at least one item on the Physical and Sexual Experiences section of the Trauma History Questionnaire (Hooper et al., 2011). Participants ranged in age from 18 to 31 years old ($M = 19.22$, $SD = 1.55$). Sexual orientations endorsed by participants included heterosexual (81.4%), bisexual (15.1%), gay/lesbian (1.1%), or not listed (e.g., asexual, pansexual, queer; 2.2%). The racial breakdown of participants was White (78.6%), Black/African American (9.6%), Asian (4.1%), American Indian/Alaska Native (0.3%), and Multiracial (5.5%). Additionally, 6.3% of participants identified as Hispanic. Participants reported their most distressing IPV experience to be forced intercourse or oral or anal sex against their will (43.7%), someone touching their private parts or their body or making them touch another person's private parts/body (22.8%), any other unwanted sexual contact (14.6%), someone attacking them without a gun, knife, or some other weapon (6.3%), someone attacking them without a weapon and seriously injuring them (6.3%), or someone in their family beating, spanking, or pushing them hard enough to cause injury (6.3%). Of the IPV-exposed sample, 29.3% ($n = 106$) met criteria for probable PTSD (defined as ≥ 37 on the PTSD Checklist for DSM-5; Blevins et al., 2015).

2.1.2 Procedure

All procedures were approved by the University of Kentucky Nonmedical Institutional Review Board. Participants were recruited from the University of Kentucky Psychology SONA subject pool. Female participants were invited to complete an online survey via the Qualtrics survey platform. Participants answered a demographic questionnaire as well as questions about their trauma history, PTSD symptoms, trauma-related shame, trauma-related guilt, trait shame and guilt, emotion regulation difficulties, self-compassion, and trauma-related mental contamination. In the survey, the general questionnaires (e.g., trait shame/guilt, self-compassion, emotion regulation) were completed first in a random order followed by the trauma history questionnaire. After completion of the trauma history questionnaire, all participants who indicated at least one instance of IPV were asked to identify their most distressing experience. Then, they completed questionnaires assessing PTSD symptoms, trauma-related shame, trauma-related guilt, and posttraumatic mental contamination (in a random order) anchored to their most distressing or only IPV experience. The online survey took no more than 50 minutes to complete; upon completion of the survey, participants were automatically granted one research credit.

2.1.3 Measures

Interpersonal violence history. History of IPV was assessed via the Physical and Sexual Experiences section of the Trauma History Questionnaire (THQ; Hooper et al., 2011). The Physical and Sexual Experiences section is comprised of seven questions assessing lifetime history of physical or sexual assault or abuse. Participants indicate with a “yes” or “no” as to whether they have experienced the event at any time during

their life. If the question was answered with “yes,” participants answered additional questions about the perpetrator(s), the number of times the event occurred, and the age(s) at which the event occurred. Participants who endorsed more than one item on the THQ were asked to select the event that they consider to be the worst. Endorsement of at least one of these questions met study eligibility for history of IPV. The THQ has been used across many populations, including women who experienced intimate partner violence (Humphreys et al., 1999), adults with histories of childhood trauma (Heilemann et al., 2005; Sacks et al., 2008; Spertus et al., 2003), and trauma-exposed undergraduates (Hooper et al., 2011). This measure demonstrates temporal stability in self-reported trauma history and validity across both clinical and nonclinical samples, including college students (Hooper et al., 2011).

PTSD symptoms. Past-month PTSD symptoms, anchored to the worst IPV event identified by the THQ, were assessed with the PTSD Checklist for DSM-5 (PCL-5; Blevins et al., 2015; Weathers et al., 2013). The PCL-5 is comprised of 20 questions that are answered on a scale of 0 (*Not at all*) to 4 (*Extremely*). Scores range from 0 to 80, and higher scores indicate a greater severity of symptoms; scores ≥ 37 on the PCL-5 have been deemed optimal for detecting probable PTSD in college students (Blevins et al., 2015). The PCL-5 has demonstrated strong retest reliability over one week ($r = .82$) as well as convergent and discriminant validity (Blevins et al., 2015; Bovin et al., 2016). Internal consistency is excellent ($\alpha = .94-.96$; Blevins et al., 2015; Bovin et al., 2016), including in the current sample ($\alpha = .97$).

Trauma-related shame. Trauma-related shame was measured via the Trauma-Related Shame Inventory (TRSI; Økstedalen et al., 2014) anchored to participants’ worst

IPV event defined by the THQ. The TRSI is comprised of 24 statements that respondents rate the level to which it describes how they thought or felt over the past week on a scale of 0 (*Not True of Me*) to 3 (*Completely True of Me*). Item scores are summed to create a total score, which may range from 0 to 72. The TRSI total score has demonstrated excellent internal consistency ($\alpha = .96-.98$; (DeCou, Kaplan, et al., 2019; DeCou, Mahoney, et al., 2019; Held et al., 2018; Kizilhan et al., 2020); internal consistency of internalized shame ($\alpha = 0.95-.96$) and externalized shame ($\alpha = 0.91-.97$) subscales are also excellent (Held et al., 2018; Zerach & Levi-Belz, 2018). In the current sample, internal consistency was excellent for the total score ($\alpha = .98$) and subscales (internalized shame: $\alpha = .98$; externalized shame: $\alpha = .96$). Additionally, the TRSI has demonstrated convergent validity as evidenced by positive associations with measures of self-judgment and depression as well as discriminant validity compared to a measure of trauma-related guilt (Øktedalen et al., 2014). The TRSI has been validated among individuals diagnosed with PTSD (Øktedalen et al., 2014) and has been used among a samples of undergraduate students who experienced sexual assault (DeCou, Kaplan, et al., 2019; DeCou, Mahoney, et al., 2019).

Trauma-related guilt. Trauma-related guilt was assessed using the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996). The TRGI is a 32-item measure used to specifically assess for guilt that began or worsened as a result of a traumatic event. The TRGI is comprised of three scales (i.e., Global Guilt, Distress, Guilt Cognitions), and the Guilt Cognitions scale is comprised of three subscales (i.e., Hindsight-Bias/Responsibility, Wrongdoing, and Lack of Justification). Respondents rate each item (e.g., “I could have prevented what happened to me”) on a 5-point Likert scale

ranging from 4 (*Extremely True*) to 0 (*Not at all true*). The TRGI has evidenced strong convergent validity with measures of trait guilt, PTSD, depression, self-esteem, avoidance, and suicidal ideation, and the TRGI appears to capture guilt-related cognitions not accounted for by general distress or negative affectivity (Kubany et al., 1996). Evidence for discriminant validity is demonstrated by low correlations between the TRGI and guilt proneness ($r < .10$) as well as between the TRGI and age and education (Kubany et al., 1996). The TRGI has also evidenced validity across various racial/ethnic groups, and it has been used among a variety of populations, including undergraduate students and a community sample of women exposed to violence (Kubany et al., 1996). Test-retest reliability for the TRGI is good over a period of 6 to 8 days ($r = .84-.86$), and internal consistency is excellent ($\alpha = .90-.94$; Kubany et al., 1996).

Although some research suggests that the Distress scale, compared to the other two scales, is uniquely associated with PTSD symptom severity—and the Distress scale along with shame may contribute unique variance to PTSD symptom severity (Bannister et al., 2019)—this subscale reflects general trauma-related reactivity (e.g., “What happened causes me emotional pain”) rather than guilt-specific responses. As such, the 22-item TRGI-Cognitions scale total score, which has been used as an outcome in clinical trials for PTSD treatment (e.g., Resick et al., 2008), was used to assess trauma-related guilt in the present study and was scored per instructions in Kubany et al. (1996). Internal consistency for the TRGI-Cognitions scale in the present study was excellent ($\alpha = .92$).

Trait shame and guilt. Trait shame and guilt were measured using the Test of Self-Conscious Affect-3 Short Version (TOSCA-3-SV; Tangney et al., 2000). The

TOSCA-3-SV asks respondents to reflect on 11 scenarios (e.g., “At work, you wait until the last minute to plan a project, and it turns out badly”) and use a Likert-type scale to rate how likely they would respond across four different cognitive/affective reactions (e.g., shame, guilt). The primary difference between the TOSCA-3 and the TOSCA-3-SV is that the short version does not include the positive scenarios; the TOSCA-3-SV is comprised of four subscales (shame proneness, guilt proneness, externalization, detachment/unconcern), but only the shame and guilt subscales were relevant to the present study. Both the shame and guilt subscales have demonstrated good internal consistency ($\alpha = .88$ and $\alpha = .83$, respectively; Tangney & Dearing, 2003). In the present study, the shame and guilt subscales evidenced acceptable internal consistency with $\alpha = .76$ for both. The TOSCA-3-SV has also demonstrated evidence of convergent and discriminant validity (Lacerenza et al., 2020; Rüsç et al., 2007).

Trauma-related mental contamination. The Posttraumatic Experience of Mental Contamination Scale (PEMC; Brake et al., 2019) was used to assess trauma-related mental contamination. The 20-item PEMC was adapted from the Vancouver Obsessional Compulsive Inventory-Mental Contamination Scale (VOCI-MC; Rachman, 2005) to specifically ask about mental contamination experiences after a trauma (e.g., “Since the event, I often cannot get clean no matter how thoroughly I wash myself.”). Respondents rate their agreement with each item on a scale of 0 (*Not at all*) to 4 (*Very much*), and higher scores indicate elevated trauma-related mental contamination. The PEMC has demonstrated strong convergent validity with the VOCI-MC ($r = .71, p < .001$), PTSD symptoms ($r = .62, p < .001$), depression ($r = .42, p < .001$), and contact contamination ($r = .54, p < .001$; Brake et al., 2019). The PEMC has demonstrated strong

internal consistency and support for a single-factor structure (Brake et al., 2019). Internal consistency of the PEMC for the present study was excellent ($\alpha = .98$).

