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DOCTORAL THESIS

The cognitive path to trauma recovery: examining the role of posttrauma cognitions in the maintenance of PTSD and the facilitation of trauma recovery for survivors of interpersonal violence

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**The Cognitive Path to Trauma Recovery:
Examining the Role of Posttrauma Cognitions in the Maintenance of PTSD and the
Facilitation of Trauma Recovery for Survivors of Interpersonal Violence**

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Abstract

Exposure to interpersonal violence has been identified as a global humanitarian crisis, with more than 520,000 people killed each year by an intimate partner or family member (Sethi & Butchart, 2017). The long-term economic, social, physical, and psychological impacts of nonfatal interpersonal violence have been identified as major health and welfare issues, resulting in significant morbidity and mortality for the Australian and global communities (Australian Bureau of Statistics [ABS], 2019; Centres for Disease Control and Prevention, 1993; Sethi & Butchart, 2017; Webster, 2016). The experience of mental illness, including Posttraumatic Stress Disorder (PTSD), has been identified as the greatest current contributor to the disease burden following exposure to interpersonal violence (ABS, 2019; Brady et al., 2000; Breslau et al., 1991; Jordan et al., 2010; Kessler et al., 1995; Resnick et al., 1997; Resnick et al., 1993; Schnurr & Jankowski, 1999).

Recovery has been identified as the primary goal for survivors' following interpersonal violence exposure however, Trauma Recovery is not universally experienced and many survivors continue to exhibit PTSD symptomatology following trauma exposure. Extensive clinical and empirical evidence demonstrates that posttrauma cognitions play an important role in the development and maintenance of PTSD for survivors of interpersonal trauma (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa et al., 1992; Foa & McLean, 2016; Held et al., 2019; Kubany et al., 1996; Kubany & Watson, 2002). Whilst these posttrauma cognitions have been theorised to impair Trauma Recovery, the relationship between posttrauma cognitions and Trauma Recovery remains unaddressed in empirical research.

The overarching aim of this program of research was to enhance our understanding of Trauma Recovery following exposure to interpersonal violence, through the development of an evidence-based model and psychometrically sound means of measuring Trauma Recovery.

To achieve this aim, this program of research was designed to explore the posttrauma cognitions associated with interpersonal trauma exposure and to obtain empirical support for the Trauma Cognition Model, the Cognitive Model of Trauma Recovery, and the Trauma Recovery Measure. To achieve these outcomes, a mixed methodological approach was adopted with four sequential studies completed between 2018 and 2020. Study one was designed to identify the modifiable posttrauma cognitions that maintain PTSD symptom expression following the experience of intimate partner violence (IPV). The outcomes from study one identified the unique and significant contribution of Shame, Blame, and Negative Self cognitions on PTSD symptom expression for female survivors of male perpetrated IPV. The posttrauma cognitions of Shame, Blame, and Negative Self were identified to independently predict the experience of clinically significant PTSD symptomatology following exposure to IPV.

Study two sought to extend the outcomes from study one, through an evaluation of the Trauma Cognition Model (TCM). The TCM proposes that the presence and severity of the posttrauma cognitions of Shame, Blame, and Negative Self predict the experience of clinically significant PTSD symptomatology for survivors of interpersonal trauma. The results obtained within study two demonstrated the TCM and the three posttrauma cognitions of Shame, Blame, and Negative Self to independently predict PTSD symptom expression for a diverse population of interpersonal trauma survivors. The TCM was also demonstrated to differentiate between individuals exposed to non-personal versus interpersonal forms of trauma. These outcomes highlighted the unique psychopathology and needs of interpersonal trauma survivors and the significant role of Shame, Blame, and Negative Self cognitions in the maintenance of PTSD symptom expression for a diverse population of interpersonal trauma survivors.

The findings from studies one and two informed the development of the Trauma

Recovery Measure (TRM). The TRM was developed as a positive, strengths-based instrument to measure Trauma Recovery following exposure to interpersonal violence. Study three describes the development and psychometric evaluation of the TRM. Findings from study three revealed the TRM to have an acceptable factor structure, adequate overall model fit, and acceptable reliability and validity for a population of interpersonal trauma survivors. These results provide preliminary evidence for the TRM as a psychometrically sound measure of Trauma Recovery for interpersonal trauma survivors.

Study four incorporated the outcomes from previous studies within this program of research to develop and evaluate the Cognitive Model of Trauma Recovery (CMTR). The CMTR proposes that recovery from interpersonal trauma is achieved through the development, reinforcement, and gradual attainment of three specific positive cognitions related to the individuals' sense of intrapersonal safety, security, and self-identity. The results obtained in study four demonstrated the cognitions of Validation, Liberation, and Positive Self to have a significant negative relationship to trauma-related psychopathology for survivors of interpersonal trauma. The CMTR was demonstrated to differentiate between individuals exposed to non-personal versus interpersonal forms of trauma. These outcomes highlighted the unique and significant role of the Validation, Liberation, and Positive Self cognitions for the mitigation of PTSD symptomatology and the facilitation of Trauma Recovery for a diverse population of interpersonal trauma survivors.

This program of research provides a unique and important contribution to the field of traumatology through the attainment of empirical support for the TCM and CMTR. These models identify the significant contribution of specific posttrauma cognitions in the maintenance of PTSD symptomatology and the facilitation of Trauma Recovery for a diverse population of interpersonal trauma survivors. The empirical evidence presented within this program of research provides preliminary evidence indicating that application of the TCM

and CMTR within clinical settings would facilitate Trauma Recovery through the targeted intervention and modification of posttrauma cognitions. Additionally, the TRM provides a psychometrically sound means of assessment of these cognitions and the survivors Trauma Recovery journey. Overall, the outcomes obtained within this program of research provide empirical support for the CMTR, the TRM, and the utilisation of a positive, strengths-based approach to the assessment and treatment of Trauma Recovery.

Key words: Trauma Recovery, PTSD, interpersonal trauma, Validation, Liberation, Positive Self

Declaration of Originality

This thesis is submitted to Bond University in fulfilment of the requirements of the degree of Doctor of Philosophy. This thesis represents my own original work towards this research degree and contains no material that has previously been submitted for a degree or diploma at this university or any other institution, except where due acknowledgement is made.

Name: Sharelle L. Smith

Signature:

Date: 24th February 2021

Research Publication and Output

Conference Presentations

Smith, S. (2020). *Development and Validation of the Trauma Cognition Model for PTSD Development Following Exposure to Interpersonal Violence*. Paper presented at the STOP Domestic Violence Conference, hosted by the Australian and New Zealand Mental Health Association (Gold Coast Convention and Exhibition Centre, 2nd to 4th of December 2020).

Smith, S. (2020). *Measuring Recovery from Trauma: Development and Psychometric Validation of the Trauma Recovery Measure*. Paper presented at the STOP Domestic Violence Conference, hosted by the Australian and New Zealand Mental Health Association (Gold Coast Convention and Exhibition Centre, 2nd to 4th of December 2020).

Ethics Declaration

The research associated with this thesis received ethical approval from the Bond University Human Research Ethics Committee. The ethics application number for this research project is SS00181. All procedures and methods performed in completion of this program of research were conducted in accordance with the ethical standards of the Bond University Human Research Ethics Committee.

Copyright Declaration

No Copyright Declaration

No published manuscripts were included within this thesis.

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Abbreviations

ASD	<i>Acute Stress Disorder</i>
CAS-R-SF	<i>Composite Abuse Scale</i>
CBT	<i>Cognitive Behavioural Therapy</i>
CERQ	<i>Cognitive-Emotion Regulation Questionnaire</i>
CMTR	<i>Cognitive Model of Trauma Recovery</i>
DSM-III	<i>Diagnostic and Statistical Manual of Mental Disorders (3rd Ed.)</i>
DSM-5	<i>Diagnostic and Statistical Manual of Mental Disorders (5th Ed.)</i>
DV	<i>Domestic Violence</i>
IPT	<i>Interpersonal Trauma</i>
IPV	<i>Intimate Partner Violence</i>
K10	<i>Kessler Psychological Distress Scale</i>
PCL-5	<i>Posttraumatic Stress Disorder Checklist for DSM-5</i>
PTCI	<i>Posttraumatic Cognitions Inventory</i>
PTSD	<i>Post Traumatic Stress Disorder</i>
QUADAS	<i>Quality Assessment of Diagnostic Accuracy Studies</i>
SCS-SF	<i>Self Compassion Scale – Short Form</i>
STARD	<i>Standards for Reporting Diagnostic Accuracy</i>
TCM	<i>Trauma Cognition Model</i>
TRGI	<i>Trauma-Related Guilt Inventory</i>
TRM	<i>Trauma Recovery Measure</i>
TRSI	<i>Trauma-Related Shame Inventory</i>
WHO	<i>World Health Organisation</i>

Chapter One

Introduction

“We must never forget that we may also find meaning in life even when confronted with a hopeless situation when facing a fate that cannot be changed. For what then matters is to bear witness to the uniquely human potential at its best, which is to transform a personal tragedy into a triumph, to turn one’s predicament into a human achievement. When we are no longer able to change a situation ... we are challenged to change ourselves”

(Frankl, 2006, pp. 112).

Overview of the Research Context

The study of trauma and its sequelae has expanded considerably since the introduction of Posttraumatic Stress Disorder (PTSD) as a clinical diagnosis within the Diagnostic and Statistical Manual of Mental Disorders third edition (APA, 1987). Over the last three decades, the definition of trauma and the dichotomisation between ordinary stressors and traumatic events has evolved, with traumatic stressors currently defined as any catastrophic event involving actual or threatened death or injury, or a threat to the physical integrity of self or others (APA, 2013; Friedman, 2013). More recently, there has been a move towards further delineation between trauma typologies across the categories of interpersonal and non-personal forms of trauma exposure. Interpersonal forms of traumatic events (i.e., interpersonal violence, sexual assault, physical assault with a weapon) have been identified to elicit stronger and more chronic trauma responses and to contribute to the development of PTSD at greater rates, compared to other forms of non-personal trauma exposure (i.e., natural disasters, transportation accidents; Amstadter & Vernon, 2009; Andrews et al., 2000; Beck et al., 2011; Bisson, 2007; Kilpatrick et al., 1997).

Exposure to interpersonal violence and the resulting trauma sequelae experienced by

survivors of interpersonal trauma has been identified as a global epidemic with both women and men reporting the experience of at least one form of interpersonal violence across the lifetime (Kessler et al., 1995; Rees et al., 2011; Resnick et al., 1993; Turell, 2000).

Individuals exposed to interpersonal trauma typically experience multiple incidences of violent events and victimisation, and a greater severity of experienced abuse (i.e., abuse across multiple domains – sexual, physical, emotional), than individuals who experience single-incident, non-personal forms of trauma exposure (Houskamp & Foy, 1991; Jones et al., 2001). The actual threat of violence continuation experienced within interpersonal trauma exposure is often pervasive, due to the relational context of the abuse and other interpersonal factors that result in ongoing contact with the perpetrator of violence and/or abuse (i.e., legal processes relating to divorce, separation/custody, shared parenting, familial engagements/responsibilities; Dutton, 1992).

It has been proposed that survivors of interpersonal trauma experience a distinct subcategory of traumatic stress symptoms including, the experience of shame, self-blame, subjugation, anger, and hatred (directed towards the perpetrator of traumatic acts), defilement, sexual inhibition, and resignation (Beck, 1999; Dutton, 1992; Ochberg, 1988). These posttrauma cognitions have been identified and included within the recent reclassification of PTSD symptom criteria within current diagnostic classification systems and have been defined more generally as shame, self-blame, anger, detachment, and guilt (APA, 2013; Maercker et al., 2013; WHO, 2018). Considerable research has examined posttrauma cognitions and their role in maladaptive symptom expression and psychopathology following trauma exposure (APA, 2013; Beck, 1999; Beck et al., 2004; Beck et al. 2011; Beck et al., 2013; Brewin & Holmes, 2003; Ehlers & Clark 2000; Ehring et al., 2008; Frazier, 2003; Gilbert & Miles, 2003; Harman & Lee 2010; Hebenstreit et al., 2015; Kubany et al., 2004; Kubany & Watson 2003; Lee et al. 2001; Nickerson et al., 2013; Olstedalen et al., 2014;

Resick et al.2008; Rose et al., 2010; Tran et al., 2019; Zinzow et al., 2010). Despite the identified significance of posttrauma cognitions in PTSD symptom expression, to date, no research has been conducted to identify and assess the specific posttrauma cognitions that impede or facilitate Trauma Recovery.

Rationale and Purpose of this Dissertation

There is no current definitional consensus of Trauma Recovery in the known nomenclature, with the current understanding and assessment of recovery founded upon the medical model of symptom abatement. This model focuses upon the identification, modification, and mitigation of maladaptive symptomatology, including posttrauma cognitions, as a means of achieving Trauma Recovery (Anthony, 1993; Davidson, 2003; Drake et al., 2015; Joseph & Linley, 2008; Saleeby, 1992). Similarly, the current means of monitoring and assessment of treatment outcomes within clinical settings is typically conducted through the identification and evaluation of maladaptive posttrauma cognitions (ACPMH; 2007; APA, 2013; APA, 2017; Cloitre et al., 2012; Forbes et al., 2007; NICE, 2005; Phoenix Australia Centre for Posttraumatic Mental Health, 2013; WHO, 2013b). It is proposed that these interventions and means of assessment are inadvertently reinforcing negative trauma-driven cognitive processes and restricting the survivor's capacity to identify, enhance, and master recovery-focused cognitive processes. This proposition is drawn from the Cognitive Theory of PTSD that proposes PTSD symptoms to be maintained by persistent, excessive negative appraisals of a traumatic event and its perceived consequences (Ehlers & Clark, 2000). The continued identification, monitoring, and assessment of negative posttrauma cognitions within clinical and research settings is thus proposed to contribute to and enhance the survivor's awareness and activation of these negative posttrauma cognitions, resulting in an exacerbation of trauma-related symptomatology and negatively impacting upon Trauma Recovery (Ehlers & Clark, 2000).

Trauma Recovery has been identified as the primary goal of clinical interventions following trauma exposure however, the attainment of Trauma Recovery is not universally experienced. It is widely accepted that trauma survivors experience difficulties achieving recovery following exposure to interpersonal trauma and that the effectiveness of current psychological assessment and treatment approaches are limited in their capacity to achieve long-term improvements in trauma-related psychopathology (APA, 2017; Ehlers & Clark, 2008; Larsen et al., 2016; Taylor et al., 2003; van Minnen et al., 200). One of the most significant limitations to the attainment of recovery has been the absence of a consensual definition or means of assessment for Trauma Recovery. The overall purpose of this program of research was to address these limitations and to contribute to an enhanced understanding of interpersonal trauma and its sequelae through the development of an evidence-based definition, model, and means of measurement for Trauma Recovery.

Structure of this Dissertation

Research Aims

The overarching aim of this program of research was to enhance our understanding of Trauma Recovery following exposure to interpersonal violence through the development of an evidence-based model and psychometrically sound means of measuring Trauma Recovery. To achieve this aim, this program of research was designed to explore the posttrauma cognitions associated with interpersonal trauma exposure and trauma sequelae and to obtain empirical support for the Trauma Cognition Model, the Cognitive Model of Trauma Recovery, and the Trauma Recovery Measure.

Outline of Studies

To achieve the aims of this program of research, a mixed methodological approach was adopted. This dissertation is divided into seven chapters that present the literature, empirical outcomes, and significant implications from this program of research. Chapter one

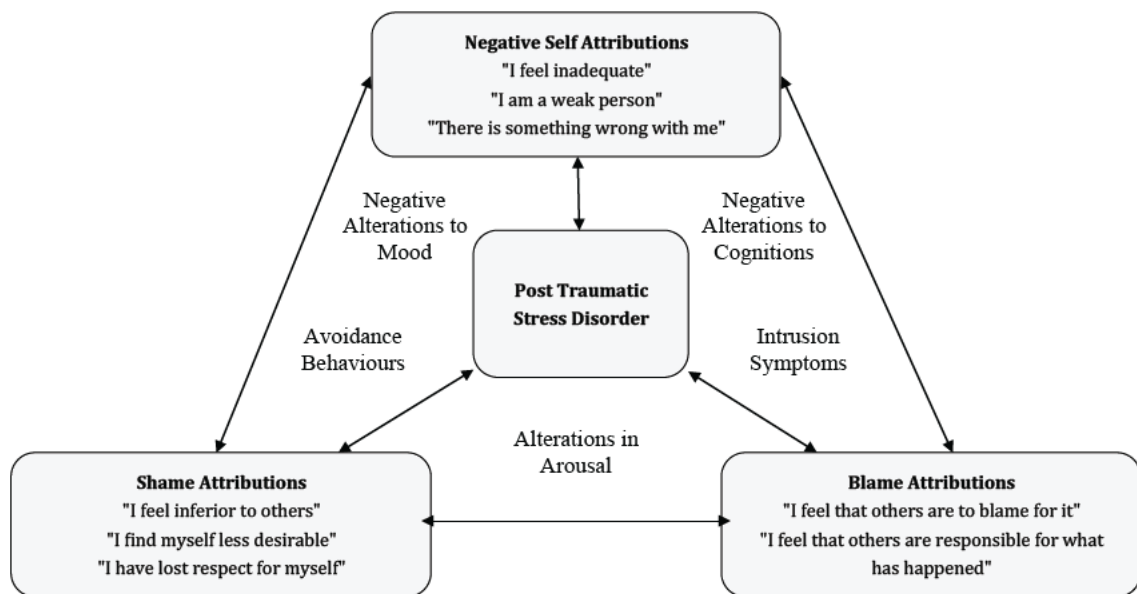
provides an overview of the context, rationale, and significance of this dissertation. Chapter two delivers a literature review examining the core concepts of trauma, interpersonal violence, and Trauma Recovery and provides a rationale for this program of research. Chapter three describes the context, methodology, results, and overall outcomes from the first of four empirical studies completed within this program of research. Study one identified the specific posttrauma cognitions that maintain PTSD symptom expression following the experience of intimate partner violence (IPV). The outcomes from study one identified the unique contribution of posttrauma Shame, Blame, and Negative Self cognitions upon PTSD symptom expression for female survivors of male perpetrated IPV. These posttrauma cognitions were identified to independently and significantly predict the experience of clinically significant PTSD symptomatology following exposure to IPV. The outcomes from study one informed the development of the Trauma Cognition Model of PTSD for survivors of interpersonal trauma.

Chapter four describes study two, which evaluated the Trauma Cognition Model of PTSD (TCM; see Figure 1). The TCM proposes that the presence and severity of the posttrauma cognitions of Shame, Blame, and Negative Self predict the experience of clinically significant PTSD symptomatology for survivors of interpersonal trauma. It is proposed that the cognitions of Shame, Blame, and Negative Self interact with the maladaptive affective and behavioural symptoms of PTSD (i.e., avoidance, hyperarousal, negative alterations to mood, intrusion symptoms) in a bidirectional manner to maintain the experience of PTSD symptomatology typically experienced following trauma exposure. Within the context of interpersonal violence, the development of posttrauma cognitions is postulated to result from the interpersonal nature of trauma experiences, and the survivor's understanding and interpretation of the event (Beck, 1999; Guglielmo et al., 2009; La Bash & Papa, 2014). The persistence of the Shame, Blame, and Negative Self cognitions are theorised

to maintain PTSD symptomatology by producing a sense of current and ongoing threat, accompanied by the experience of intrusion symptoms, increased somatic arousal, and strong negative emotions (Beck, 1999; Ehlers & Clark, 2000; Foa et al., 1999). The experience of these symptoms is proposed to prompt the engagement of dysfunctional cognitive and behavioural responses designed to achieve a short-term reduction in distress (i.e., avoidance); however, engagement of these responses results in long-term negative alterations to cognitive, behavioural, and emotional processes, that inhibit cognitive change and maintain the expression of PTSD symptomatology (Foa et al., 1999).

Figure 1

Trauma Cognition Model of PTSD



The results obtained from study two provided preliminary empirical support for the TCM and demonstrated its capacity to predict PTSD symptom expression for a diverse population of interpersonal trauma survivors. The TCM was also demonstrated to differentiate between individuals exposed to non-personal versus interpersonal forms of trauma. These outcomes highlighted the unique psychopathology and needs of interpersonal trauma

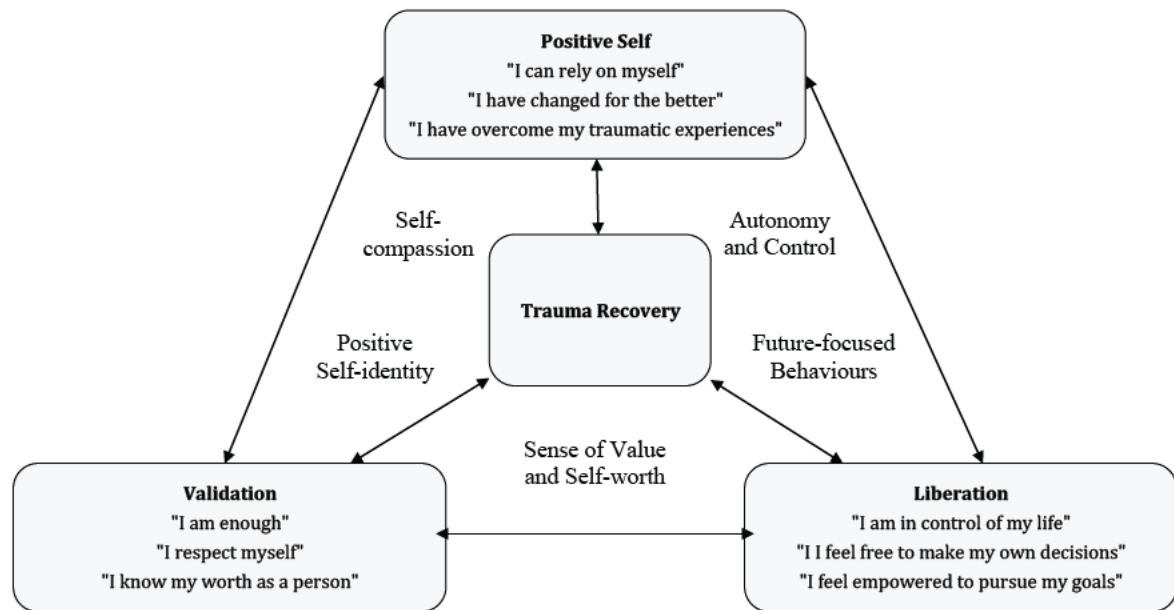
survivors and the significant role of the posttrauma Shame, Blame, and Negative Self cognitions in the maintenance of PTSD symptom expression for interpersonal trauma survivors. The results from study two informed the development of the Trauma Recovery Measure.

Chapter five describes study three and outlines the development and initial evaluation of the Trauma Recovery Measure (TRM; see Appendix A). The TRM is a 15-item self-report measure developed within this program of research to evaluate Trauma Recovery following exposure to interpersonal trauma. The TRM contains three subscales (Validation, Liberation, and Positive Self) measuring an individuals' cognitions following the experience of traumatic events. Validation, Liberation, and Positive Self have been identified as adaptive cognitive processes that support the survivors' recovery journey. Total scores on the TRM provide an evaluation of the individuals' current stage of recovery, with lower scores indicating the individual to be in the early stage of recovery and higher scores indicating engagement in the late stage of recovery. The results from study three provided preliminary empirical support for the TRM and demonstrated the measure to have an acceptable factor structure, adequate overall model fit, and acceptable reliability and validity for a heterogeneous population of interpersonal trauma survivors. Overall, the TRM was demonstrated to be a psychometrically sound assessment tool for the evaluation of Trauma Recovery for survivors of interpersonal trauma. The obtained outcomes from study three informed the development of the Cognitive Model of Trauma Recovery.

Chapter six describes study four which evaluated the Cognitive Model of Trauma Recovery (CMTR; see Figure 2) within a community sample of interpersonal trauma survivors. The CMTR postulates that recovery from interpersonal trauma is achieved through the development, reinforcement, and gradual attainment of three specific positive cognitions related to the individuals' sense of intrapersonal safety, security, and self-identity.

Figure 2

Cognitive Model of Trauma Recovery



Trauma Recovery within the CMTR is defined as an individual process of cognitive change, leading to enhanced emotional and behavioural control and the attainment of intrapersonal mastery, empowerment, and hope for oneself and the future. Trauma Recovery is proposed to exist along a continuum, as the survivor moves away from self-loathing, blaming others, and self-condemnation, towards a sense of acceptance, empowerment, and self-compassion. The journey to recovery is proposed to result in a cognitive shift from the negative posttrauma cognitions of self-condemnation (Shame) to positive cognitions of self-acceptance and worthiness (Validation); from blaming others (Blame) to cognitions centred upon empowerment and control (Liberation); and from self-loathing (Negative Self) to self-compassion and self-love. This cognitive shift allows the individual to move away from a predominance of negative, deficit-driven cognitive processes that have been demonstrated to precipitate and maintain maladaptive behavioural and emotional reactions, towards a mastery of safe, secure, strengths-based cognitive processes that reinforce the individuals' sense of autonomy, safety, and self-control. The CMTR proposes that the cognitions of Validation,

Liberation, and Positive Self interact with adaptive affective and behavioural strategies in a bi-directional manner to maintain a positive and cohesive sense of self that facilitates Trauma Recovery. In accordance with predictions, the findings from study four indicated the positive cognitions of Validation, Liberation, and Positive Self to have a significant negative relationship to trauma-related psychopathology for survivors of interpersonal trauma. These results provided preliminary empirical support for the CMTR and highlighted the unique and significant role of the Validation, Liberation, and Positive Self cognitions in the mitigation of PTSD symptomatology and the facilitation of Trauma Recovery following exposure to interpersonal trauma.

Finally, chapter seven provides a qualitative summary of the overall outcomes from this program of research. The clinical and empirical implications for survivors of interpersonal trauma resulting from this program of research are then provided.

Significance of this Dissertation

This program of research proposes a theoretical and empirically supported shift towards a positive, strengths-based approach to Trauma Recovery for interpersonal trauma survivors. The TCM, CMTR, and TRM propose an evidence-based reconceptualisation of Trauma Recovery that redirects the focus of assessment and treatment away from distressing and functionally impairing trauma symptomatology towards a positive, strength-based Trauma Recovery orientation. The empirical evidence obtained within this program of research indicates that an adoption of this approach within clinical settings and would facilitate Trauma Recovery through a focus on positive cognitions and the enhancement of the survivors' autonomy, safety, and sense of self. The TRM provides a reliable and empirically validated means of evaluating Trauma Recovery for a diverse population of interpersonal trauma survivors. Overall, the outcomes obtained within this program of research provide empirical support for the CMTR, the TRM, and the utilisation of a positive, strengths-based

approach to the treatment and assessment of Trauma Recovery for survivors of interpersonal trauma.