Self-compassion. The Self Compassion Scale (SCS; Neff, 2003) is a 26-item measure used to assess self-compassion and captures six components of self-compassion (i.e., Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, Over Identification). Questions are rated on a scale of 1 (*Almost never*) to 5 (*Almost always*). A sample item is, “When I fail at something important to me I become consumed by feelings of inadequacy.” Internal consistency for the SCS total score is high ($\alpha = .92$), and internal consistencies of the subscales are also acceptable ($\alpha = .75-.81$; Neff, 2003). Convergent validity for the SCS has been demonstrated via negative correlations with measures of self-criticism, anxiety, and depression, as well as positive correlations with social connectedness and life satisfaction (Neff, 2003). Discriminant validity has been demonstrated via nonsignificant to moderate correlations with measures of narcissism and self-esteem, respectively (Neff, 2003). The SCS has been validated for use with undergraduate samples (Neff, 2003). Internal consistency for the SCS total score in the present study was excellent ($\alpha = .93$), and internal consistencies for the subscales were also strong (α 's = .78-.86).

Emotion regulation difficulties. General emotion regulation difficulties were assessed using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a widely used measure of emotion regulation difficulties and is comprised of six subscales: (a) lack of awareness of emotional responses, (b) lack of clarity of emotional responses, (c) nonacceptance of emotional responses, (d) limited access to emotion regulation strategies perceived as effective, (e) difficulties controlling

impulses when experiencing negative emotions, and (f) difficulties engaging in goal-directed behaviors when experiencing negative emotions. The DERS is comprised of 36 items, which are rated on a Likert scale from 1 (*Almost Never*) to 5 (*Almost Always*), and higher scores reflect more difficulties with emotion regulation. An example item from the DERS is “I experience my emotions as overwhelming and out of control.” The DERS has demonstrated excellent re-test reliability over a period of 4 to 8 weeks, strong internal consistency (total score: $\alpha = .93$; subscales: α 's $> .80$), and convergent validity with measures of experiential avoidance, expressive control, and self-harm (Gratz & Roemer, 2004). Discriminant validity for the DERS is evidenced by significantly higher correlations among individuals with generalized anxiety disorder compared to healthy controls (Roemer et al., 2009). Internal consistency for the DERS total score in the present study was excellent ($\alpha = .96$), and internal consistencies for the subscales were also acceptable (α 's = .85-.93).

2.1.4 Data Analytic Approach

Descriptive statistics were calculated using IBM SPSS Statistics (Version 26; IBM Corp, 2019). For data missing at random or completely at random, expectation maximization was used to impute missing data points (Tabachnick & Fidell, 2013). Data were examined for skewness and kurtosis for total scores and subscale scores of each measure.

To address hypothesis 1, confirmatory factor analysis (CFA) was conducted using MPlus (Version 7.4; Muthén & Muthén, 2006). The weighted least squares means and variance adjusted (WLSMV) estimator was used to accommodate the ordinal nature of the data, and one of the factor loadings for each factor was assigned a value of 1.0 (i.e.,

marker variable strategy). Goodness-of-fit was evaluated via chi-square fit statistics, root mean square error of approximation (RMSEA), and comparative fit index (CFI). Smaller chi-square and RMSEA values and larger CFI values indicate better fit. In particular, nonsignificant chi-square and CFI above .90 indicate good fit (Hu & Bentler, 1999). RMSEA values $\leq .05$ indicate good fit, and values from .08 to .10 indicate mediocre fit (Hu & Bentler, 1999; MacCallum et al., 1996). All fit indices were considered in evaluating model fit, and the best model was determined by the best overall fit indices. Models were also evaluated based on the law of parsimony, which suggests that simpler models are more likely to be true (Graham et al., 2003). First, model fit for a bifactor model of trauma-related shame was evaluated with internalized shame (reflecting items associated with self-directed shame), externalized shame (reflecting items associated with shame perceived from others), and general trauma-related shame (reflecting all items) as latent factors (Model 1). Next, a correlated two-factor model was examined with only internalized shame and externalized shame as latent factors (Model 2). Finally, a unidimensional model was examined with one latent trauma-related shame factor (Model 3). Although there is no definitive rule for determining the necessary sample size needed for CFA, some guidelines have included that $N \geq 200$ or that the ratio of sample size (N) to variables being measured (p) range from at least 3 to 10 (MacCallum et al., 1999; Myers et al., 2011). With a sample size of 365 and an $N:p$ ratio of 15 (i.e., $N = 365$; $p = 24$), the present sample satisfies these guidelines.

To address hypothesis 2, bivariate correlations between the TRSI and measures of trait shame and guilt, trauma-related guilt, PTSD symptoms, trauma-related mental contamination, difficulties with emotion regulation, and self-compassion were compared.

For the present study, a correlation between .10 and .30 was considered small, .30 to .50 was considered medium, and .50 to 1.0 was considered large (Cohen, 1988).

To address hypothesis 3, two hierarchical regression models were run with trauma-related shame and trauma-related guilt as predictors of PTSD symptoms. In model 3a, trauma-related guilt was entered in the first step of the regression model, and trauma-related shame was entered in Step 2. In model 3b, trauma-related shame was entered in the first step of the regression model, and trauma-related guilt was entered in Step 2. Utilizing both of these models will allow for comparison between each standalone predictor on PTSD symptoms. Power analysis was conducted using G*Power (3.1.7; Faul et al., 2007), which indicated that a minimum sample size of 88 is required to detect an effect of $f^2 = .15$ or greater with $\alpha = .05$ and $\beta = .90$ using two predictors in a multiple linear regression. The present sample surpassed these recommendations.

The regression models were supplemented by a relative weights analysis (RWA) to compare the contribution of trauma-related shame and trauma-related guilt to PTSD symptoms. Relative weights (also referred to as relative importance) are defined as the “proportionate contribution each predictor makes to R^2 , taking into account both the independent relationship with the criterion and its relationship when combined with other predictors” (p. 388; Tonidandel et al., 2009). RWA offers additional information to a multiple regression analysis by taking into account the multicollinearity of predictors that have moderate to high correlations (LeBreton et al., 2007). In doing so, RWA is able to indicate the impact of a particular predictor more accurately than standardized regression coefficients (Johnson, 2000). RWA uses a variable transformation approach by transforming correlated predictors into orthogonal variables, completing regression

analyses with the orthogonal predictors, and then converting the resulting standardized regression weights back into the original variable metric (Tonidandel & LeBreton, 2011, 2015). This process produces an estimate of relative importance for each predictor. RWA was conducted using RWA-Web (Tonidandel & LeBreton, 2015), a free, web-based resource for conducting relative weights analysis. Confidence intervals (CI) for the individual relative weights (Johnson, 2004) and corresponding significance tests were based on bootstrapping with 10,000 replications, as recommended by Tonidandel et al. (2009); 95% CIs were used for the individual relative weights and for differences between weights of predictors. The resulting relative weights statistics represent the amount of explained variance in PTSD symptoms uniquely accounted for by each predictor (i.e., trauma-related shame and trauma-related guilt).

For hypothesis 4, a hierarchical regression analysis was again used to compare the effects of trauma-related shame and trait shame on PTSD symptoms. In model 4a, trait shame was entered in the first step of the regression model, and trauma-related shame was entered in Step 2. In model 4b, trauma-related shame was entered in the first step of the regression model, and trait shame was entered in Step 2. Analyzing both of these models will allow for comparison between each standalone predictor on PTSD symptoms. RWA was also used to compare the contributions of trauma-related shame and trait shame to PTSD symptoms.

2.2 Results

Hypothesis 1 evaluated the structural validity of the TRSI. Model fit indices from the CFAs are depicted in Table 2.1. The first model examined was Model 1, the bifactor model consisting of internalized shame, externalized shame, and general trauma-related shame as latent factors. Estimation problems were encountered for this model because

the psi matrix was not positive definite, apparently due to overly high correlations between factors. Next, the correlated two-factor model consisting of internalized and externalized shame factors was examined (Model 2). This model demonstrated acceptable fit to the data and strong factor loadings (see Figure 2.1). Lastly, the unidimensional model was examined (Model 3), which consisted of a general latent trauma-related shame factor. This model also demonstrated acceptable fit to the data and strong factor loadings (see Figure 2.2). Of note, the chi-square value for both models was significant; however, chi-square values are sensitive to sample size, and models with significant chi-square values may still be evaluated based on additional fit indices (Vandenberg, 2006). Given that the correlated two-factor and unidimensional models fit equally well, the law of parsimony suggests that this construct may be best represented by a model consisting of a single factor (general trauma-related shame).

Hypothesis 2 was focused on comparing bivariate correlations of the TRSI with measures of trait shame and guilt, trauma-related guilt, PTSD symptoms, trauma-related mental contamination, difficulties with emotion regulation, and self-compassion. It was hypothesized that the TRSI would be positively correlated with trait shame, but that scores would provide evidence of the unique nature of the underlying constructs being assessed. It was further anticipated that scores on the TRSI would have modest, positive correlations with measures of trauma-related guilt, trait guilt, PTSD symptoms, trauma-related mental contamination, and difficulties with emotion regulation. Finally, it was predicted that the TRSI would have a modest, negative correlation with scores on a measure of self-compassion. Results were generally in line with hypotheses and are depicted in Table 2.2. As predicted, the TRSI total score demonstrated only a moderate,

positive correlation with trait shame ($r = .34, p < .01$); the TRSI was not significantly correlated with trait guilt. (Notably, trait guilt demonstrated a negative correlation with self-compassion, but was not correlated with any other study variable.) The TRSI also demonstrated only a moderately strong positive correlation with trauma-related guilt ($r = .54, p < .01$; via the TRGI-Cognitions scale), supporting the notion that trauma-related shame and guilt are distinct constructs. The TRSI demonstrated a moderate correlation with a measure of emotion regulation difficulties ($r = .47, p < .01$; via the DERS). Correlations between the TRSI and subscales of the DERS were small ($r = .21, p < .001$; DERS Awareness) to moderate ($r = .45, p < .001$; DERS Lack of Strategies), suggesting that the TRSI is not a reflection of general emotion dysregulation. The TRSI demonstrated the highest correlation with trauma-related mental contamination ($r = .74, p < .01$; via the PEMC)—which was expected given the high degree of overlap between feelings of shame and feelings of internal dirtiness—and the second highest correlation with PTSD symptoms ($r = .71, p < .01$). Additionally, and also in line with hypotheses, the TRSI demonstrated a moderate, negative correlation with a measure of self-compassion ($r = -.36, p < .01$; via the SCS); looking at the subscale level, the TRSI demonstrated a small correlation with self-kindness ($r = -.23, p < .001$) and a moderate correlation with self-judgement ($r = -.33, p < .001$). The SCS subscale demonstrating the strongest correlation with the TRSI was Isolation ($r = -.37, p < .001$). These results suggest that trauma-related shame and self-compassion are related, yet distinct, constructs; trauma-related shame is not simply a lack of self-kindness or elevated self-judgement.