Chapter Two

Defining Trauma and Recovery

Chapter Overview

This chapter provides a literature review encompassing the themes of trauma, recovery, and interpersonal violence. This literature review outlines the current theoretical understanding of trauma and recovery and describes the unique impact of interpersonal trauma on PTSD and Trauma Recovery. This literature review is divided into three sections, with the first providing a review of trauma, including, its definition, categorisation, and impact upon individuals exposed. The second section explores the varying typologies of trauma exposure and describes the differences between interpersonal and non-personal trauma typologies upon emotional, physical, behavioural, and cognitive sequelae. Finally, this literature review will examine the current theoretical models of Trauma Recovery and their identified limitations.

Trauma

Exposure to potentially traumatic events has been identified as a common component of human existence, with at least one experience of trauma exposure reported across the lifetime for most individuals (Knipscheer et al., 2020). Trauma has been identified to result from exposure to an event, or series of events, that are experienced by an individual as life-threatening (or emotionally or physically harmful), and that results in lasting adverse effects upon an individuals' functioning across areas of psychological, physical, social, emotional, or spiritual wellbeing (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014a). The experience of trauma can be conceptualised across three domains, including, the context of the event itself, the individuals' understanding and interpretations of the event, and the adverse effects experienced (SAMHSA, 2014a).

Historically, the Diagnostic and Statistical Manual of Mental Disorders (DSM-III;

APA, 1987) conceptualised a traumatic event as a catastrophic stressor that was deemed to be outside the range of usual human experience (i.e., war, torture, sexual assault, natural disasters, airplane crashes and factory explosions). Traumatic stressors within this conceptualisation were clearly delineated from normal vicissitudes of human life that were deemed to be very painful (i.e., failure, rejection, serious illness, divorce) however, were not identified to contribute to the development of chronic mental health symptomatology (APA, 1987). The dichotomisation between ordinary stressors and traumatic events was derived from an assumption that humans have a capacity to cope with ordinary stressors however, these capabilities are likely to be overwhelmed when exposed to a traumatic stressor (APA, 1987; Friedman, 2013). The definition of traumatic experiences has been highly debated since its first introduction into the DSM-III in 1987 and has been identified as one of the most challenging aspects of diagnostic classification systems (Friedman, 2013). There is a consensus that events such as sexual assault, torture, combat, and physical assault, are traumatic however, consensus has fluctuated regarding events such as the sudden death of a loved one and indirect exposure to traumatic events (APA, 1994; Friedman, 1993). To address the categorical limitations of previous versions of the DSM, the currently accepted DSM-5 criteria redefined a traumatic stressor to include any catastrophic event involving actual or threatened death or injury, or a threat to the physical integrity of self or others (i.e., sexual violence; APA, 2013; Friedman, 2013).

Individual Interpretation and Understanding of Traumatic Event Exposure

The individuals' experience and interpretation of events determine if the event itself is experienced as traumatic. The attribution of labels and meaning, coupled with the degree of physical or psychological disruption experienced by the individual following event exposure, contributes to determinations about the individuals' capacity to cope with the events occurrence and the degree of trauma experienced (SAMHSA, 2014a). Interpretations of

events vary greatly and have been identified to account for a large proportion of the differences observed in posttrauma reactions and trauma recovery (SAMHSA, 2014a). Traumatic events evoke a power differential, whereby one entity (a specific individual, event, or natural phenomena) exerts power over another, diminishing the individuals' autonomy and sense of safety and security (SAMHSA, 2014a). An individuals' interpretation of this power differential and their overall experience of the event are impacted by varying factors, including, personal beliefs, cultural context, previous life experiences, personality, and other psychosocial factors (SAMHSA, 2014a). The role of cognitive process in the interpretation and understanding of traumatic events has thus been identified as a significant predictor of experienced trauma-related psychopathology (Beck, 1979; Brewin & Holmes, 2003; Dalgleshi et al., 2005; Ehlers & Clark, 1999; Foa & Rothbaum, 1998; Jones & Barlow, 1990; SAMHSA, 2014a)

Trauma Reactions

The long-lasting adverse effects resulting from event exposure are a critical component of the trauma experience (SAMHSA, 2014a). An individuals' immediate reactions in the aftermath of a catastrophic event are complicated and affected by their baseline level of physical and psychological functioning, history of previous trauma exposure, availability of coping resources, and access to services and supports (SAMHSA, 2014b). Acute reactions to event exposure range in severity and are understood to be natural responses designed to help the individual maintain safety and manage their traumatic experience (SAMHSA, 2014b). Initial trauma reactions are exhibited by most individuals and can occur across emotional, physical, behavioural, and cognitive domains (APA, 2013; SAMHSA, 2014b). The typical responses experienced in the immediate aftermath of trauma exposure are considered normal and typically resolve without severe long-term consequences however, they can still be distressing to experience (APA, 2013; SAMHSA, 2014b).

Emotional Reactions. An individuals' experience of emotions following trauma exposure can vary greatly and are significantly influenced by the type of trauma exposure and the individuals psychosocial and trauma histories (Breslau et al., 1991; Creamer et al., 2005; Kilpatrick et al., 1997; Norris, 1992; SAMHSA, 2014b). Peritraumatic emotional responses including, fear, horror, and hopelessness, have been theorised to occur as a result of life threat and have been identified to contribute to trauma-related psychopathology (Andrews et al., 2000; APA, 1994; Dalgleish & Power, 2004; Eisenberg et al., 1997; Foa et al., 1989; Tucker et al., 2000). By definition, traumatic events involve the threat of death, serious injury, or threats to personal integrity, thus the experience of intense fear, horror, and helplessness are typically experienced at the time of trauma exposure, and their intensity reported to abate once the immediate threat has passed (Amstadter & Vernon, 2009; Eisenberg et al., 1997; Kaysen et al., 2005; Kilpatrick et al., 1997). However, when an individuals' experience of trauma is inconsistent with their pre-existing beliefs and views of the world, others, and themselves, the experience of fear, horror, and hopelessness are exacerbated, and the continued expression of these trauma-related processes has been identified to contribute to the experience of trauma-related psychopathology (APA, 2013; Beck et al., 2004; Beck et al. 2011; Beck et al., 2013; Ehlers & Clark, 2006; Rothbaum et al., 2007).

In addition, peritraumatic and posttraumatic emotions including, anger, shame, blame, and guilt are also frequently reported during and following exposure to traumatic events (APA, 2013; Amstadter & Vernon, 2009; Andrews et al., 2000; Brewin et al., 2000; Kubany et al., 1997; Shay, 1991). These emotional reactions are shaped by pre-existing beliefs about the world, others, and themselves and trauma-related cognitions about the survivors' role and behaviours enacted at the time or immediately following trauma exposure (Beck et al., 2004; Beck et al. 2011; Beck et al., 2013; Ehlers & Clark, 2006; Rothbaum et al., 2007). Differential emotional responses have also been identified to result from the type of trauma experienced.

It has been proposed that an individuals' recovery environment, coupled with internal and external appraisals of the traumatic experience, contribute to differences in posttrauma emotional responses (Amstadter & Vernon, 2009; Andrews et al., 2000). For example, interpersonal violence and sexual assault have been identified to elicit stronger and more chronic emotional responses than other forms of non-personal trauma exposure (i.e., natural disasters, transportation accidents) and to contribute to the development of trauma-related psychopathology at greater rates than other forms of trauma exposure (Amstadter & Vernon, 2009; Andrews et al., 2000; Beck et al., 2011; Kilpatrick et al., 1997).

Physical Reactions. Exposure to a catastrophic stressor can elicit somatic symptoms, including, hyperarousal, physiological reactivity, and sleep disturbances (APA, 2013). Individuals exposed to trauma report more physical symptoms, poorer health outcomes, and a greater prevalence of illness compared to similar non-trauma exposed individuals (Flett et al., 2002; Friedman & Schnurr, 1995; Green & Kimerling, 2004; Golding, 1996; Koss & Heslet, 1992; Schnurr & Jankowski, 1999; Ullman & Siegel, 1996; Walker et al., 2004). The experience of multiple or reoccurring traumatic experiences has also been demonstrated to impact the intensity of physical symptoms experienced (D'Andrea et al., 2011). Neurobiological research has identified psychophysiological alterations associated with trauma exposure including, hyperarousal of the sympathetic nervous system, increased sensitivity and augmentation of the startle response, and sleep disturbances (Friedman et al., 1995; Schnurr & Green, 2004; Shiromani et al., 2009). The structural and neurochemical changes documented following trauma exposure are outside the scope of this review however, their role in maintaining the experience of physical trauma sequela is well-documented (Bremner, 2002; Bremner, 2006; Friedman et al., 1995; Green & Kimerling, 2004; McFarlane, 2010; Pitman, 2001; Shiromani et al., 2009; Vermetten & Bremner, 2002).

Behavioural Reactions. The experience of a traumatic event has been identified to

precipitate the engagement of behavioural strategies utilised to manage the distressing emotional, physical, and cognitive symptoms experienced (SAMHSA, 2014a). Engagement in these behavioural responses initially serves to provide relief from trauma exposure or its sequelae however, persistent engagement in avoidance, recklessness, or self-destructive behaviours has been identified to contribute to the maintenance of trauma-related symptomatology and the development of mental health sequelae (APA, 2013; SAMHSA, 2014a). Within diagnostic classification systems, engagement in avoidance behaviours has been identified as an essential component to the diagnosis of PTSD following event exposure and as a contributor to impaired social and emotional functioning (APA, 2013).

Cognitive Reactions. Exposure to traumatic events has been identified to contribute to alterations in cognitive processes including, memory, attention, perception, and problem solving (APA, 2013; Hayes et al., 2012). Cognitive reactions are proposed to occur due to an individuals' inability to reconcile their experience of the event with previously held beliefs, perceptions, and values (Ehlers & Clark, 2000; Janoff-Bulman, 1992; Horowitz, 1976). Cognitive appraisals of the traumatic experience have been identified to occur across internal, external, and generalised future-focused domains, with personalisation and generalisation of the experience identified to exacerbate trauma-related symptomatology (Beck, 1979; Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa & Rothbaum, 1998; Jones & Barlow, 1990). Trauma exposure can result in survivors identifying themselves as damaged or incompetent, observing others and the world as unsafe and unpredictable, and perceiving the future as hopeless (Beck, 1979). The experience of these posttrauma cognitive processes has been associated with ongoing personal suffering (Beck, 1979). Cognitive reactions and changes associated with trauma exposure can be experienced in relation to the traumatic event and its immediate sequelae only, or can be more widely generalised with cognitive processing and representations expanded to include an extensive range of situations, triggers, and sequelae

leading to the experience of trauma-related psychopathology (Dalgleshi et al., 2005).

Trauma-Related Psychopathology

As previously outlined, exposure to traumatic events often results in a range of emotional, physical, cognitive, and behavioural responses and reactions, which typically abate within weeks or months following the cessation of the traumatic stressor (Bisson, 2007; Galea et al., 2003, Riggs et al., 1995, Rothbaum et al., 1992, van Griensven et al., 2006). The relationship between acute posttraumatic reactions and the development of psychopathology, including, Acute Stress Disorder (ASD) and Posttraumatic Stress Disorder (PTSD), has received extensive clinical and theoretical attention. Trauma reactions and symptomatology have been identified as dynamic over time and do not follow a linear path (Bryant et al., 2003). Many trauma survivors continue to experience sub-threshold symptoms that limit their capacity to function normally (i.e., maintain relationships, regulate emotional states, function competently in work or academic arenas) however, do not meet the threshold for psychiatric diagnoses (APA, 2013; Bisson, 2007; SAMHSA, 2014a). There is considerable research demonstrating that most individuals diagnosed with PTSD did not initially meet the criteria for a diagnosis of ASD or PTSD following event exposure (Bryant et al., 2008). Several longitudinal studies have demonstrated that the level of trauma-related symptoms and functional impairment increases over time, with diagnostic criteria for both ASD and PTSD only met after a protracted-time period (Bliese et al., 2005; Bryant et al., 2008; Carty et al., 2006; Grieger et al., 2006; Milliken et al., 2007; Orcutt et al., 2004; Solomon & Mikulincer, 2006).

Acute Stress Disorder (ASD) represents a normal response to extreme stress and describes and defines acute reactions that occur within the initial month following exposure and cause a significant level of distress and impairment (APA, 2013; Bryant, 2016). ASD is more highly associated with single-incident trauma exposure and not the experience of

chronic, long-term exposure to traumatic events (SAMHSA, 2014a). A longitudinal study examining the relationship between ASD and PTSD identified most individuals diagnosed with ASD subsequently met diagnostic criteria for PTSD (Bryant, 2011). This review also identified that most individuals with a diagnosis of PTSD did not initially display symptoms consistent with ASD, indicating the ASD diagnosis to be limited in its ability to identify individuals at risk for the development of PTSD (Bryant, 2011). PTSD has been defined within the DSM-5 (APA, 2013) as a mental illness encompassing intrusion symptoms, persistent avoidance, and alterations to cognitions, mood, arousal, and reactivity, which have been precipitated or exacerbated by exposure to a traumatic event. For adult trauma survivors, symptoms of PTSD typically develop within three months of trauma exposure however, there can be a delay of onset spanning months or years for some individuals (APA, 2013; SAMHSA, 2014a).

Trauma Typologies

Many different trauma typologies have been identified to elicit a trauma reaction and to precipitate the development of PTSD, including, natural disasters (i.e., flood, hurricane, earthquake), accidents (i.e., motor vehicle crash, falls), combat experience (i.e., war, torture), and criminal behaviours (i.e., mugging, kidnapping, sexual and physical abuse; Dutton, 1992). Research and clinical investigations into the psychological sequelae of trauma exposure have typically focused on one trauma typology at a time. General theoretical models proposed to explain the nature of the trauma response and the relationship between event exposure and the development of PTSD have demonstrated applicability across trauma populations (Brewin et al., 1996; Dutton, 1992; Ehlers & Clark, 2000; Foa & Rothbaum, 1998; Kessler et al., 2017; Taylor, 2017); however, these theories are limited in their capacity to explain the differential experience of trauma reactions and mental health sequelae for individuals exposed to varying trauma typologies. Higher impact trauma typologies (i.e., interpersonal violence and sexual

assault) have been identified to elicit stronger and more chronic trauma responses than other forms of non-personal trauma exposure (i.e., natural disasters, transportation accidents; Amstadter & Vernon, 2009; Andrews et al., 2000; Beck et al., 2011; Bisson, 2007; Kilpatrick et al., 1997). These higher impact trauma typologies have also been demonstrated to contribute to the development of PTSD at greater rates than non-personal trauma exposure (Amstadter & Vernon, 2009; Andrews et al., 2000; Beck et al., 2011; Bisson, 2007; Kilpatrick et al., 1997). The literature review provided herein will address these identified differences across trauma typologies, with a specific focus upon the unique cognitive factors that contribute to the experience of trauma reactions and PTSD following exposure to interpersonal trauma typologies.

Interpersonal Trauma

Interpersonal trauma is experienced following the enactment of interpersonal violence or abuse by one person within a relational dynamic upon the other. Interpersonal violence refers to the intentional use of threatened or actual physical force or power enacted against oneself, another, or a group that results or is likely to result in injury, death, psychological harm, mal-development, or deprivation (Krug et al. 2002; World Health Organisation [WHO], 2020). Acts of interpersonal violence may be enacted within either a familial or interpersonal relationship or upon the wider community in general. The former category entails child maltreatment, intimate partner violence, and elder abuse, and the latter involving acquaintance and stranger violence, which may include youth violence, assault by strangers, violent property crimes, and violence within the workplace and/or institutions (WHO, 2020). Rates of interpersonal violence exposure have been identified to differ across means of measurement and populations sampled, however it is generally reported that interpersonal trauma is experienced in at least one form across the lifetime for both men and women (Kessler et al., 1995; Rees et al., 2011; Resnick et al., 1993; Turell, 2000). In one large national sample of

the United States population, interpersonal trauma was reported to be previously experienced in at least one form by 42% of male respondents and 46% of female respondents (Iverson et al., 2013). This study indicated that men were more likely to experience non-relational forms of interpersonal violence, such as mugging and physical assault, whilst women were more likely to experience kidnapping, physical violence by an intimate partner, stalking, rape, and other forms of sexual violence (Iverson et al., 2013). The experience of childhood abuse and exposure to violence within the home was reported equally by both genders (Iverson et al., 2013).

Interpersonal trauma has been associated with adverse physical and mental health outcomes, has been identified as the leading cause of hospitalisation for Indigenous Australians, and is the third leading cause for injury-related deaths in Australia (Berry et al., 2009; Helps & Harrison, 2004; Helps & Harrison, 2006; Iverson et al., 2013; WHO, 2020). Substantial associations have been reported between interpersonal violence exposure and psychopathology, with Australian women identified to be 2.6 to eleven times more likely to meet criteria for psychopathology following exposure to interpersonal trauma than women exposed to other non-personal forms of trauma exposure (Iverson et al., 2013). Findings from a large national sample indicated PTSD to be strongly associated with five of the assessed forms of interpersonal violence including, rape, physical assault by an intimate partner, sexual assault other than rape, witnessing inter-parental violence, and mugging (Iverson et al., 2013). In a recent WHO report examining PTSD and traumatic experience types, trauma typologies were identified to contribute to significant differences in PTSD symptom expression reported within the population surveyed (Liu et al., 2017). Consistent with previous research (Caramanica et al., 2015; Fossion et al., 2015; Iverson et al., 2013), trauma exposure related to or resulting from interpersonal violence was identified to exhibit the greatest risk for PTSD development, as well as the highest burden of PTSD symptom expression across the sampled

population (Lui et al., 2017). Within the interpersonal violence category, sexual assault was identified to carry the highest conditional risk for PTSD development, followed by physical abuse by an intimate partner, kidnapping, and other acts of sexual violence (Liu et al., 2017).

Intimate Partner Violence

Exposure to intimate partner violence (IPV) has been identified as a global humanitarian crisis, with one in three women worldwide having experienced a breach of their fundamental rights to freedom, respect, equality, and dignity, through the enactment of violence by an intimate partner (WHO, 2013a). IPV is a subtype of interpersonal violence and is conceptualised as a pattern of intentional violent behaviours employed by a previous or current partner, with the intent of governing the thoughts, behaviours, and/or beliefs of their partner or to punish resistance to authoritative control (Hayes & Jeffries, 2013; Stark, 2007). IPV takes on many forms and can involve sexual violence, physical violence, emotional and/or psychological abuse, and controlling behaviours. Intimate partner violence typically becomes a cyclical pattern centred upon the perpetrators' need for control and the gradual attainment of their partners' dependence, isolation, and submission (Rogers et al., 1996; Stark, 2012; Walker, 1984). Acts of IPV do not typically occur in isolation, and exposure to IPV is most commonly reported to be cumulative and to occur over a protracted-time period (ABS, 2016).

IPV has been identified as the leading preventable contributor to death, disability, and illness for Australian women between 15 and 44 years (Victorian Health Promotion Foundation, 2010). Globally, 42 percent of female survivors of IPV have experienced physical injuries resulting from IPV, and 38 percent of all female homicides have been perpetrated by a male intimate partner (WHO, 2013a). In addition to the immediate impact of harm, including, physical injury and death, IPV results in negative mental health consequences that are both acute and chronic in nature (Black, 2011; Breiding et al., 2008;

WHO, 2013a). Mental health conditions have been identified as the largest contributor to the disease burden from IPV, followed by suicide and self-inflicted injuries (Australian Institute of Health and Welfare, 2019). PTSD has been reported to be the most prevalent mental health disorder experienced following exposure to IPV (Campbell, 2002; Golding, 1999; WHO, 2013a). Prevalence rates for the development of PTSD following exposure to IPV have been documented to range between 31 and 84 percent (Anderson, 2002; Black et al., 2011; Coker et al., 2002; Coker et al., 2006; Golding, 1999; Jones et al., 2001; Woods et al., 2000). A meta-analysis conducted by Goulding (1999) reported the weighted mean prevalence of PTSD among individuals exposed to IPV to be 64 percent. The variability in documented rates of PTSD has been proposed to result from the characteristics of the population sampled, the severity and chronicity of experienced IPV, and the individuals' experience of IPV within previous relationships (Anderson, 2002; Black et al., 2011; Coker et al., 2002; Coker et al., 2006; Golding, 1999; Jones et al., 2001; Woods et al., 2000).

Trauma and Interpersonal Violence

Several distinctions between the experience of IPV and other forms of trauma exposure have been identified in the literature (Caramanica et al., 2015; Dutton, 1992; Fossion et al., 2015; Houskamp & Foy, 1991; Iverson et al., 2013; Jones et al., 2001; Kessler et al., 2017; Liu et al., 2017). Individuals exposed to interpersonal violence typically experience multiple incidences of traumatic events and victimisation, and a greater severity of experienced abuse (i.e., abuse across multiple domains – sexual, physical, emotional), than individuals who experience single-incident, non-personal forms of trauma exposure (i.e., natural disaster, traffic accident; Houskamp & Foy, 1991; Jones et al., 2001). The actual threat of violence continuation experienced within interpersonal trauma exposure is often pervasive due to the relational context of the abuse and other interpersonal factors that result in ongoing contact with the perpetrator of violence (i.e., legal processes relating to divorce,

separation/custody, shared parenting, familial engagements/responsibilities; Dutton, 1992).

The relational nature of abuse has also been identified to contribute to an exacerbation of PTSD symptomatology. The experience of boundary violations and violence occurring within the context of a once safe and trusting interpersonal relationship contributes to unique stressors and diminished access to recovery resources (i.e., partner and/or familial support; Dutton, 1992).

It has been proposed that survivors of interpersonal trauma experience a distinct subcategory of traumatic stress symptoms, including, the experience of shame, self-blame, subjugation, anger, and hatred (directed towards the perpetrator of traumatic acts), defilement, sexual inhibition, and resignation (Dutton, 1992; Ochberg, 1988), that result from posttrauma cognitive change. These factors have been identified and included within the recent reclassification of PTSD within current diagnostic classification systems and have been defined more generally as shame, self-blame, anger, detachment, negative self-perception, and guilt (APA, 2013; Maercker et al., 2013; WHO, 2018). Within the context of interpersonal violence, the responses to trauma exposure have also been identified to differ from those experienced within non-personal forms of trauma exposure. These differences have been classified into the three domains of relational disturbances, psychological distress and dysfunction, and cognitive change (Dutton, 1992).

Relational Disturbances Resulting from Interpersonal Trauma

Traumatic bonding has been proposed to describe the process of attachment and dependency of a victim upon the perpetrator of violence and abuse within interpersonal relationships (Dutton & Painter, 1981). The love and adaptive attachment present within the early stages of relationship development are maintained within violent and abusive relationships due to the victims' decreased sense of self-worth, increased isolation, and forced dependence upon the perpetrator of violence (Dutton, 1992). The betrayal of trust inherent

within interpersonal violence fosters cognitive changes that hinder a survivor's capacity to feel or develop trust with themselves or others, further restricting the accessibility of resources and recovery (Dutton, 1992).

Psychological Distress and Dysfunction Resulting from Interpersonal Trauma

Within the context of interpersonal violence, an ongoing sense of danger, threat, and fear are typically experienced and are chronic due to the enactment of repeated acts of violence and abuse (Dutton, 1992). The uncontrollable nature of the experienced events, a loss of autonomy, and the loss of safety and security within the relationship also contribute to the chronic activation of fear within IPV relationships (Dutton, 1992). The relational nature of abuse coupled with ongoing interactions (i.e., court proceedings, shared parenting) with the perpetrator of abuse fosters an environment that maintains a sense of fear and the engagement of emotional, cognitive, and behavioural responses designed to manage fear and associated psychological distress (Dutton, 1992). The experience of fear may be accompanied and maintained by the presence of intrusive symptoms, anxiety, sleep difficulties, hypervigilance, and physiological reactivity (APA, 2013). Like fear, anger and hatred have physiological components of autonomic arousal that contribute to distress, dysregulation, and the maintenance of trauma symptomatology (Dutton, 1992).

For survivors of interpersonal trauma, anger and hatred can be externally or internally directed however, it is more often misdirected towards individuals identified to be safer than the perpetrator of violence (i.e., self, children, friends, healthcare workers; Dutton, 1992). This redirection of emotional expression often heightens feelings of shame and self-blame and contributes to the maintenance of negative cognitions of the self (Brinker & Dozois, 2009; Gold et al., 2011; Lewis, 1991; Lewis, 1992; Scheff, 2001; Tangney et al., 2011). Negative cognitions related to the self have also been identified to contribute to feelings of depression, self-blame, guilt, and shame (Dutton, 1992). Within the context of interpersonal violence,

forced isolation, loss of autonomy, feelings of embarrassment, inferiority, worthlessness, and hopelessness are all commonly reported cognitive and emotional responses to relational trauma and have been identified to contribute to the maintenance of PTSD symptomatology (Brewin & Holmes, 2003; Dutton, 1992; Ehlers & Clark, 2000; Foa et al., 1999).

Cognitive Change Resulting from Interpersonal Trauma

Changes to an individuals' cognitive processes following the experience of interpersonal trauma may not be experienced directly as distressing however, these changes result in immeasurable impacts upon the survivors' recovery by influencing the way they view themselves, others, and the future (Beck, 1979; Dutton, 1992; Janoff-Bulman, 1985). The unpredictable and unpleasant nature of traumatic incidences experienced within interpersonal relationships result in feelings of intense helplessness and challenges previously held beliefs related to safety, predictability, and competence in oneself, others, and the world (Bolton & Hill, 1996; Janoff-Bulman, 1985). The survivors' inability to reconcile their traumatic experience within previously held beliefs and assumptions about themselves, their partner, and their relationship contributes to the experience of psychological distress and the development and maintenance of psychopathology (Bolton & Hill, 1996; Brewin & Holmes, 2003; Dutton, 1992; Ehlers & Clark, 2000; Foa et al., 1999).

Within the context of interpersonal violence, the experience of boundary violations and violence occurring within a once safe and trusting interpersonal relationship fractures the individuals' assumptions of safety and trust, challenges cognitive beliefs related to meaning and purpose, and contributes to feelings of learned helplessness, whilst also restricting access to previously engaged resources (i.e., the intimate partner) to support a resolution to the experienced cognitive dissonance (Dutton, 1992). Ehlers and Clark (1999) identified a thought process termed 'mental defeat,' which describes an individuals' perceived inability to influence their fate within the context of trauma exposure. This process has been identified to

contribute to self-perceptions centred upon being ineffective, weak, and unable to protect oneself (Ehlers & Clark, 2000).