Hypothesis 3 was focused on comparing the contributions of trauma-related shame and trauma-related guilt on PTSD symptoms. It was anticipated that when trauma-related shame and trauma-related guilt were examined together, trauma-related shame would account for a greater proportion of explained variance in PTSD symptoms compared to trauma-related guilt. Results supported this hypothesis (see Table 2.3). In Step 1 of Model 3a, trauma-related guilt was a significant predictor that accounted for 13% of the variance ($p < .001$) in PTSD symptoms. However, this effect became non-significant after trauma-related shame was included in the model in Step 2 ($p = .61$), and only trauma-related shame significantly predicted PTSD symptoms. Trauma-related shame accounted for an additional 37% of variance ($p < .001$). Model 3b shows the results with trauma-related shame entered in Step 1, and trauma-related guilt in Step 2; Model 3b results found that trauma-related guilt accounted for less than 1% of additional variance in PTSD symptoms after accounting for trauma-related shame. Results from the relative weights analysis are depicted in Table 2.4 and Figure 2.3. Findings indicated that both trauma-related shame and trauma-related guilt were significant predictors of PTSD symptom severity, because neither CI spanned 0. Together, trauma-related shame and guilt accounted for 50.28% of the total variance in PTSD symptom severity. Whereas trauma-related guilt accounted for 12.06% of the explained variance, trauma-related shame accounted for 87.94% of the explained variance in PTSD symptom severity. Comparison between the relative weights of trauma-related shame and guilt showed that trauma-related shame was a significantly stronger predictor than trauma-related guilt, 95% CI [-0.47, -0.30]. These findings differ slightly from the traditional multiple regression analysis, which indicated that trauma-related guilt did not provide a

statistically significant incremental effect in the prediction of PTSD symptoms, controlling for trauma-related shame. The lack of agreement between regression coefficients and relative weights is not uncommon (Tonidandel et al., 2009) and reflects the fact that these statistics are answering different questions. Specifically, regression weights are focused on incremental prediction, but when predictors are correlated, variables that yield a significant bivariate correlation may not yield a significant incremental relationship. Relative weights, on the other hand, are focused on explaining non-trivial variance in the outcome within the presence of additional, possibly correlated, predictors (Tonidandel & LeBreton, 2015). As such, the correlation between trauma-related shame and trauma-related guilt likely resulted in trauma-related guilt explaining little unique, incremental variance.

Hypothesis 4 was focused on comparing the contributions of trauma-related shame and trait shame on PTSD symptoms. It was anticipated that when trauma-related shame and trait shame were examined together, trauma-related shame would account for a greater proportion of explained variance in PTSD symptoms in comparison with trait shame, but that trait shame would still be a unique predictor of PTSD symptoms. Results supported this hypothesis (see Table 2.5). In Step 1 of Model 4a, trait shame was a significant predictor, accounting for 12% of the variance in PTSD symptoms ($p < .001$). The effect of trait shame weakened, although remained significant ($p < .001$), once trauma-related shame was included in the model (Step 2). Trauma-related shame accounted for an additional 40% of variance ($p < .001$) in PTSD symptoms. Model 4b depicts the results with trauma-related shame entered in Step 1, and trait shame in Step 2; this model found that trait shame accounted for an additional 1% of the variance in

PTSD symptoms after accounting for trauma-related shame. Results from the relative weights analysis are shown in Table 2.6 and Figure 2.4. Findings indicated that both trauma-related shame and trait shame were significant unique predictors of PTSD symptom severity, because neither CI spanned 0. Together, trauma-related shame and trait shame accounted for 51.43% of the total variance in PTSD symptom severity. Whereas trait shame accounted for 12.65% of the explained variance, trauma-related shame accounted for 87.35% of the explained variance in total PTSD symptom severity. Comparison between the relative weights of trauma-related shame and trait shame showed that trauma-related shame was a significantly stronger predictor than was trait shame, 95% CI [-0.48, -0.29].

2.3 Discussion

The purpose of Study 1 was threefold: to evaluate the structure and validity of the TRSI as well as to examine the contributions of trauma-related shame via the TRSI to PTSD symptoms relative to trait shame and trauma-related guilt. This study represents an important extension to the literature by being the first study to apply CFA to the TRSI and to systematically evaluate the construct validity of the TRSI specifically among a sample of women with IPV histories. With regard to the TRSI's structural validity, it was surprising that the bifactor model of trauma-related shame did not fit the data, given that the initial validation paper appeared to propose a homogenous general trauma-related shame factor as well as two specific factors (i.e., internalized shame and externalized shame), evidenced by the promotion of a total TRSI score and two subscale scores. It is important to note, though, that the TRSI authors never explicitly stated whether the measure was intended to fit a bifactor structure (Øktedalen et al., 2014). Regardless, the use of bifactor models within psychopathology has been met with criticism, including

that these models are prone to overfitting data resulting in unstable or invalid estimates (see Watts et al., 2019). Results of the current study suggested that both the correlated two-factor and unidimensional factor models of the TRSI fit equally well; however, it is concluded that, based on the law of parsimony, a unidimensional factor may more accurately represent this construct, ultimately supporting the conclusions drawn by Økstedalen et al. (2014) that the measure may more accurately reflect one general construct. Although trauma-related shame may be comprised of both self and other evaluations, the high correlations of the two TRSI subscales and the strong factor loadings on the unidimensional factor model suggest that perhaps trauma-related shame is best represented by both of these evaluations without any specific distinction between the two. In reflecting upon the clinical significance of the two-factor model, it seems unlikely that an individual would be especially high on one and especially low on the other. Furthermore, it is also unclear whether the course of treatment would change based on which factor of trauma-related shame an individual scores more highly. While understanding an individual's self and other perceptions may be important in identifying specific shame-inducing cognitions, it is unclear that different treatments would be recommended. For instance, it seems likely that cognitive reappraisal and exposure-based approaches in the form of talking about the shame-inducing event may still be prescribed regardless of internally- or externally-driven shame. As such, the two-factor model may not meaningfully contribute to clinical treatment, although future research may explore whether individuals with internally-driven versus externally-driven shame respond differently to different interventions.

The present study also found that the TRSI demonstrated evidence of convergent and discriminant validity with other trauma-related (i.e., trauma-related guilt, trauma-related mental contamination, PTSD symptoms) and general (i.e., trait shame, trait guilt, emotion regulation difficulties, self-compassion) constructs. In terms of convergent validity, the TRSI demonstrated the highest correlations with trauma-related mental contamination and PTSD symptoms. Given that both trauma-related shame and mental contamination involve perceptions of the self as tainted, flawed, or even disgusting, it was unsurprising that these constructs were strongly correlated. The TRSI also demonstrated a positive correlation with PTSD symptoms that was higher than in prior research with samples of sexual assault survivors (e.g., $r = .53, p < .001$; DeCou, Mahoney, et al., 2019). However, participants in the study conducted by DeCou, Mahoney, and colleagues (2019) had to have disclosed their assault to at least one other person, whereas the present study had no such requirement. Thus, it is possible that some of the differences in the shame-PTSD association may be related to the experience of disclosure. Although, it is worth noting that participants in the DeCou, Mahoney et al. (2019) study had comparable mean levels of trauma-related shame and PTSD symptoms to the present study. Overall, it is not unexpected for trauma-related shame to be strongly related to PTSD, given that symptoms of PTSD include negative cognitions about the self and increases in negative emotions, including shame. The TRSI was related to, yet distinct from, trait shame and trauma-related guilt, and showed a non-significant correlation with trait guilt. This finding adds to the increasing body of literature on the distinct nature of these emotions and implies that researchers should be very intentional when determining how to measure shame and guilt, with particular considerations for

trauma-exposed samples as to whether trait or trauma-focused measurement is warranted. Lastly, discriminant validity was further supported through small correlations between the TRSI and the DERS and SCS in the expected directions, supporting the notion that the TRSI is tapping into a unique, trauma-specific distress not simply driven by poor emotion regulation or low self-compassion. However, significant correlations between these constructs and the TRSI suggest they are indeed related, and emotion regulation and self-compassion may be viable intervention targets for shame after trauma. Future research assessing the prospective relationships between emotion regulation and self-compassion on trauma-related shame may further explicate the associations between these constructs and the potential effectiveness of relevant interventions.