These cognitive processes have been identified to contribute to feelings of dependence, isolation, and submission, increasing tolerance for enacted violence and abuse, perpetuating ongoing interpersonal violence, and maintaining the experience of psychological distress and dysfunction (Bolton & Hill, 1996; Brewin & Holmes, 2003; Dutton, 1992; Ehlers & Clark, 2000; Foa et al., 1999; Fugate et al., 2005; Rogers et al., 1996; Stark, 2007; Walker, 1984). The pervasive expression of negative posttrauma cognitions have been identified to contribute to impairments across relational, emotional, and behavioural domains, leading to the experience of psychopathology (Beck, 1979; Brewin & Holmes, 2003; Brinker & Dozois, 2009; Dutton, 1992; Ehlers & Clark, 2000; Foa et al., 1999; Gold et al., 2011; Janoff-Bulman, 1985; Lewis, 1991; Lewis, 1992; Scheff, 2001; Tangney et al., 2011).

Trauma Recovery

The experience of trauma-related symptomatology and mental health sequelae following exposure to stressful and traumatic events have been widely documented in the literature. Diagnostic classification criteria, assessment measures, and treatment modalities have been applied to trauma survivors to assist with the management and mitigation of trauma-related symptomatology and psychopathology. One area that has received limited empirical or clinical attention is that of psychological recovery following trauma exposure. From a clinical perspective, definitions of recovery have been drawn from the medical literature and conceptualisations related to physical illness and disability (Anthony, 1993; Wright, 1983). These frameworks adopt an illness ideology that focuses on weakness and deficits as opposed to strengths and wellbeing, emphasising abnormality over normality, and maladjustment over adaptive change (Anthony, 1993; Joseph & Linley, 2008). This illness ideology prescribes the complete absence of maladaptive symptomatology and/or a return to

premorbid functioning as indicators for recovery (Davidson, 2003; Drake et al., 2015; Joseph & Linley, 2008; Saleeby, 1992).

Within the psychological context, there is no single definition or description for Trauma Recovery in the known nomenclature. In contrast to the deficit model, which identifies a chronic and often permanent experience of psychopathology and vulnerability, psychological frameworks have adopted a strengths perspective that promotes “recovery within illness” as opposed to “recovery from illness” (Drake et al., 2015. pp.4; Ramon et al., 2007). Within this conceptualisation, recovery has been theorised to occur concurrently with symptom abatement however, this relationship is not theorised to be linear, and an absence of psychopathology is not essential for the attainment of recovery. Definitions for recovery within this framework have identified recovery to be “a deeply personal, unique process of changing one’s attitudes, values, feelings, goals, skills, and/or roles ... a way of living a satisfying, hopeful and contributing life even with the limitations caused by illness” (Anthony, 1993. pp. 527). Researchers have extended upon this definition to highlight the importance of the recovery journey or recovery process in the development of hope, self-determination, self-management, advocacy, and empowerment (Davidson & Roe 2007; Deegan, 1988; Drake et al., 2015; Liberman & Kopelowitz, 2005; NSW Consumer Advisory Group, 2012; Repper & Perkins, 2003).

Recovery has been recognised as a unifying human phenomenon due to the common experience of exposure to stressful and traumatic life events across the lifespan (Anthony, 1993). Recovery has been identified as the primary goal following trauma exposure however, the attainment of recovery is not universally experienced. Individuals have reported both positive and negative alterations across varying domains that have previously been identified as indicators of recovery (i.e., emotional, behavioural, cognitive, interpersonal, and spiritual; Affleck & Tennen 1996; Carver, 1998; McMillen et al., 1997; McMillen & Fisher 1998;

Moos & Schaefer 1986; Tedeschi et al., 1998; Tedeschi & Calhoun 1996). There is a consensus within the psychological literature that recovery from trauma does not imply a return to premorbid levels of functioning or the eradication of trauma-related psychopathology, but rather proposes a process of intrapersonal development and understanding that promotes hope and personal wellbeing through adaptive changes within identified domains (Affleck & Tennen 1996; Carver, 1998; McMillen et al., 1997; McMillen & Fisher 1998; Moos & Schaefer 1986; Tedeschi et al., 1998; Tedeschi & Calhoun 1996). The attainment of recovery following trauma exposure does not change or minimise the occurrence of the events. The memories, cognitive, emotional, and behavioural reactions, and psychosocial impacts are still present, and the individuals' life has been irreversibly changed (Anthony, 1993), however, the process of recovery indicates that the individual is transforming, that they are developing control or mastery over themselves, and that they feel empowered to engage in their life and their future.

Recovery within this definition is not identified to be synonymous with the emerging concept of Posttraumatic Growth. Posttraumatic Growth refers to “positive psychological change experienced as a result of the struggle with highly challenging life circumstances” (Tedeschi & Calhoun, 2004, pp. 1). Posttraumatic growth is not identified as a direct result of trauma exposure but rather related to how a survivor struggles as a result of the trauma experience (Tedeschi & Calhoun, 2004). Within this conceptualisation, the attainment of posttraumatic growth is theorised to progress beyond an individuals' pre-trauma level of adaptation and change and to succeed trauma recovery (Tedeschi & Clahoun, 2004). Posttraumatic growth is proposed to exist on a separate continuum to recovery following traumatic event exposure, and the attainment of recovery proposed to support posttraumatic growth.

Theories and Models of Recovery

Three-Stage Model of Recovery

The Three-Stage Model of Recovery (Herman, 1992) is a theoretical treatment approach for trauma survivors. Herman (1992) identified the feelings of disempowerment and disconnection as core experiences for individuals experiencing psychological trauma and proposed that recovery results from empowerment of the survivor and the creation of new connections and new meanings. Recovery within this model is only deemed possible within the context of interpersonal relationships and renewed connections with others, which are proposed to facilitate the restoration and repair of damages endured through traumatic event exposure (Herman, 1992). Through a connection with others, survivors enhance their capacities for trust, autonomy, competence, initiative, identity, and intimacy, which is proposed to facilitate recovery (Erikson, 1963; Herman, 1992). This triphasic model proposes recovery is achieved following a transition through a series of intentional stages identified as safety, reconstruction, and reconnection (Herman, 1992). The first stage of recovery and the first goal of treatment focuses on the establishment of safety. The focus of safety begins with control of the body and moves outward to control of the environment (Herman, 1992). Once safety has been achieved, the therapeutic focus shifts to the second stage and an active and in-depth exploration of the traumatic experiences (Herman, 1992). This second stage aims to transform the traumatic memory, allowing it to be integrated into the survivor's life story (Herman, 1992; Mollica, 1988). The third stage involves the active pursuit of social reconnections, engagement in meaningful activities, and other aspects of a meaningful life (Herman, 1992).

This theoretical model and treatment approach were derived from professional practice experience working with trauma survivors in a clinical setting, providing a conceptualisation of trauma and recovery and a foundation from which psychological

treatment can be delivered. Whilst Herman's (1992) conceptualisation of the etiology and symptomatology of trauma are generally accepted, treatment interventions are varied, and not all are consistent with this triphasic approach (Australian Centre for Posttraumatic Mental Health, 2007; Cloitre et al., 2012; International Society for the Study of Trauma and Dissociation, 2011; National Institute for Clinical Excellence [NICE], 2005). The Three-Stage Model of Recovery is a theoretical model and treatment approach and no clear definition of recovery, consistent means of assessment, or empirical evidence have been provided to support this model.

The Thriving Model

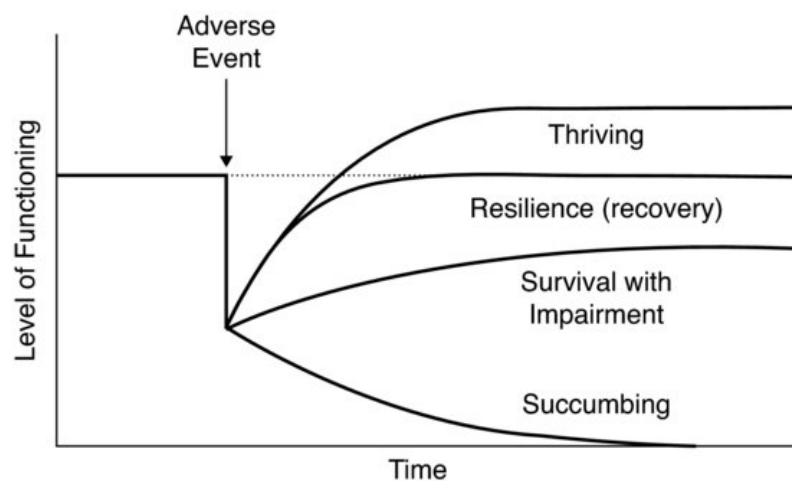
The Thriving Model (O'Leary & Ickovics, 1995) was developed to move away from the vulnerability/deficit model of recovery towards a focus upon survivors' strengths and their capacity to thrive following adversity. The thriving model proposes that exposure to adversity results in the process of adaptation, providing an opportunity for change and growth and the attainment of one of four potential outcomes (see Figure 3). Outcome one proposes that the negative physical and/or psychological impacts experienced in response to adversity continue and are compounded, resulting in the individual succumbing to their trauma (O'Leary & Ickovics, 1995). Outcome two describes an individual's survival following adversity however, the experience of physical and/or psychological impairment is experienced as chronic (O'Leary & Ickovics, 1995). Outcome three proposes that the individual achieves a return to premorbid levels of functioning, defined within this model as resilience or recovery (O'Leary & Ickovics, 1995). Outcome four proposes that the individual has the capacity to thrive or surpass their premorbid level of functioning (O'Leary & Ickovics, 1995).

O'Leary and Ickovics (1995) defined thriving as "the effective mobilisation of individual and social resources in response to risk or threat, leading to positive mental or physical outcomes and/or positive social outcomes" (pp. 12). Within this model, recovery is

defined as a gradual or rapid return to premorbid functioning and the abatement of impairing psychopathology (O’Leary & Ickovics, 1995). This model also proposes an enhanced recovery potential following the experience of trauma, described as “thriving,” within which an individual experiences a capacity to not only recover but to grow and develop psychosocial qualities that contribute to personal benefits and gain (O’Leary & Ickovics, 1995).

Figure 3

The Thriving Model of Trauma (O’Leary & Ickovics, 1995)



Note: This figure depicts the Thriving Model of Trauma elements and their impact upon a survivor’s level of functioning following exposure to trauma. Each line depicts one of the four proposed outcomes following trauma exposure.

The definition of recovery provided within this model is consistent with previous understandings and medical definitions of recovery that equate its attainment to the abatement of trauma-related symptomatology (Anthony, 1993; Wright, 1983). O’Leary and Ickovics (1995) propose the attainment of positive benefits and outcomes that surpass recovery and suggest the attainment of thriving to be the goal of therapeutic intervention. Within this framework, thriving is only achieved through the activation and engagement of social

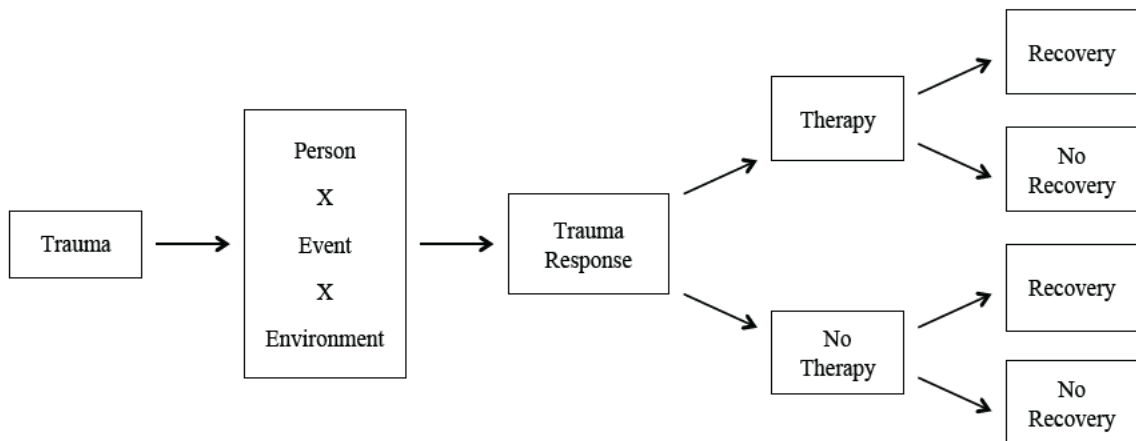
resources. The psychometric evaluation of the proposed Thriving Model has been limited due to the absence of a consensus among researchers about the construct and definition of both recovery and thriving and the absence of temporally specific measures developed for assessment across these two domains (Brown et al., 2017). To date, the evaluation of the Thriving Model has been facilitated by using measures devised for the assessment of other constructs including, psychological wellbeing and posttraumatic growth (Brown et al., 2017). This models' validity and its utility within populations of interpersonal trauma survivors have yet to be empirically evaluated.

The Ecological Model of Psychological Trauma and Trauma Recovery

The Ecological Model of Psychological Trauma and Trauma Recovery (Harvey, 1996) proposes that individual differences observed following trauma exposure can be attributed to interactions among personal, event, and environmental factors. The Ecological Model proposes a multidimensional definition of Trauma Recovery and describes four distinct recovery outcomes founded upon three assumptions (see Figure 4; Harvey, 1996). Within this model, individuals are proposed to be unequally vulnerable and differentially affected by stressful/traumatic events due to personal, event, and environmental vulnerabilities (Harvey, 1996). The second and third assumptions relate to the access and utilisation of clinical treatment and care, with an understanding that most trauma survivors do not access professional intervention and that those that do may not achieve recovery despite provided interventions (Harvey, 1996).

Figure 4

An Ecological Model of Trauma Recovery (Harvey, 1996)



Note: This figure provides a visual depiction of four proposed recovery outcomes. An Ecological View of Psychological Trauma and Trauma Recovery by Harvey, M. R. Copyright (1996) by John Wiley and Sons. Reproduced with permission of John Wiley and Sons via Copyright Clearance Center.

The four conceptually distinct recovery outcomes described in this model include:

1. The attainment of recovery through an interaction between clinical interventions and ecological influences;
2. An intensification of distress following or despite engagement in clinical interventions resulting in impediments to recovery;
3. The attainment of recovery in the absence of clinical care is proposed to result from the presence of a supportive and resilient ecosystem that provides access to support systems and community-based resources; and
4. An inability to achieve recovery due to an absence of timely and/or appropriate interventions (Harvey, 1996).

This model defines Trauma Recovery as a multidimensional phenomenon conceptualised across eight outcome criteria. The attainment of recovery is proposed to occur when an individual achieves positive change within any one of the described eight domains (Harvey, 1996). These domains include:

1. An authority over the remembering process;
2. An integration of memory and affect;
3. A capacity to tolerate affective reactions;
4. A mastery of trauma-related symptoms;
5. A repair of self-esteem;
6. An integration of self and attainment of self-cohesion;
7. A safe attachment to others; and
8. An ability to find or make meaning from the experience of trauma (Harvey, 1996).

Evaluations of the ecological model within populations of interpersonal trauma survivors have provided theoretical support for this model's validity (Bargai et al., 2007; Kemp et al., 1991; Mertin & Mohr, 2001; Dekel et al., 2019). These studies utilised varying assessment methods to propose the attainment of outcomes consistent with the proposed model including, measures of social support, sense of control, learned helplessness, and violence exposure. The Multidimensional Trauma Recovery and Resiliency Scale (MTRRS; Harvey et al., 2003) was designed to evaluate the proposed eight-domain model of recovery described within this model (Harvey, 1996). To date, the MTRRS has not been widely evaluated, and its validity for populations of interpersonal trauma survivors remains untested.

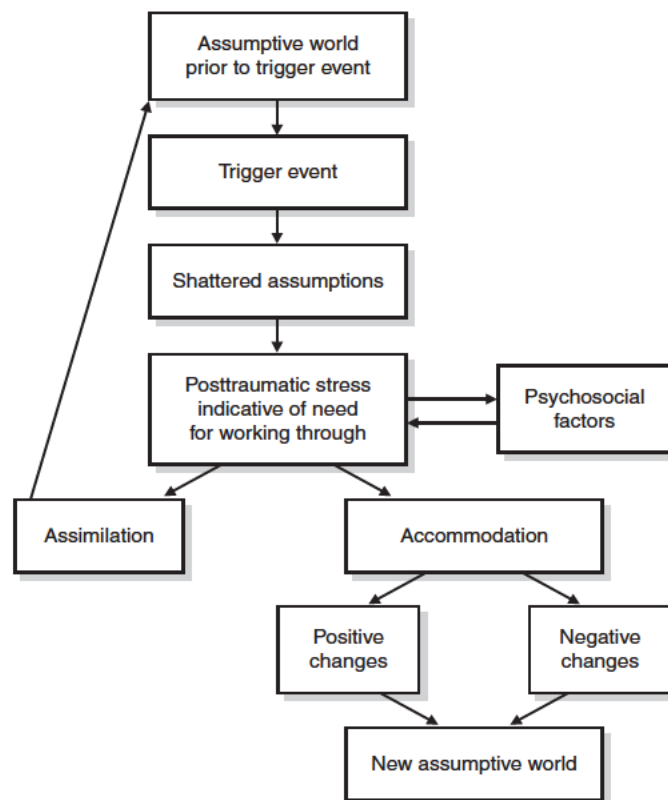
The Organismic Valuing Theory of Growth through Adversity

The Organismic Valuing Theory (Linley & Joseph, 2005; see Figure 5) describes the organismic valuing process, an individuals' innate ability to know what is important and essential to achieving a fulfilling life, as it applies to an individual following the experience of

trauma (Joseph & Linley, 2006). Exposure to a traumatic event is proposed to result in a shattering of the individuals' assumptive world and the need for cognitive-emotional processing and assimilation of trauma-related information, to alleviate the experience of maladaptive trauma-related symptomatology (Joseph & Linley, 2006).

Figure 5

Organismic Value Theory of Growth through Adversity (Joseph & Linley 2008)



Note: This figure provides a visual depiction of the proposed recovery outcomes. Trauma, Recovery, and Growth: Positive Psychological Perspectives on Posttraumatic Stress by Joseph, S. and Linley, P. A. Copyright (2012) by John Wiley and Sons. Reproduced with permission of John Wiley and Sons via Copyright Clearance Center.

This model proposes that to achieve a resolution to experienced PTSD symptomatology, trauma-related information must be either assimilated within the individuals

existing models of the world, or these models must be altered to accommodate this new information (Joseph & Linley, 2006). Both processes described within this model have the proposed capacity to support recovery, defined within this model as an abatement of PTSD symptomatology (Joseph & Linley, 2006). The attainment of growth beyond recovery is proposed to occur following a positive accommodation process leading to the adoption of new world views (Joseph & Linley 2006). The Organismic Valuing Theory proposes that individuals are intrinsically motivated towards positive accommodation, however, may be restricted from achieving positive change due to social and environmental circumstances (Joseph & Linley, 2008). Whilst the cognitive processes identified to support the attainment of recovery within this model provide a theoretical model to explain the differential experience of PTSD symptom expression, there is no current empirical support for the application of this model for interpersonal trauma survivors.

A Stage-by-Dimension Model of Recovery from Sexual Trauma

The Stage-by-Dimension Model of Recovery (Lebowitz et al., 1993) integrates the Ecological Model of Trauma (Harvey, 1996), with a multifaceted definition of Trauma Recovery (Harvey, 1996), and an understanding that Trauma Recovery occurs across a series of identifiable stages (Herman, 1992). This integrative model was developed for clinical application to support the attainment of treatment-facilitated recovery following the experience of sexual trauma. Within this model, trauma is identified to result from a complex interaction between the survivor, the event, and the environment, with individual differences across these three domains identified to contribute to the differential experience of posttraumatic responses observed for trauma survivors (Lebowitz et al., 1993). Interventions delivered within this framework were tailored to the survivors' individual, sociocultural, and environmental exigencies (Lebowitz et al, 1993). This theoretically informed approach to trauma intervention and recovery has been implemented within the Victims of Violence

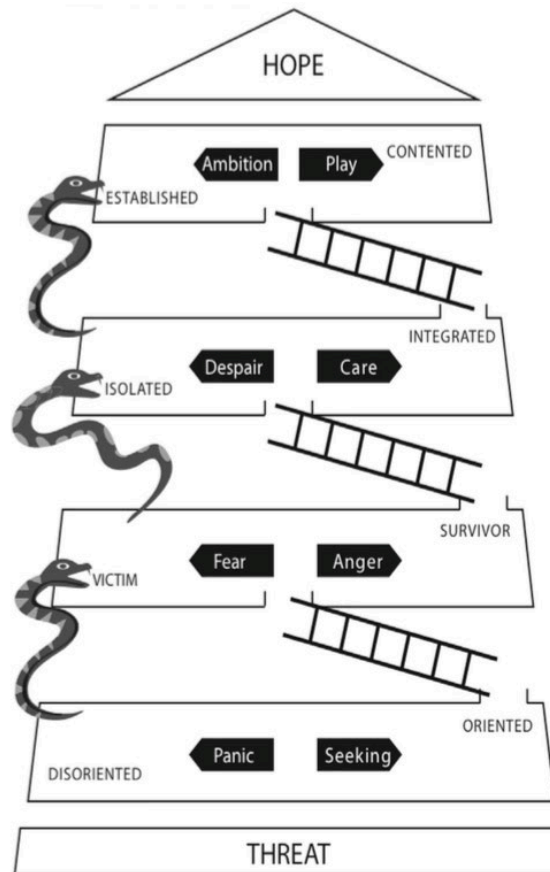
program, provided within an outpatient specialty clinic of the Cambridge Hospital's Department of Psychiatry (Yassen & Harvey, 1998). Despite the application of this framework within the clinical setting for almost three decades, there are no published clinical outcomes to support this models' efficacy.

The Four-Stage Model of Psychological Trauma Recovery

The Four-Stage Model of Psychological Trauma Recovery (Dutton & Ashworth, 2015) is an observational model that proposes recovery from psychological trauma follows a common path, characterised by four identifiable and sequential stages. Within each stage, the experience of positive emotions is proposed to enable the development of a greater positive self-perception and to support behavioural progression towards recovery (Dutton & Ashworth, 2015). Similarly, increased expression of negative emotions is proposed to contribute to a behavioural regression away from recovery (Dutton & Ashworth, 2015). This model proposes that predominant emotions and self-perceptions are associated with specific states, where positive emotions drive towards functionality and negative emotions pull towards dysfunctionality (Dutton & Ashworth, 2015). Hope is identified to be the predominant driver towards recovery, whilst threat is proposed to direct movement towards regression/psychopathology (Dutton & Ashworth, 2015). This model proposes four stages occurring through the transition from threat towards the attainment of hope and defines these as survival, safety, care, and success (Dutton & Ashworth, 2015). Within each stage, the individual is theorised to move between different states of self-perception (i.e., isolated to integrated) and is motivated towards recovery, through primary emotional drivers (i.e., despair or care; see Figure 6). This hierarchical depiction of Trauma Recovery provides a visual interpretation of the cognitive shifts proposed to contribute to behavioural and emotional change and the attainment of Trauma Recovery however, this model is qualitative in nature and has not been evaluated within trauma populations.

Figure 6.

The Four-Stage Model of Psychological Trauma Recovery (Dutton & Ashworth, 2015).



Note: The visual depiction of snakes demonstrates a relapse, whilst transition to the right and up the ladders towards the top of the figure represents recovery. The Natural History of Recovery from Psychological Trauma: An Observational Model, Medical Hypotheses, Volume 85, by Dutton, P. V. and Ashworth, A. Copyright (2015) by Elsevier. Reproduced with permission of Elsevier via Copyright Clearance Center.

Summary and Gaps in Literature

There is extensive theoretical and clinical evidence demonstrating the role of cognitive processes in maladaptive symptom expression following trauma exposure. The survivors' cognitive appraisals of the event, interpretation, and understanding of their reactions at the time and immediately following the event, and their evaluation of their capacity to manage

the emotional, somatic, and behavioural sequelae of the experienced event, have been identified as significant contributors to the experience of psychological distress and PTSD following trauma exposure (Beck et al., 2004; Beck et al. 2011; Beck et al., 2013; Brewin & Holmes, 2003; Ehlers & Clark, 2006; Jones & Barlow, 1990; Rothbaum et al., 2007; SAMHSA, 2014a). Several theoretical models have been provided to define and describe the nature of traumatic responses and the attainment of recovery following trauma exposure. These models provide varying definitions and domains of recovery however, there is a consensus across the models that cognitive processes play a significant role in the facilitation of Trauma Recovery. Despite the clinical application of these models for trauma survivors, there is currently no published empirical support for any of these models or their applicability for use within interpersonal trauma survivor populations. One of the most significant limitations to the attainment of empirical support has been the absence of a consensual definition of Trauma Recovery or a validated means to measure Trauma Recovery. This program of research aimed to address these limitations and to examine the role of specific posttrauma cognitions in PTSD symptom expression and Trauma Recovery. An enhanced understanding of trauma maintaining and recovery facilitating cognitions will assist with the development of empirically supported models for PTSD and Trauma Recovery for survivors of interpersonal trauma.

Chapter Three

Cognitions Contributing to the Development of PTSD Following Exposure to Intimate Partner Violence

Chapter Overview

This chapter identified and examined the posttrauma cognitions that have been documented to contribute to the development and maintenance of PTSD following the experience of IPV. The literature review provided in this chapter outlines the current theoretical understanding of PTSD and the role of cognitive processes in the development and maintenance of PTSD. The limitations of current theoretical approaches in their application to and understanding of PTSD symptom expression following IPV exposure are identified and discussed. The unique cognitive contributors to distress and dysfunction following the experience of interpersonal trauma are identified and their role in the development and maintenance of PTSD following the experience of IPV discussed. The methodology and results of study one are then provided. Finally, the outcomes of this study and implications for successive studies within this overall program of research are discussed.