The two final sets of analyses sought to build upon prior research by testing whether trauma-related shame is more predictive of PTSD symptoms than trauma-related guilt and trait shame. The present study supports the findings of Cunningham et al. (2018), who found that trauma-related shame was a stronger predictor of trauma-related guilt in a sample of veterans and active duty service members. Furthermore, in both the present and Cunningham et al. (2018) studies, trauma-related guilt became non-significant as a predictor of PTSD symptoms in the multiple regression model after trauma-related shame was included. Similarly, relative weights analyses in both studies showed that trauma-related guilt was a significant predictor of explained variance in PTSD symptoms. While trauma-related shame accounted for 65% of the accounted variance in PTSD symptoms in Cunningham and colleagues' (2018) study, the present study found that trauma-related shame accounted for 88% of the accounted variance in

PTSD symptoms. Although both studies utilized the same measure for PTSD symptoms, Cunningham et al. utilized a study-developed measure of trauma-related shame and guilt based on a composite of empirically-established measures, while the present study utilized the TRSI and TRGI-Cognitions scale as designed and unaltered. As such, measurement differences may have influenced the difference in results. It is also possible that the different samples were responsible for the variations in contributions of trauma-related shame to PTSD, although the most common index trauma in the Cunningham et al. study was non-combat-related interpersonal traumas (58%). Nevertheless, both studies showed consistent results, with the present study providing further evidence that trauma-related shame appears to be more strongly linked to PTSD symptoms than trauma-related guilt. Findings provide more evidence of the importance in distinguishing and assessing shame and guilt, particularly within trauma-focused research and treatment.

The current study also presented a direct head-to-head comparison of trait shame versus trauma-related shame on PTSD symptoms. Although a prior investigation compared the effect of trauma-related shame to trait shame on trauma-related psychopathology using a single-item rating (Semb et al., 2011), research replicating this finding using a more thorough assessment of trauma-related shame was sorely needed. As such, the present study's finding that the TRSI was indeed more strongly associated with PTSD symptoms than trait shame was an important step towards increasing confidence that trauma-related and trait shame are indeed distinct constructs with distinct implications for PTSD. This finding further supports the need to include measures of trauma-related shame, in addition to (or instead of) trait shame, when examining the

course of PTSD symptoms, including as a potential outcome for intervention trials. It will be important for future studies to examine how measures of change in trait- versus trauma-related shame compare across different longitudinal intervals (e.g., weeks, months, years).

In conclusion, Study 1 offers support for the structural and construct validity of the TRSI. Specifically, Study 1 suggests that the TRSI does represent an underlying trauma-related shame factor that is related, yet distinct, from trait shame, trauma-related guilt, and PTSD symptoms, among other variables. Several limitations exist that warrant discussion. One limitation is that the study's sample was comprised of female undergraduate students who were predominantly heterosexual and White. As such, future research is needed to replicate these findings in more diverse samples to identify potential cultural differences in how trauma-related shame is (or could be) assessed to increase validity. For instance, shame is viewed differently across cultures (see Yakeley, 2018), and in some—particularly more collectivist—cultures, shame may be viewed as healthy and/or a pro-social emotion (e.g., Menon & Shweder, 1994). It is also possible that trauma-related shame is more relevant or strongly linked to PTSD in some cultures, but not in others. Relatedly, it will also be important to test the structural validity of the TRSI among other populations for whom shame may be an important clinical consideration, such as among military service members/veterans and men with sexual assault histories.

With particular regard to the findings that trauma-related shame is more predictive of PTSD symptoms than trait shame and trauma-related guilt, the present study was limited in its assessment of PTSD and that PTSD symptoms were relatively

low on average. Yet it is worth acknowledging that nearly 30% of the sample met PCL-5 cut-offs indicating probable PTSD, which corresponds to national estimates of PTSD after IPV among women in the United States (28-30%; Resnick et al., 1993). Both the present study and the Cunningham et al. (2018) study used the PCL-5 as a measure of PTSD symptoms. As such, replication of these results in studies utilizing a more thorough assessment method, such as a structured interview (e.g., the Clinician-Administered PTSD Scale; Weathers et al., 2018), may provide a more refined assessment of PTSD symptoms and the ability to provide a PTSD diagnosis; although, it is worth noting that PCL-5 scores are highly correlated with interview measures of PTSD ($r = .66, p < .01$; Weathers et al., 2018). Though the present study was an important first step in evaluating the validity and reliability of the TRSI among women with IPV histories, these data were cross-sectional. As such, the present study cannot speak to whether the TRSI actually predicts feelings of shame in the context of trauma memories. Therefore, Study 2 was conducted as a preliminary step in evaluating the predictive validity of the TRSI by addressing the question of whether the TRSI actually predicts increases in state shame in the context of trauma memories.

Table 2.1 Confirmatory Factor Analysis Fit Indices

Model #	Type	Tested Factors	χ^2 (df)	RMSEA	CFI
Model 1	Bifactor ^a	Trauma-Related Shame Externalized Trauma-Related Shame Internalized Trauma-Related Shame	—	—	—
Model 2	Correlated Two-Factor	Externalized Trauma-Related Shame Internalized Trauma-Related Shame	1085.43* (251)	0.095	0.97
Model 3	Unidimensional	Trauma-Related Shame	1112.57* (252)	0.097	0.97

Note. χ^2 (df) = Chi-Square (Degrees of Freedom); RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; * $p < 0.001$. ^aBifactor model was not positive definite and did not converge.

Table 2.2 Descriptive Data and Zero-Order Relations among Continuous Predictor and Criterion Variables (Study 1)

	1	2	3	4	5	6	7	8
1. Trauma-related shame (TRSI)	15.33 (17.91)							
2. Trait shame (TOSCA)	.34**	36.67 (8.15)						
3. Trait guilt (TOSCA)	.04	.39**	46.44 (5.84)					
4. Trauma-related guilt (TRGI-Cognitions)	.54**	.16**	.03	1.52 (0.79)				
5. PTSD symptoms (PCL-5)	.71**	.34**	.07	.37**	24.33 (20.81)			
6. Trauma-related mental contamination (PEMC)	.74**	.31**	.01	.45**	.66**	16.86 (19.46)		
7. Emotion regulation difficulties (DERS)	.47**	.51**	.07	.25**	.56**	.40**	98.95 (28.37)	
8. Self-compassion (SCS)	-.36**	-.50**	-.11*	-.21**	-.42**	-.28**	-.72**	2.68 (0.67)

Note. * $p < .05$; ** $p < .01$. Means are located in the diagonal with standard deviations in parentheses.

Table 2.3 Hierarchical Linear Models of Effects of Trauma-Related Shame and Trauma-Related Guilt on PTSD Symptoms

	β	t	Omnibus F (1, 363)	Omnibus R^2	$F \Delta$ (2, 362)	$R^2\Delta$
Model 3a						
<i>Step 1</i>			55.79***	.13	—	—
Trauma-related guilt	.37***	7.47				
<i>Step 2</i>			182.73***	.50	268.55***	.37
Trauma-related guilt	-.02	-0.52				
Trauma-related shame	.72***	16.39				
Model 3b						
<i>Step 1</i>			365.94***	.50	—	—
Trauma-related shame	.71***	19.13				
<i>Step 2</i>			182.73***	.50	0.27	< .001
Trauma-related shame	.72***	16.39				
Trauma-related guilt	-.02	-0.52				

Note. β = standardized beta weight; *** $p < 0.001$.

Table 2.4 Analysis of Relative Weights of Trauma-Related Shame and Guilt on PTSD Symptoms

Predictor	RW	CI-L	CI-U	RS-RW
Trauma-related shame	0.44*	0.36	0.52	87.94%
Trauma-related guilt	0.06	0.03	0.10	12.06%

Note. RW = raw relative weight (within rounding error raw weights will sum to R^2); CI-L = lower bound of confidence interval used to test the statistical significance of raw weight; CI-U = upper bound of confidence interval used to test the statistical significance of raw weight; RS-RW = relative weight rescaled as a percentage of predicted variance in the criterion variable attributed to each predictor (within rounding error rescaled weights sum to 100%).

*The RW for trauma-related shame differs significantly from the RW obtained for trauma-related guilt.

Table 2.5 Hierarchical Linear Models of Effects of Trauma-Related Shame and Trait Shame on PTSD Symptoms

	β	t	Omnibus F (1, 363)	Omnibus R^2	$F \Delta$ (2, 362)	$R^2\Delta$
Model 4a						
<i>Step 1</i>			48.51***	.12	—	—
Trait shame	.34***	6.97				
<i>Step 2</i>			191.64***	.51	295.43***	.40
Trait shame	.12**	3.02				
Trauma-related shame	.67***	17.19				
Model 4b						
<i>Step 1</i>			365.94***	.50	—	—
Trauma-related shame	.71***	19.13				
<i>Step 2</i>			191.64	.51	9.14**	.01
Trauma-related shame	.67***	17.19				
Trait shame	.12**	3.02				

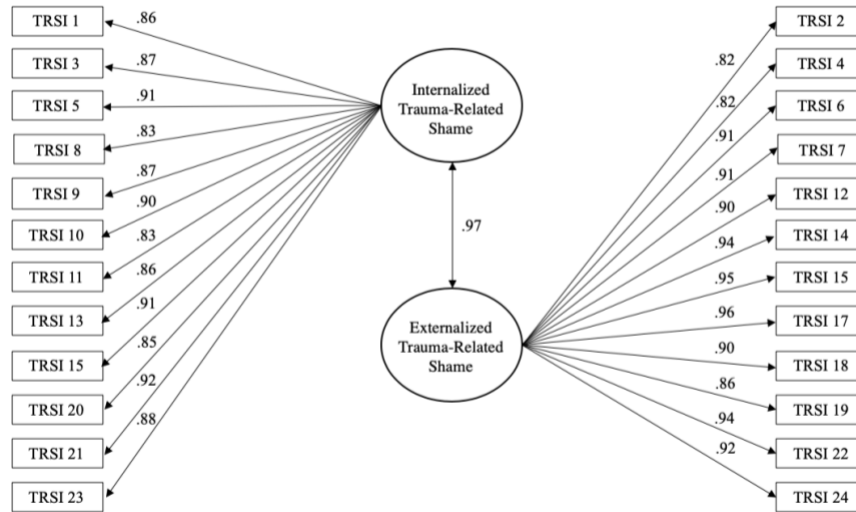
Note. β = standardized beta weight; ** $p < .01$; *** $p < .001$.