Introduction

PTSD Definitions and Classifications

PTSD was officially recognised in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) in 1980 (APA, 1980). Before the DSM-III, there was no singular diagnostic category for observed and experienced symptoms following exposure to a traumatic event in the formal nomenclature. The significant change resulting from the inclusion of PTSD in the DSM-III, was the stipulation that the etiological agent for the disorder occurred outside the individual (i.e., a traumatic event), rather than being identified as an inherent individual weakness (i.e., a traumatic neurosis; Friedman, 2013). In its initial DSM-III formulation, a traumatic event was conceptualised as a catastrophic stressor (i.e.,

war, torture, rape, natural disasters, airplane crash) outside the range of the usual human experience (APA, 1980). Traumatic events were clearly differentiated from painful stressors (i.e., divorce, financial stressors, serious illness) that were identified as normal vicissitudes of human life (Friedman, 2013). This dichotomisation between traumatic and other life stressors was based upon an assumption that most individuals have an ability to cope with ordinary stressors however, their adaptive capacities are likely to be overwhelmed when confronted by a traumatic stressor (APA, 1980; Friedman, 2013). Criterion symptoms for PTSD within the DSM-III were defined by their connection in time and content with a specified traumatic event (APA, 1980). These criterion symptoms included the experience of intrusive thoughts and dreams, avoidance of stimuli related to or symbolic of the event, a numbing of general responsiveness, and hyperarousal not experienced before trauma exposure (APA, 1980). Several of these criterion symptoms are experienced within other classified psychiatric disorders within the DSM-III however, it is the experience of a specific and definable event before the onset of symptom expression that indicated experienced symptomatology to be consistent with a PTSD diagnosis (APA, 1980). PTSD criterion within the DSM-III is unique among psychiatric diagnoses due to the importance and necessity of an etiological agent to be present and precipitate symptom expression.

The criterion for PTSD in the DSM-III has undergone several revisions since 1980. The DSM-IV (APA, 1994) provided a reviewed definition of traumatic experiences, moving away from the DSM-III criteria that identified traumatic experiences as an overwhelming experience outside of the usual range of human experience and providing subjective classification criteria. The fourth edition of the DSM (DSM-IV) provided a two-criterion framework for conceptualising traumatic stressors. Criterion one defined a range of qualifying stressors and criterion two required the experience of intense helplessness, fear, and/or horror in response to stressor exposure (APA, 1994). This reclassification deemphasised the

objective determination of trauma exposure, with a shift towards the individuals' subjective experience of trauma exposure and symptom expression and an emphasis upon cognitive and emotional processes identified to precipitate the onset of PTSD.

In 2013, the fifth edition of the DSM (DSM-5) made several evidence-based revisions to the diagnostic criteria, with important conceptual and clinical implications (APA, 2013). Contrary to previous editions and in recognition of PTSD as more than a fear-based anxiety disorder, the DSM-5 re-classified PTSD into a new category, Trauma and Stressor-Related Disorders, in which exposure to a traumatic or stressful event was identified as a diagnostic criterion and presumptive etiological factor (APA, 2013; Weathers et al., 2014). Within this new category, the diagnostic criterion was further expanded to include anhedonic and dysphoric presentations marked by negative mood states and disruptive behavioural symptoms (APA, 2013). The DSM-5 (American Psychological Association, 2013) identifies eight criteria for diagnosis including,

A. Exposure to actual or threatened death, sexual violence, or serious injury in one of the following ways:

- Directly experiencing the event(s);
- Witnessing in person the event(s) as it occurred to others;
- Learning that the event(s) occurred to a close family member or friend; or in cases of actual or threatened death of a close family member or friend, the event(s) must have been violent or accidental;
- Experiencing extreme or repeated exposure to aversive details of a traumatic event(s) (i.e., first responders directly dealing with traumatic events or repeatedly hearing about traumatic events); Note: This criterion does not apply to exposure through electronic media, television, movies, or pictures unless exposure within this criterion is work-related;

- B. Presence of intrusion symptoms associated with the event including, recurrent, involuntary, and intrusive distressing memories, dreams (or nightmares), and/or dissociative reactions (flashbacks) of the event(s); and/or intense or prolonged psychological distress and/or physiological reactions resulting from exposure to internal or external cues that symbolise or resemble an aspect of the experienced event(s). Symptoms within this criterion must have an onset or significant exacerbation after exposure to the event and at least one symptom needs to be present within this criterion;
- C. Persistent avoidance of stimuli associated with the traumatic event(s) as evidenced by an avoidance of, or efforts to avoid, distressing memories, thoughts, feelings, and/or external reminders that evoke distressing memories, thoughts, or feelings of the traumatic event(s); Symptoms within this criteria must have an onset or significant exacerbation after exposure to the event, and at least one symptom needs to be present within this criteria;
- D. Negative alterations in cognitions or mood associated with the traumatic event(s), either beginning or worsening after the event(s) occurrence and including, an inability to remember important aspects of the traumatic event(s); persistent or exaggerated negative beliefs or expectations of self, others, or the world; persistent, distorted cognitions about the cause or consequences of the traumatic event(s); persistent negative emotional state (e.g., fear, horror, anger, guilt, or shame); anhedonia; feelings of detachment or estrangement from others; and apathy; Symptoms within this criteria must have an onset or significant exacerbation after exposure to the event and at least two symptoms need to be present within this criteria;
- E. Marked alterations in arousal and reactivity associated with the traumatic event(s)

including, irritable behaviour and angry outbursts; reckless or self-destructive behaviour; hypervigilance; exaggerated startle response; problems with concentration; and sleep disturbance; Symptoms within this criteria must have an onset or significant exacerbation after exposure to the event, and at least two symptoms need to be present within this criteria;

- F. Persistence of symptoms within criterion B, C, D, and E for more than one month following exposure to the event(s);
- G. Clinically significant distress or impairment across social, occupational, or other important areas of functioning; and
- H. Symptom expression is not attributable to the physiological effects of a substance or other medical condition (APA, 2013).

Specificity criteria are also provided to identify the concurrent experience of dissociative symptoms along with identified PTSD symptoms (APA, 2013). Persistent or recurrent dissociative symptoms are categorised into the two criteria of depersonalisation and derealisation;

1. Depersonalisation: The persistent or recurrent experience of feeling detached from ones' mental processes or body, as if one were an outside observer (e.g., feeling one was in a dream, feeling a sense of unreality of self or body, feeling time moving slowly);
2. Derealisation: The persistent or recurrent experiences of unreality of ones' surroundings (e.g., the external world is experienced as unreal, distant, dreamlike, or distorted; APA, 2013).

The introduction of diagnostic criteria for PTSD within the DSM-III, provided a foundation from which contemporary research examining psychiatric responses for survivors of traumatic events could be conducted. The reclassification of PTSD within the DSM-5 was

made primarily in recognition of the heterogeneity of posttraumatic symptom expression for individuals following exposure to traumatic events, which has been identified to be experienced across a diversity of symptoms including, fear and anxiety, predominant dysphoria and anhedonia, anger and aggression, guilt and shame, dissociation, or some combination of all of these symptoms (Weathers et al., 2014). Previous understanding and classifications of PTSD were founded upon the conceptualisation of PTSD as a fear-based disorder however, the revised criteria in the DSM-5 highlighted emotions in addition to fear, such as guilt and shame, that contribute to the development and maintenance of the disorder.

Clinical experience and research outcomes have identified differences within an individuals' capacity to cope with experienced traumatic stress (Breslau, 1998; Breslau, 2002; Breslau, & Kessler, 2001; Kessler et al., 2005). This is reflected in the varying rates of PTSD symptom expression and diagnosis for individuals following the experience of the same or similar events (Ehring & Quack, 2010; Graham et al., 2016; Sareen, 2014). The differences in trauma sequela experienced, coupled with clinical knowledge and research outcomes, have led to an understanding of PTSD as resulting from exposure to a stressful event, coupled with internal cognitive processes that result in an appraisal of the event as an extreme threat to themselves or significant others (APA, 2013). It is the inherent differences in this process of cognitive appraisal that have been identified to result in an individuals' threshold for trauma and their resulting vulnerability to the development of PTSD. As a result of the growing body of literature relating to trauma exposure and PTSD, several theories were developed to further classify and understand the development and expression of psychological symptomatology following traumatic event exposure and explain the variances in diagnostic rates.

Models of PTSD

Early Theories of PTSD. Early theories of PTSD share several core theoretical assumptions that are founded in cognitive theory. These theories propose that an individual brings a set of pre-existing beliefs and assumptions of the world that are incompatible with the trauma experience (Brewin et al., 1996), and unsuccessful attempts to integrate trauma information into the individuals existing assumptions leads to the development of PTSD. Early cognitive theories have been identified to fall within the three categories of social-cognitive, behavioural conditioning, and information processing.

Social-Cognitive Theories. Social-cognitive theories (Bolton & Hill, 1996; Brewin et al., 1996; Horowitz, 1976; Janoff-Bulman, 1992) identify the negative impact exposure to trauma has on existing cognitive structures and processes, resulting in difficulties in the reconciliation of trauma information within the individuals pre-existing belief systems. The Stress Response Theory (Horowitz, 1976; Horowitz, 1986) proposes that when faced with trauma, an individual engages in two unconscious and opposing processes. The first aims to protect the individual by suppressing and avoiding trauma-related input and the second promoting mindful trauma processing of intrusive memories. It is theorised that the oscillation between these two processes allows the individual to work through trauma-related input and decreases the intensity of distress related to trauma-related stimuli (Horowitz, 1986). Failure to process the traumatic event in this way is proposed to result in the experience of persistent posttrauma reactions, with trauma-related information remaining in active memory and the process of avoidance and intrusion ongoing (Horowitz, 1986). The Theory of Shattered Assumptions (Janoff-Bulman, 1992) identifies the role of internal models or assumptive worlds that support individuals in their everyday lives, motivate them to overcome difficulties, and assist with future planning. This model also highlights the difficulties experienced by individuals when the experience of traumatic events shatters these

assumptions. Three common assumptions have been identified to relate to and influence trauma responses and include an assumption that the world is benevolent, that the world is meaningful, and that the individual is worthy (Janoff-Bulman, 1992). Changes and updating of assumptions are proposed to occur spontaneously through engagement in the re-experiencing and avoidance cycle described by Horowitz (1986) however, can also be deliberately altered through intentional reflection and cognitive change.

These social-cognitive theories provide an explanation for the range of emotions and beliefs experienced following exposure to trauma however, they do not provide a clear differentiation between PTSD and other disorders (i.e., depression and anxiety), do not explain the role of trauma cues and environmental triggers, and do not explain the experience of cognitive and somatic responses to trauma reminders commonly experienced in PTSD (Brewin & Holmes, 2003).

Conditioning Theories. Conditioning theories (Keane et al., 1985; Mowrer, 1960) focus primarily on learned associations and avoidance behaviour as contributors to the development and maintenance of PTSD. Conditioning theories describe how internal and external stimuli related to the traumatic event acquire the ability to elicit fear and describe the central role of avoidance in the development of PTSD (Brewin & Holmes, 2003). Mowrer's (1960) Two-factor Learning Theory proposes that neutral stimuli present in the environment within which the trauma occurs acquires fear-eliciting properties through a process of classical conditioning. The processes of stimulus generalisation and higher-order conditioning result in the experience of fear to a wide variety of stimuli in the environment and increased distress for the individual (Keane et al., 1985). Repeated exposure to spontaneous memories of the trauma experience is proposed to support the normal extinguishing of associations; however, trauma responses including, avoidance and distraction reinforce the obtained reduction in fear and distress and result in the maintenance of PTSD (Keane et al., 1985;

Mowrer, 1960).

Conditioning theories explain several prominent features of PTSD, however, do not account for re-experiencing symptoms, symptoms related to individual beliefs (i.e., shame and guilt) and perceived threat, or the role of appraisals and coping strategies (Brewin & Holmes, 2003).

Information-Processing Theories. Information-processing theories (Foa et al., 1989; Lang, 1979) describes the impact of the traumatic event, the experience of trauma-related threat and fear, and a successive failure of trauma information integration following trauma exposure. Lang (1979) proposed that traumatic events were represented in memory in three forms and that cognition and effect were integrated as an overall response to facilitate the rapid escape or avoidance of danger. Within this framework, information about the traumatic event is proposed to be stored as stimulus information (i.e., sights and sounds), response information (i.e., emotional and physiological), and meaning information (Lang, 1979). Individuals with PTSD are proposed to have unusually coherent and stable fear memories, which are activated by a range of environmental stimuli related to, or reflective of, the traumatic event, triggering the physiological memories of the trauma, and precipitating meaning-making judgements related to the original trauma experience (Lang, 1979).

Information-processing theories explain the cognitive processes involved in the processing of a traumatic experience, including, effects on attention and the role of assumptions on trauma reminders; however, they do not explain the importance of beliefs and emotions other than fear in the development of PTSD (Brewin & Holmes, 2003). These early theories of PTSD development were limited by the dearth of published research on trauma, memory, and PTSD available at the time and focused heavily on the experience of fear and memory processing. Recent theories have built upon these early ideas to address identified limitations and provide a model of PTSD development that addresses the totality of PTSD

symptom expression following exposure to trauma.