Table 2.6 Analysis of Relative Weights of Trauma-Related Shame and Trait Shame on PTSD Symptoms

Predictor	RW	CI-L	CI-U	RS-RW
Trauma-related shame	0.45*	0.36	0.53	87.35%
Trait shame	0.07	0.03	0.11	12.65%

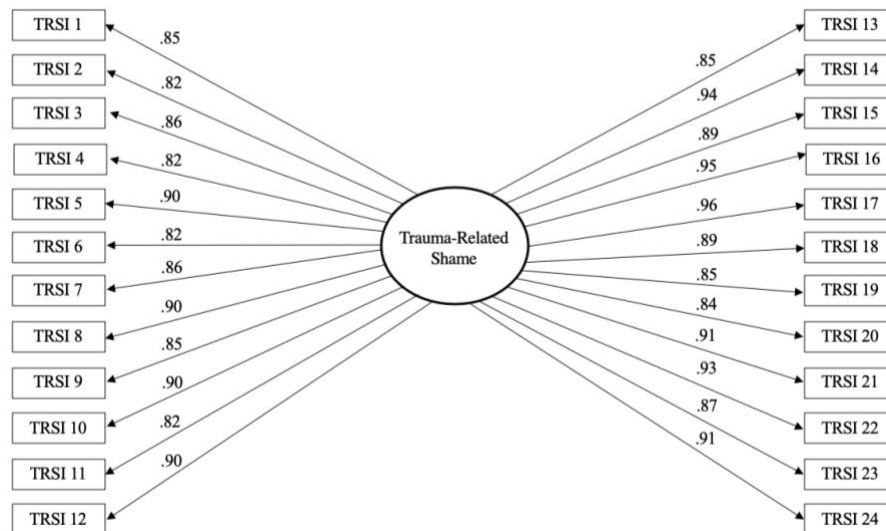
Note. RW = raw relative weight (within rounding error raw weights will sum to R^2); CI-L = lower bound of confidence interval used to test the statistical significance of raw weight; CI-U = upper bound of confidence interval used to test the statistical significance of raw weight; RS-RW = relative weight rescaled as a percentage of predicted variance in the criterion variable attributed to each predictor (within rounding error rescaled weights sum to 100%). *The RW for trauma-related shame differs significantly from the RW obtained for trait shame.

Figure 2.1 Correlated Two-Factor Model with Factor Loadings



Note. All factor loadings p 's < 0.001.

Figure 2.2 Unidimensional Model with Factor Loadings



Note. All factor loadings p 's < 0.001.

Figure 2.3 Unique Variance in PTSD Symptom Severity Accounted for by Trauma-Related Shame and Guilt

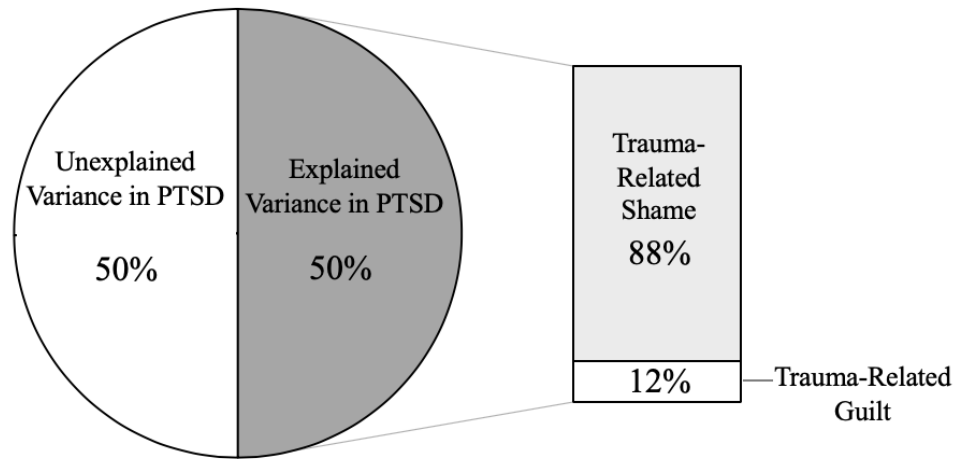
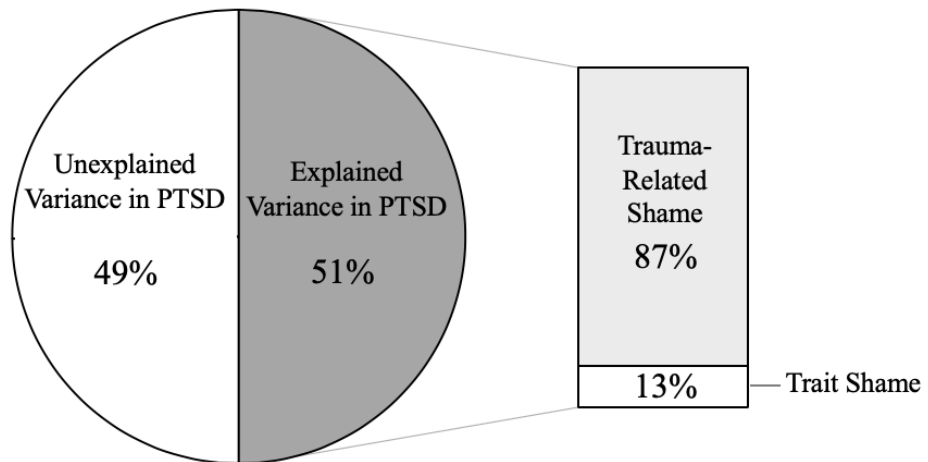


Figure 2.4 Unique Variance in PTSD Symptom Severity Accounted for by Trauma-Related Shame and Trait Shame



CHAPTER 3. STUDY TWO

3.1 Method

3.1.1 Participants

Participants for the present study ($n = 32$; $M_{\text{age}} = 33.31$, $SD = 13.26$) were randomized into a trauma condition as part of a larger study on the emotional impact of IPV ($N = 60$; $M_{\text{age}} = 35.25$, $SD = 13.33$). All participants reported a history of IPV (i.e., any instance of physical or sexual assault or abuse) and were recruited from the community surrounding the University of Kentucky. Exclusion criteria included the inability to provide informed, voluntary, written consent, and the limited ability to read or write in English. Sexual orientations endorsed by participants included heterosexual (84.4%), gay/lesbian (6.3%), and bisexual (9.5%). The racial breakdown of participants was White (68.8%), Black/African American (21.9%), Asian (3.1%), Native Hawaiian/Other Pacific Islander (3.1%), and Multiracial (3.1%). Additionally, 9.3% of participants identified as Hispanic. Employment status among participants varied: Employed full-time (34.4%), student (28.1%), employed part-time (21.9%), and unemployed (15.7%). The majority of participants were single (50.0%) or divorced (21.9%). With regard to education, 46.9% had completed some college, 15.6% had completed some graduate or professional school, 15.6% completed graduate or professional school, 12.5% graduated from a 4-year college, and 9.4% graduated from a 2-year college. Annual household income ranged from less than \$20,000 (43.8%), \$20,000 to less than \$40,000 (21.9%), \$40,000 to less than \$60,000 (18.8%), \$60,000 to less than \$80,000 (3.1%), and greater than \$100,000 (12.5%).

3.1.2 Procedure

All procedures were approved by the University of Kentucky Nonmedical Institutional Review Board. Advertisements were posted on an online forum listing current research studies at the University of Kentucky, and flyers were posted around campus (e.g., library, medical center) as well as the surrounding community (e.g., in coffee shops, restaurants). Interested participants were invited to call the research laboratory to complete a phone screening. The phone screening lasted about 15 minutes and involved questions about participants' history of IPV. Individuals deemed eligible (i.e., those reporting a direct experience of physical or sexual assault or abuse) were invited to participate. Participants were asked to complete a series of baseline questionnaires prior to arriving to the laboratory for their first session. The first session lasted approximately two to three hours, during which a trained graduate student conducted interviews to assess PTSD (anchored to participants' worst IPV event) as well as measures not relevant to the current investigation. At the end of Visit 1, participants were provided with a list of local mental health referrals as well as information about common reactions to trauma; they were compensated \$30 for their time. Visit 2 was scheduled at the end of Visit 1 to take place roughly one week later. During Visit 2, participants participated in a computer task not relevant to the present study. Next, participants completed a series of questionnaires, including the TRSI, and were then randomized into a neutral or trauma condition; only data from participants in the trauma condition are relevant to the present study. Those in the trauma condition were recorded for five minutes talking about their index IPV experience, after which the recording was played back for participants to listen to. After the recording was played back, participants

sat in silence for a five-minute recovery period, during which they continuously rated their level of distress via a slider tool. Before the recording (T1), after creating the recording (T2), and after the recovery period (T3), participants rated their state emotions. After the recovery period, participants also answered questions about their reactions to the imagery procedure. At the end of visit 2, participants were offered an optional relaxation exercise and compensated with \$30.

3.1.3 Measures

PTSD symptoms. Past-month PTSD symptoms and past-month PTSD diagnostic status were assessed using the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5; Weathers et al., 2013). The CAPS-5 is a semi-structured interview assessing each of the 20 PTSD symptoms, with additional questions assessing distress, social/work interference, and dissociation. The CAPS-5 is considered the gold standard in PTSD assessment and has demonstrated strong interrater reliability and re-test reliability over a period of 1 to 6 days (Weathers et al., 2018). Evidence of convergent validity lies in high correlations between the CAPS-5 and other diagnostic measures of PTSD (e.g., CAPS-IV and PCL-5). This measure has further demonstrated discriminant validity via low correlations with measures of general anxiety, depression, and psychopathy (Weathers et al., 2018). For the present study, the CAPS-5 was anchored to participants' worst IPV experiences. PTSD diagnostic status was computed based on the SEV2 scoring rule for determining symptom counts within each criterion (Weathers et al., 2018). Internal consistency in the present sample was excellent ($\alpha = .90$). A graduate researcher trained in the CAPS-5 conducted all participant interviews, and 20% of interviews were randomly selected and coded for interrater reliability using Cohen's Kappa for diagnostic

reliability ($\kappa = 1.0$) and two-way mixed, absolute, single-measures ICCs for reliability in individual symptom severity ratings (ICCs: .92 - 1.0; Hallgren, 2012).

Trauma-related shame. Trauma-related shame was assessed via the TRSI. A description of the TRSI's psychometric properties are located in the Measures section of Study 1. Internal consistency of the TRSI total score in the present sample was excellent ($\alpha = .96$).

State negative emotion. State fear, anxiety, anger, disgust, shame, guilt, and sadness were measured with a visual analog scale from 0 (*Not at all*) to 100 (*Extremely*) administered via Qualtrics. Participants reported their state emotions three times: prior to recording their IPV experience (T1), after being recorded talking about their IPV experience (T2; approximately 5 minutes after T1), and after the playback and recovery period (T3; approximately 10 minutes after T2). Single-item visual analog scales have been widely used to assess state emotion in prior trauma imagery research with trauma-exposed samples (e.g., Badour et al., 2011b; Olatunji et al., 2009; Pitman et al., 1987).

Reactions to trauma imagery. Reactions to listening to trauma imagery were measured via questions regarding emotional reactivity (e.g., re-experiencing, dissociation), emotion regulation, and attitudes about emotion during the playback and recovery period. Questions about re-experiencing (2 items) and dissociation (4 items) were taken from the Responses to Script Driven Imagery scale (RSDI; Hopper et al., 2007), and the remaining questions were developed for the present study. All questions were answered on a 7-point Likert scale from 0 (*Not at all*) to 6 (*A great deal*). Sample questions included: "Did you have physical reactions in your body (for example, sweaty, racing heart, trembling, short of breath)?" (re-experiencing), "Did you feel disconnected

from your body?” (dissociation), “Did you want to suppress your emotions?” (emotion regulation), and “Were you afraid to experience any emotions?” (attitudes about emotions). See Appendix A for the full list of Responses to Trauma Imagery questions. These questions were administered at T3 (after the state emotion questions), and participants were prompted to answer these questions based on their experience while listening to the recording.

3.1.4 Data Analytic Approach

All analyses were calculated using IBM SPSS Statistics (Version 26; IBM Corp, 2019). For data missing at random or completely at random, expectation maximization was used to impute missing data points (Tabachnick & Fidell, 2013). Descriptive statistics and zero-order correlations were examined among all primary variables (see Table 3.1). Hypotheses 5 and 6 were tested using multiple linear regression. For hypothesis 5, the TRSI total score was entered as a predictor with two covariates (PTSD symptoms and baseline levels of the respective negative emotion) in seven separate models predicting individual negative emotions at T2 and T3 (i.e., fear, anxiety, sadness, anger, shame, guilt, and disgust). For example, TRSI scores, PTSD symptoms, and T1 shame were entered as predictors of T2 and T3 shame. A Benjamini-Hochberg (B-H) procedure was used for alpha corrections (Benjamini & Hochberg, 1995; Thissen et al., 2002). Standardized regression coefficients were used to compare the effect of TRSI scores on each outcome.

For hypothesis 6, the TRSI total score was entered as a predictor (with PTSD symptoms as a covariate) in seven separate models predicting reactions to the trauma imagery task, namely: 1) re-experiencing, 2) dissociation, 3) emotional suppression, 4)

fear of experiencing emotions, 5) perceived difficulty finishing the study if emotions were experienced, 6) confidence in the ability to handle emotions, and 7) the perception that emotions would pass quickly. A B-H procedure was again used for alpha corrections (Benjamini & Hochberg, 1995; Thissen et al., 2002), and standardized regression coefficients were used to compare the effect of TRSI scores on each outcome. A power analysis using G*Power (3.1.7; Faul et al., 2007) indicated that a minimum sample size of 40 is required to detect a large effect ($f^2 = .35$), and 88 is required to detect a medium effect ($f^2 = .15$), with $\alpha = .05$ and $\beta = .90$ using two predictors in linear multiple regression. Given that the current sample is underpowered to detect medium to small effects, these models will be exploratory in nature, and the focus of results will be on effect sizes. Non-significant findings should thus be interpreted cautiously due to the possibility of Type II error, particularly given the conservative approach to alpha correction for multiple comparisons.

3.2 Results

About half (46.9%) of participants reported that their worst IPV experience occurred before age 18 ($M_{\text{ageoftrauma}} = 19.03$, $SD = 8.05$; Range = 5 to 39 years old). The majority (65.6%) of participants reported an index trauma involving sexual violation. The predominant perpetrator reported by participants was a dating/intimate partner (28.1%) or father/step-father (15.6%). CAPS-5 scores ranged from 0 to 53 ($M = 21.69$; $SD = 12.23$). Regarding PTSD diagnostic status, 53.1% ($n = 17$) participants met criteria for PTSD, and 18.8% ($n = 6$) met criteria for partial PTSD. Partial PTSD (also referred to as “subthreshold PTSD”) was defined as meeting criteria for two or three of the four PTSD symptom clusters as well as at least moderate distress or social/occupational

impairment (McLaughlin et al., 2015). There was not a significant difference in TRSI scores between those who did ($M = 24.18$, $SD = 13.57$) and did not ($M = 17.13$, $SD = 20.04$) meet criteria for a PTSD diagnosis, $t(30) = -1.18$, $p = .25$.¹

Zero-order correlations among primary study variables are shown in Table 3.1. Of note, TRSI scores were significantly positively correlated with PTSD symptoms and state shame at all time points. PTSD symptoms were positively correlated with state shame at T2 and T3, but not at T1 (baseline). Time since trauma was only (negatively) associated with T3 shame.

Hypothesis 5 focused on the validity of the TRSI in predicting shame in the context of trauma memories. Specifically, it was hypothesized that TRSI scores would predict elevated feelings of state shame following the trauma imagery task, and the effect size of TRSI on increases in shame would be higher than for increases in other emotions (i.e., fear, anxiety, sadness, anger, guilt, disgust) controlling for PTSD symptoms and baseline levels of each respective emotion. Table 3.2 depicts the results of the regression models in predicting T2 (post-recording) and T3 (post-playback) individual negative emotions. With regard to T2 emotions, hypothesis 5 was supported; the TRSI demonstrated a positive, significant association with shame as well as with fear, disgust, and guilt. As hypothesized, the TRSI was most strongly associated with T2 shame, because it had the largest standardized regression coefficient ($\beta = .61$) compared to the other T2 emotions. Notably, the TRSI accounted for 24% of the variance in T2 shame. With regard to T3 emotions, the TRSI was again positively associated with shame,

¹ Of note, when using the full ($N = 60$) sample, there was a significant difference in TRSI scores between those who did ($n = 30$; $M = 29.30$, $SD = 17.15$) and did not ($n = 30$; $M = 15.13$, $SD = 16.26$) meet criteria for PTSD, $t(58) = -3.28$, $p = .002$.

accounting for 21% of the variance, thus supporting hypotheses.² The TRSI was also positively associated with two other T3 emotions: disgust and guilt. Contrary to hypotheses, however, comparison of the standardized regression coefficients indicated that the TRSI was most strongly associated with T3 guilt ($\beta = .61$) rather than T3 shame ($\beta = .57$).

Hypothesis 6 was focused on the validity of the TRSI in predicting reactions to the trauma imagery task. It was anticipated that TRSI scores would demonstrate a significant, positive association with: 1) re-experiencing, 2) dissociation, 3) emotional suppression, 4) fear of experiencing emotions, and 5) perceived difficulty finishing the study if emotions were experienced (controlling for PTSD symptoms). It was anticipated that TRSI scores would demonstrate a significant, negative association with: 6) confidence in the ability to handle emotions and 7) the perception that emotions would pass quickly. Results were mostly in line with hypotheses (see Table 3.3). TRSI scores were significantly, positively associated with re-experiencing, dissociation, desire to suppress emotions, and perceived difficulty finishing the study if emotions were experienced. Of the aforementioned outcomes, the TRSI was most strongly associated with re-experiencing—based on comparisons of standardized regression coefficients—and accounted for 25% of the variance in re-experiencing. (Of note, the association between TRSI scores and re-experiencing did not change after controlling for T3 anxiety or fear.) Contrary to hypotheses, TRSI scores were not associated with fear of

² Since there was a significant correlation between time since trauma and T3 shame, another model was run with time since trauma as an additional covariate; results from this model were consistent with the original model.

experiencing emotion, reduced confidence in the ability to handle emotions, or the perception that emotions would soon pass.

3.3 Discussion

The present study was the first to test the ability of the TRSI to predict trauma-cued state shame among a sample of women with IPV histories. Change in state shame immediately after recalling an instance of IPV as well as after listening to a recording of the recollection and a five-minute recovery period were examined. Results showed that TRSI scores predicted trauma-cued state shame immediately after recalling an IPV experience, providing preliminary evidence of the predictive validity of the TRSI. Additionally, TRSI scores were most strongly associated with T2 state shame, although this was not true for T3. Overall, the TRSI showed stronger associations with self-conscious state emotions in the context of trauma cues, as opposed to non-self-conscious trauma-cued emotions. Disgust and guilt—two self-conscious emotions that often co-occur with shame—shared significant associations with TRSI scores. Given that some questions on the TRSI ask about self-disgust (e.g., “Because of what happened to me, I am disgusted with myself”), it is unsurprising that TRSI scores would be associated with elevations in disgust. It is also unsurprising that TRSI scores were significantly associated with state guilt; shame and guilt have long been known to co-occur, and this co-occurrence may have been complicated by the single-item assessment of shame and guilt and the assumption that participants in the present study knew how to distinguish them. Single-item assessments are often used in studies involving mood induction tasks to collect quick ratings before emotions fade. However, studies looking to test changes in specific emotions, such as shame and guilt, should consider using more thorough

assessments of these emotions (e.g., the State Shame and Guilt Scale; Marschall et al., 1994) to better differentiate them. Given findings from the present study, which suggest that the TRSI had the strongest effect on increases in shame and guilt, it may be necessary to employ these more thorough assessments in order to determine if the TRSI can distinguish between predicting shame and guilt in the context of trauma memories. Alternatively, it may be that individuals with elevated trauma-related shame experience both shame and guilt intensely in the context of trauma. It is also important to note that little is known about the duration of state shame and guilt in the context of trauma reminders, and therefore, future research is needed to elucidate the decay of these emotions when assessed in the laboratory, particularly in light of the differences between the TRSI's associations with state shame and guilt across T2 and T3. With regard to correlations between shame and disgust, it is also worth noting that it was impossible to determine with a single-item rating whether participants were rating their experience of disgust in relation to self-directed disgust, disgust at memories of specific contaminants that occurred during their trauma (e.g., blood, saliva, semen), disgust directed toward the perpetrator, or disgust associated with a perceived experience of betrayal or moral violation. As such, future research should consider assessing state disgust in a way that can differentiate between the type or target of disgust participants are experiencing; it seems plausible that self-directed and/or moral disgust would be more strongly associated with trauma-related shame as opposed to disgust elicited by memories of physical contaminants, but additional work is needed to test this hypothesis.

It is notable that anger, another moral emotion commonly associated with shame (Tangney & Dearing, 2003), was not significantly associated with TRSI scores. The lack

of association between TRSI scores and state anger may reflect that the TRSI does not simply predict all trauma-related emotions, but may be stronger for trauma-related self-conscious emotions (i.e., shame, guilt, disgust; Tracy & Robins, 2004). This finding should be taken cautiously, however, given the sample size limitations and possibility of Type II error.

In addition to providing evidence about the TRSI's ability to predict state shame, the present study also provided new evidence as to the TRSI's ability to predict other responses to trauma memories as well as attitudes about emotional experiences in the context of trauma cues. Given the similarities between the present study's procedures and evidence-based trauma-focused treatments (e.g., Prolonged Exposure Therapy [PE]; Foa et al., 2007), these data provide important insight into how trauma-related shame may predict patient experiences during exposure therapy. TRSI scores positively predicted self-reported experiences of dissociation and emotional suppression, which support conceptualizations of trauma-related shame as a driver of trauma-cued avoidance (Cunningham, 2020; Lee et al., 2001). The positive association between TRSI scores and dissociation experiences may imply connections between involuntary avoidance (as neuroimaging suggests dissociation may be an automatic process; Gusnard et al., 2001; Hopper et al., 2007), whereas the positive association with emotion suppression may suggest some level of intentional suppression. Future research should examine whether dissociation and emotion suppression were perceived to be successful; that is, if individuals with higher TRSI scores who reported the strongest desire to suppress their emotions actually experienced less shame (or guilt/disgust). Additionally, more research is needed to tease apart various attitudes about emotions that those with elevated trauma-

related shame may experience and how such attitudes may/may not impact willingness to engage with distressing emotions as well as to what extent these attitudes impact treatment outcomes.

Finally, the present study demonstrated additional support for the association between the severity of PTSD symptoms following IPV and trauma-related shame as measured by the TRSI. Although the present study's ($n = 30$) sample did not detect significant differences between TRSI scores by PTSD diagnostic status, significant differences did emerge when all study participants ($N = 60$), not just those randomly assigned to the trauma recall task, were included.

The present study had several notable strengths, including inclusion of a racially and ethnically diverse community sample of adult women across a wide range of ages. Additionally, the sample was varied in terms of age of index trauma and PTSD symptom severity; half of the sample met criteria for PTSD diagnosis as determined by the CAPS-5, a gold-standard, structured interview of PTSD. Another strength of the study was the analog to what may be experienced within-session by individuals in trauma-focused treatment. In PE, for example, patients record themselves talking about their index trauma, and then listen to those recordings over the following week (Foa et al., 2007). While the two trauma exposures in the present study were only five minutes long (each), and thus shorter than the recommended 30 to 45-minute exposures in PE, the present study's design offered longer exposures than commonly used 30-second script-driven imagery procedures, which often do not involve participants listening to the recording of themselves talking (e.g., Badour et al., 2013; Lanius et al., 2002; Pitman et al., 1990; Shin et al., 1999). The longer exposure time and idiographic nature of the recordings

(i.e., that they were voiced by participants themselves) thus offered some similarities to treatment. The present study was not without limitations, however. Foremost, the study's results must be taken with caution due to the small sample size and subsequent power limitations. Nonsignificant results in particular should be taken with caution, given the possibility of Type II error. Additionally, although the sample had a high degree of racial and ethnic diversity, the sample was less diverse in terms of educational background; the majority of participants had completed at least some college. Replication with a larger and more diverse sample is thus needed to provide more confidence in these findings and the conclusions drawn. Dually important, the study is limited in its single-item assessment of state emotions, and the related assumption that participants could distinguish between shame and guilt. The limitations of single-item assessments of shame and guilt have been thoroughly discussed in this paper. Hence, future research should utilize a more thorough assessment of state shame and guilt (e.g., the State Shame and Guilt Scale; Marschall et al., 1994) to further test the predictive validity of the TRSI and better compare differences between trauma-cued state shame and guilt. However, the present study was an important first step in providing evidence that the TRSI is predictive of shame in the context of trauma memories and in comparison with other state emotions.

Table 3.1 Descriptive Data and Zero-Order Relations among Continuous Predictor and Criterion Variables (Study 2)

	1	2	3	4	5	6
1. Trauma-related shame (TRSI)	20.88 (17.00)					
2. PTSD symptoms (CAPS-5)	.51**	21.69 (12.23)				
3. Time since trauma (years)	-.16	-.10	14.28 (14.61)			
4. T1 Shame (baseline)	.43*	.28	-.06	13.66 (26.51)		
5. T2 Shame (post-recording)	.68**	.38*	-.16	.42*	53.50 (39.85)	
6. T3 Shame (post-playback)	.65**	.40*	-.37*	.34	.70**	52.97 (37.50)

Note. * $p < .05$; ** $p < .01$. Means are located in the diagonal with standard deviations in parentheses.

Table 3.2 Multiple Linear Regression Models of Trauma-Related Shame as a Predictor of Trauma-Cued Negative Emotions

	β	t	sr^2	Unadjusted p -values	B-H adjusted p -values
Time 2 (Post-Recording)					
Fear	.42	2.33	.13	.03	.05
Anger	.29	1.50	.06	.15	.17
Anxiety	.37	1.96	.10	.06	.08
Disgust	.48	2.52	.16	.02	.04
Shame	.61	3.60	.24	.001	.007
Guilt	.56	2.85	.22	.01	.03
Sadness	.28	1.33	.05	.20	.20
Time 3 (Post-Playback)					
Fear	.39	2.11	.11	.04	.08
Anger	.33	1.80	.08	.08	.12
Anxiety	.12	0.55	.01	.58	.68
Disgust	.50	2.57	.16	.02	.04
Shame	.57	3.23	.21	.003	.01
Guilt	.61	3.41	.26	.002	.01
Sadness	.03	0.14	.001	.89	.89

Note. All regression models included PTSD symptoms and respective baseline (T1) emotions as covariates; β = standardized beta weight; sr^2 = squared semi-partial correlation. Significant Benjamini-Hochberg (B-H) adjusted p -values are bolded for emphasis.

Table 3.3 Multiple Linear Regression Models of Trauma-Related Shame as a Predictor of Reactions to Trauma Imagery

	β	t	sr^2	Unadjusted p -values	B-H adjusted p -values
Re-experiencing	.58	3.23	.25	.003	.02
Dissociation	.47	2.41	.17	.02	.04
Emotional suppression	.48	2.67	.17	.01	.03
Fear of experiencing emotions	.41	2.20	.13	.04	.05
Perceived difficulty finishing the study if emotions were experienced	.50	2.70	.19	.01	.03
Confidence in the ability to handle emotions	-.17	-0.86	.02	.40	.40
Perception that emotions would soon pass	-.28	-1.46	.06	.15	.18

Note. All regression models included PTSD symptoms as a covariate; β = standardized beta weight; sr^2 = squared semi-partial correlation. Significant Benjamini-Hochberg (B-H) adjusted p -values are bolded for emphasis.

CHAPTER 4. CONCLUSIONS

Overall, the results of the present work suggest that the TRSI is a valid measure of trauma-related shame, and evidence exists for the structural validity of a general trauma-related shame factor and convergent and discriminant validity between other related yet distinct constructs. This work also suggests that the TRSI predicts increases in self-conscious state emotions (i.e., shame, guilt, and disgust) in the context of trauma memories as well as re-experiencing, dissociation, and emotional suppression. This work further supports the notion that trauma-related shame is more strongly associated with PTSD than trauma-related guilt and trait shame. These results offer important implications for future research.

Given that higher shame has been linked to elevated symptoms of PTSD pre- and post-treatment as well as at follow-up (van Minnen et al., 2002), future research may seek to identify methods of targeting trauma-related shame. At this time, there is no evidence to support any one PTSD treatment package or component as the ideal approach for targeting trauma-related shame (Saraiya & Lopez-Castro, 2016), and research suggests that Cognitive Processing Therapy (CPT), a best practice intervention for PTSD, may be more effective at reducing guilt than shame (see Cunningham, 2020). Although strong empirical support exists for best practice PTSD treatments, many individuals continue to experience clinically-significant symptoms. For instance, one study of female rape survivors who completed PE and CPT found that over 30% of the sample still experienced clinical levels of distress at trauma reminders, detachment, and insomnia (Larsen et al., 2019). When examining additional residual symptoms, 54% of the sample continued to report problems with self-blame at the end of treatment, and just

under 50% reported problems with self-hate and social withdrawal (Larsen et al., 2019). As such, additional research focused on identifying optimal strategies for reducing trauma-related shame is clearly warranted and may yield improved PTSD treatment outcomes.

Although a large body of literature has examined the relation between shame and guilt, including a book on trait shame and guilt (Tangney & Dearing, 2003) and a chapter on shame and guilt within PTSD (Cunningham, 2020), much less research has examined the association between shame and disgust within PTSD. Study 1 demonstrated a high correlation between trauma-related shame and mental contamination—a phenomenon strongly linked to disgust—and Study 2 highlighted the relevance of trauma-related shame in predicting trauma-cued disgust. Similar to shame, many studies have found that disgust is commonly reported after trauma (for a review, see Jones et al., 2020), particularly after sexual assault (Badour et al., 2013). Disgust is not currently included in the DSM-5 within the list of posttraumatic emotions; as such, it remains an underassessed posttraumatic experience. This is unfortunate, given research suggesting that trauma-related disgust may respond differently to exposure therapy compared to anxiety (Badour & Feldner, 2016). It remains to be studied whether individuals with high levels of both trauma-related shame and disgust are at a higher risk for poor treatment response compared to those not reporting shame and disgust. Furthermore, it is unclear whether or in what contexts an individual would experience elevated trauma-related shame but not disgust, and vice versa. Overall, more research on the co-occurrence of shame and disgust, as well as the implications of this co-occurrence for PTSD treatment,

may continue to increase our understanding of the emotional impact of trauma and, most importantly, continue to inform empirically-supported interventions.

The review of the literature inspiring this work highlights the need for more consistency with regard to the measurement of shame within the trauma literature, and even further, consistent use of empirically-supported trauma-related shame measures. The aforementioned findings support use of the TRSI as a valid measure of trauma-related shame, although additional research with larger samples is needed to replicate its predictive validity as well as provide more evidence of test-retest reliability and sensitivity to change, particularly to better justify the TRSI's use in clinical trials. Findings that trauma-related shame is more predictive of PTSD symptoms relative to trait shame and trauma-related guilt further support the need for clinical trials to consider including measures trauma-related shame as a treatment outcome, particularly in light of prior research suggesting that trauma-related shame may drive change in PTSD symptoms during trauma-focused treatment (Øktedalen et al., 2015). This is notable, as even the most recent clinical trials (Capone et al., 2020) and studies on mechanisms of PTSD treatment (Trachik et al., 2018) have continued to include measures of trauma-related guilt, but not shame. In light of results from the present study, this continues to be a weakness within the field. The current evidence provided, regarding the TRSI's validity, offers support of the TRSI's continued use and will hopefully facilitate more consistent trauma-related shame measurement in future research.

APPENDIX: Responses to Trauma Imagery

You will be asked to describe the extent to which you have had particular experiences while listening to the recording you just heard. Please give ratings on this scale:

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

If you have difficulty remembering and/or estimating the extent of your experience for a particular item, just make the best estimation you can based on your memory now.

During the record you just heard,

1. Did you feel as though the event was reoccurring, like you were reliving it?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

2. Did you have physical reactions in your body (for example, sweaty, racing heart, trembling, short of breath)?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

3. Did what you were experiencing seem unreal to you, like you were in a dream or watching a movie or play?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

4. Did you feel like you were a spectator watching what was happening to you, like an observer or outsider?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

5. Did you feel disconnected from your body?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

6. Did you feel like you were in a fog?

Not at all A great deal

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

7. Did you want to suppress your emotions?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

8. Did you want to maintain your emotions?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

9. Did you want to enhance your emotions?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

10. Did you not want to influence or change your emotions at all?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

11. Did you not want to feel any emotions?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

12. Were you afraid to experience any emotions?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

13. Did you think that you could handle any emotions you experienced?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

14. Did you think that, no matter what emotions you felt, they would soon pass?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

15. Did you think that if you fully experienced your emotions, you would have trouble finishing the rest of the study?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

16. Did you think that if you fully experienced your emotions, it would be good for you?

Not at all A great deal
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6

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VITA

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EDUCATION

- 2013 – 2015** **Master of Arts, Psychology**
American University, Washington, DC
- 2009 – 2013** **Bachelor of Science, Psychology**
Harding University, Searcy, AR

PROFESSIONAL POSITIONS HELD

- Aug 2018 **Shoulder to Shoulder Global**
Santo Domingo, Ecuador
Graduate Student Therapist
- July 2018 - **The Harris Center**
July 2019 University of Kentucky, Lexington, KY
Assistant Director
- July 2017 - **PTSD Clinical Team**
June 2018 VA Medical Center, Lexington, KY
Graduate Student Therapist
- July 2017 - **Pediatric Advancement Towards Health (PATH) Research Team**
Dec 2018 Kentucky Children’s Hospital, Lexington, KY
Graduate Research Assistant
- Aug 2016 - **The Harris Center**
May 2020 University of Kentucky, Lexington, KY
Graduate Student Therapist
- Aug 2016 - **Counseling Center**
May 2017 University of Kentucky, Lexington, KY
Graduate Student Therapist
- Aug 2015 - **Stress, Trauma, and Recovery Research Collaborative (STARRC)**
Present University of Kentucky, Lexington, KY
Graduate Research Assistant
- July 2015 - **Psychoneuroimmunology Lab**
Aug 2016 University of Kentucky, Lexington, KY
Graduate Research Assistant

Aug 2013- **Interpersonal Emotion Lab**
May 2015 American University, Washington DC
Graduate Research Assistant

Aug 2013- **Behavioral Research Lab**
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Graduate Research Assistant

SCHOLASTIC AND PROFESSIONAL HONORS

May 2019 **Excellent Clinical Performance**
Department of Psychology, University of Kentucky

April 2019 **Outstanding Scientist-Practitioner Award**
Department of Psychology, University of Kentucky

April 2019 **Jesse G. Harris Dissertation Award**
Department of Psychology, University of Kentucky

March 2019 **Outstanding Graduate Mentor Award nomination**
Kentucky Psychological Foundation

March 2016 **New Research Poster Tour Selected Participant**
Anxiety and Depression Association of America

August 2015 **Psychology Fellowship Award**
Department of Psychology, University of Kentucky

December 2014 **Mellon Research Award**
College of Arts and Sciences, American University

October 2014 **Barnard Scholarship Award**
Department of Psychology, American University

May 2013 **Most Outstanding Psychology Student**
Department of Behavioral Sciences, Harding University

June - Aug 2012 **CHOP Research Institute Summer Scholar (CRISSP)**
The Children's Hospital of Philadelphia (CHOP)

2009-2013 **Trustee Full Tuition Scholarship Recipient**
Harding University

PROFESSIONAL PUBLICATIONS

11. **Jones, A. C.**, Lim, S., Hood, C. O., Brake, C. A., & Badour, C. L. (2020). Affective lability moderates the associations between negative and positive urgency and posttraumatic stress. *Traumatology*.
10. Hood, C. O., **Jones, A. C.**, Flores, J., Badour, C. L., & Feldner, M. T. (2020). Perceived distress tolerance interacts with peritraumatic anger, sadness, and shame to predict posttraumatic stress symptoms following sexual victimization. *Traumatology*.
9. **Jones, A. C.**, Brake, C. A., & Badour, C. L. (2020). Disgust. In M. T. Tull & N. A. Kimbrel (Eds.), *Emotion in posttraumatic stress disorder* (pp. 117-144). Philadelphia, PA: Elsevier.

8. Badour, C. L., Dutton, C. E., Wright, J. J., **Jones, A. C.**, & Feldner, M. T. (2020). Shame Proneness, Negative Cognitions, and Posttraumatic Stress among Women with a History of Sexual Trauma. *Journal of Aggression, Maltreatment & Trauma*, 1-15.
7. **Jones, A. C.**, Kassam-Adams, N., Ciesla, J. A., Barakat, L., Marsac, M. L. (2019). A prospective examination of child avoidance coping and parental coping assistance after pediatric injury: A mixed-methods approach. *Journal of Pediatric Psychology*, 44(8), 914-923.
6. **Jones, A. C.**, Badour, C. L., Brake, C. A., Hood, C. O., & Feldner, M. T. (2018). Facets of emotion regulation and posttraumatic stress: Indirect effect of peritraumatic dissociation. *Cognitive Therapy and Research*. 1-13.
5. **Jones, A. C.** & Herr, N. R. (2018). Emotion differentiation mediates the association between emotion regulation difficulties and caloric intake. *Eating Behaviors*, 29, 35-40.
4. Brake, C. A., **Jones, A. C.**, Wakefield, J. R., & Badour, C. L. (2018). Mental contamination and trauma: Understanding posttraumatic stress, risky behaviors, and help-seeking attitudes. *Journal of Obsessive-Compulsive and Related Disorders*.
3. Segerstrom, S. C., **Jones, A. C.**, Scott, A. B., & Crofford, L. J. (2016). Daily goals and psychological well-being in midlife and older women: physical pain interacts with goal conflict. *Research in Human Development*, 13(4), 328-341.
2. Dutton, C. E., Badour, C. L., **Jones, A. C.**, Mischel, E. R., & Feldner, M. T. (2016). Affective lability predicts decreased habituation in posttraumatic stress symptom responding during a single laboratory session of imaginal exposure. *Journal of Anxiety Disorders*, 43, 52-57.
1. Herr, N. R., **Jones, A. C.**, Cohn, D. M., & Weber, D. M. (2015). The impact of validation and invalidation on aggression in individuals with emotion regulation difficulties. *Personality Disorders: Theory, Research, and Treatment*, 6(4), 310.