Emotional Processing Theory. The Emotional Processing Theory proposes that activation of three types of interlinked information precipitates the development of PTSD (Foa & Kozak, 1986; Foa & McLean, 2016; Foa & Rothbaum, 1998). Activation of the fear structure in long-term memory (e.g., representations of feared stimuli), together with response information (e.g., behaviours, cognitions, somatic sensations), and meaning information (e.g., concept of danger, assumptions, schemas) are proposed to evoke fear and motivate the engagement of escape and avoidance behaviours (Foa & Kozak, 1986; Foa & McLean, 2016; Foa & Rothbaum, 1998). Consistent with early conditioning theories (Keane et al., 1985; Mowrer, 1960), the Emotional Processing Theory proposes that exposure to a traumatic event results in a generalisability of the fear response to a wide range of stimuli, increasing the size of the fear structure in long-term memory, and the likelihood of its activation. The experience of avoidance behaviours and emotional numbing is theorised to result from the engagement of cognitive mechanisms for deactivating the fear structure (Foa & Kozak, 1986; Foa & McLean, 2016; Foa & Rothbaum, 1998). The engagement of avoidance behaviours is thus proposed to prevent the fear structure and dysfunctional beliefs from being modified, thereby contributing to the persistence of PTSD symptoms (Foa et al., 1992). The Emotional Processing Theory also highlights the importance of an individuals' pre-trauma knowledge and beliefs of themselves, the world, and others, known as their schema construct (Foa & Rothbaum, 1998). Fear structures interact and are influenced by the individuals' schema construct, which is proposed to account for the variation of responses observed following exposure to trauma. Individuals with rigid and negative pre-trauma schemas are more vulnerable to PTSD due to the propensity for the trauma to reinforce and strengthen negative appraisals of the self, others, and the world (Foa & Rothbaum, 1998). Mitigation of PTSD symptoms in the Emotional Processing Theory is proposed to occur through stimulus

reevaluation and exposure to corrective information (Foa et al., 1998). However, this hypothesis is inconsistent with current literature that proposes the extinguishing of fear to occur through a process of overriding or inhibiting fear memories with new ones and not through a process of altering them (Taylor, 2017).

Dual Representation Theory. The Dual Representation Theory of PTSD (Brewin et al., 1996; Brewin, 2008) proposes that sensory input is subject to both conscious (i.e., autobiographical and verbally accessible memories) and nonconscious (i.e., situationally accessible knowledge) information processing and storage, and that exposure to trauma will lead to dual representations in memory. This theory proposes that verbally accessible memories comprise sensory, response, and meaning information and are characterised by their ability to be purposefully retrieved and edited by the individual (Brewin et al., 1996; Brewin, 2008). Situationally accessible memories cannot be purposefully accessed and are only available when direct cues related to the experienced traumatic event prompt their activation (Brewin et al., 1996). The Dual Representation Theory proposes that these representations are encoded in parallel during and following exposure to trauma and together account for the range of symptomatology experienced in PTSD (Brewin et al., 1996; Brewin, 2008). Mitigation of PTSD symptoms in the Dual Representation Theory is proposed to occur through a cognitive process, in which representations of past traumas and associated bodily states are repeatedly entered into and actively manipulated within working memory to facilitate cognitive readjustment, accommodation, and meaning making (Brewin et al., 1996). However, this hypothesis fails to account for the symptoms of emotional numbing and dissociative reactions often associated with PTSD. In contrast to other theories of PTSD, the Dual Representation Theory purports that the original trauma memories remain intact, are not altered, and may be re-experienced in response to specific trauma reminders (Brewin et al., 1996; Brewin, 2008).

The Cognitive Model. The Cognitive Model of PTSD (Ehlers & Clark, 2000) proposes that symptom persistence in PTSD results when an individual processes their traumatic experience in a way that leads to a sense of serious, current, and ongoing threat. This perception of threat results from excessively negative appraisals of the traumatic experience and/or its sequelae and a disturbance of autobiographical memory characterised by poor elaboration and contextualisation, strong associative memory, and strong perceptual priming (Ehlers & Clark, 2000). Appraisals have been identified to contribute to the development and maintenance of PTSD through the production of negative cognitions and emotions proposed to precipitate the engagement of maladaptive and dysfunctional coping strategies and the exacerbation of PTSD symptomatology. Ehlers and Clark (2000) expanded upon earlier cognitive models (Foa & Rothbaum, 1998; Jones & Barlow, 1990) to identify a wide range of negative appraisals centred upon the traumatic event. These included an overgeneralisation of threat (i.e., people perceive me to be weak), an evaluation of individual actions at the time or directly following the traumatic event (i.e., I deserve to be hurt), an evaluation of trauma sequela including, symptom expression (i.e., I'll never recover), an evaluation of external perceptions (i.e., they see me as weak), and an evaluation of the future (i.e., my life is ruined; Brewin & Holmes, 2003; Ehlers & Clark, 2000). These appraisals cover a range of cognitions and emotions that contribute to the development and maintenance of PTSD, including, perceived danger, loss and fear, and the violation of standards by oneself or others (Brewin & Holmes, 2003).

Trauma information is often poorly organised, fragmented, and difficult to intentionally recall, yet individuals with PTSD frequently report the experience of involuntary and intrusive memories involving re-experiencing aspects of the trauma in a vivid, emotional, and sensory way (Ehlers & Clark, 2000). The Cognitive Theory of PTSD proposes that sensory impressions, rather than thoughts, form the foundation of re-experiencing and that

these memories can be experienced across all physical modalities (Ehlers & Clark, 2000; Ehlers & Steil, 1995; van der Kolk & Fisler, 1995). These sensory impressions are theorised to be experienced as current reactions and not as memories from the past, contributing to experienced distress and exacerbating PTSD symptomatology (Ehlers & Clark, 2000). The emotions (including, physical reactions and motor responses) accompanying these impressions are experienced in real-time and are thought to be experienced in the same way as those endured at the time of trauma exposure (Ehlers & Clark, 2000). These impressions are further proposed to be experienced with or without a conscious recollection of the traumatic event and their onset precipitated by a wide range of stimuli and situations (Ehlers & Clark, 2000).

Mitigation of PTSD symptoms within the Cognitive Theory of PTSD is proposed to occur through the elaboration and integration of the trauma memory into the individuals preceding experience, the modification of negative appraisals, and the cessation of dysfunctional behavioural and cognitive strategies that prevent memory elaboration, exacerbate symptomatology, and restrict the reassessment of problematic appraisals (Ehlers & Clark, 2000). This cognitive model identifies the significant contribution of sensory impressions to the development and maintenance of intrusive symptoms and successive engagement in maladaptive cognitive and behavioural coping strategies; however, it has to date, failed to address these sensory impressions in prescriptive therapeutic practices or empirical research (Ehlers & Clark, 2000).

Identified Limitations of Current Theories. The conceptualisation of PTSD as a fear-based disorder with a known etiology, informed early studies and theories of PTSD and contributed to the development of interventions aimed at fear extinction and the restructuring of cognitive processes that maintain fear-based responses (Foa & Kozak, 1986). Whilst fear has been demonstrated to be a significant contributor to the development of traumatic stress

and distress (Brewin et al., 2000), fear reactivity alone does not account for the heterogeneity of symptom expression observed for individuals with PTSD (Breh & Seidler, 2008; Deprince et al., 2011). Fear itself, may also be a very real, current, and ongoing part of the individuals' experience due to ongoing and/or forced contact with the perpetrator of IPV. Ehlers and Clark (2000) provide a detailed account and empirically supported model of PTSD development and have significantly enhanced current understanding relating to the role of negative appraisals and cognitive coping strategies that influence the course of the disorder (Brewin & Holmes, 2003; Ehlers & Clark, 2000).

Intimate Partner Violence and PTSD

Advancements in clinical and empirical knowledge related to trauma exposure and PTSD, including, theory development, have been primarily attained by examining military service members and individuals exposed to single-incident trauma typologies (i.e., transportation accidents, physical violence, sudden unexpected death of a loved one). It is widely accepted that most individuals will experience significant trauma throughout their lifetime (Benjet et al., 2016; Kessler et al., 2017) however, only a small proportion of individuals will experience PTSD following trauma exposure (Atwoli et al., 2015). One explanation for the varying prevalence of PTSD following trauma exposure is the type of trauma experienced (Kessler et al., 2017). Several distinctions between the experience of IPV and other forms of trauma exposure have been identified and documented in the literature (Dutton, 1992; Kessler et al., 2017). Individuals exposed to IPV typically experience multiple incidences of victimisation and a greater severity of experienced abuse (i.e., abuse across multiple domains – sexual, physical, emotional) than individuals who experience single-incident, non-personal forms of trauma exposure (i.e., natural disaster, traffic accident; Houskamp & Foy, 1991; Jones et al., 2001).

The unique influences of IPV exposure upon individuals are proposed to result in

changes to cognitive processes that are not typically observed for other non-personal types of trauma exposure (Dutton, 1992). Female survivors of IPV have reported the experience of multimodal abuse (i.e., varying and multiple experiences of a range of abuse typologies), which has been identified to contribute to deficits in assertiveness, self-efficacy, and self-advocacy (Kubany et al., 2004; Ozer & Bandura, 1990) and to contribute to a greater frequency and severity of experienced PTSD symptomatology (Caramanica et al., 2015; Fossion et al., 2015; Liu et al., 2017). Cognitions centred upon shame and guilt have also been identified to be prevalent within populations of IPV survivors and are proposed to relate not only to the individuals' experience of IPV but also their perceptions relating to their thoughts, behaviours, and emotional processes during and after trauma exposure, as well as their successive decisions to stay or remain in the relationship (Dutton, 1992; Kubany et al., 2004). The actual threat of violence continuation in IPV is often pervasive due to the relational context of the abuse and other interpersonal factors that result in ongoing contact with the perpetrator (i.e., legal and/or financial processes, shared parenting; Dutton, 1992; Kubany et al., 2004). As such, avoidance of direct and environmental triggers for previously experienced trauma is not always possible. Ongoing contact with the perpetrator of IPV is likely to result in repeated and ongoing trauma exposure and an exacerbation of PTSD symptomatology (Dutton, 2012). The identified distinctions between IPV and other non-personal forms of trauma exposure provide an important framework from which to examine PTSD following exposure to IPV and highlight the importance of the interpersonal nature of violence upon the differential development of PTSD symptomatology (Dutton, 2012).

Conceptualisations of IPV and its unique influence upon PTSD development have been drawn from previously documented theories of PTSD. Bolton and Hill (1996) extended upon the Theory of Shattered Assumptions (Janoff-Bulman, 1985; Janoff-Bulman, 1992) and proposed that the unpredictable and unpleasant nature of interpersonal-based traumatic

experiences result in feelings of intense helplessness, and challenges previously held beliefs related to safety, predictability, and competence in oneself, others, and the world. The experience of conflict, unreality, and distress results from the individuals' inability to reconcile their traumatic experience within previously held beliefs and assumptions (Bolton & Hill, 1996). Within the context of IPV boundary violations and violence occurring within a once safe and trusting interpersonal relationship is proposed to fracture the individuals' assumptions of safety and trust whilst also restricting access to previously engaged resources (i.e., the intimate partner), further limiting the survivors' capacity to achieve a resolution to the cognitive dissonance experienced as a result of trauma exposure (Dutton, 1992). Ehlers and Clark (2000) identified a thought process termed 'mental defeat' that describes an individuals' perceived inability to influence their fate within the context of trauma exposure. This process has been identified to contribute to self-perceptions centred upon being ineffective, weak, and unable to protect oneself (Ehlers & Clark, 2000). Prior or repeated experiences of trauma, helplessness, and weakness have been identified to contribute to the experience of this negative self-appraisal, the perception of the self as vulnerable and a target for others hostility, and the development of PTSD (Brewin & Holmes, 2003; Ehlers & Clark, 2000). This cognitive process is thus likely to contribute to feelings of dependence, isolation, and submission on the part of the victim, and repeated enactment of violence by the perpetrator of IPV, as they achieve greater dominance and control over their victim (Fugate et al., 2005; Rogers et al., 1996; Stark, 2007; Walker, 1984).

Moral Injury Theory. Litz and colleagues (2009) drew upon existing psychological theories of PTSD to propose a conceptual model of moral injury aimed at defining and describing the psychological sequela of interpersonal trauma exposure. Moral injury has been defined as "the lasting psychological, biological, spiritual, behavioural, and social impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral

beliefs and expectations” (Litz et al., 2009, pp. 697). More recently, moral injury has been defined as a disruption to an individuals’ expectations and confidence in their own or others capacity and motivation to behave in a just and ethical manner as a result of exposure to cruel, inhumane, depraved, or violent acts that lead to pain and suffering, or the death of others (Drescher & Foy, 2012). The Moral Injury Theory proposes that following the experience of a morally injurious event, a conflict between the event and pre-existing cognitive schemas is experienced (Litz et al., 2009). When conflicts between previously held beliefs and the experience remain unresolved, feelings of shame, guilt, and anxiety are experienced and lead to avoidance behaviours (i.e., withdrawal and isolation; Litz et al., 2017). The adoption of avoidance strategies is proposed to inhibit the opportunity for corrective experiences that challenge thoughts related to shame and guilt, leading to an internalisation of feelings and beliefs relating to the event and the assimilation of event-related beliefs into the wider perception of themselves (Litz et al., 2009). Moral injury is associated with significant psychological sequelae including, inner turmoil, self-condemnation, shame, concealment, hopelessness, and withdrawal (Drescher & Foy, 2012; Litz et al., 2009).

Emerging evidence indicates that the psychological outcomes following exposure to moral injury-based traumas differ compared to those of danger-based traumas (i.e., events that involve life threats to self or others; Held et al., 2019). It has been proposed that the experience of PTSD following exposure to moral-based injurious trauma (i.e., interpersonal violence) is mediated by shame, guilt, and anger, whereas PTSD resulting from exposure to danger-based trauma (i.e., combat exposure) is purported to be mediated through dissociation, fear, and anger (Held et al., 2019; Jordan et al., 2017). The Moral Injury Theory provides a useful framework for examining the role of trauma typologies upon PTSD and highlights the role of cognitive processes in the development and maintenance of the disorder; however, the specific processes through which moral injury leads to the development of psychological

sequelae and the process of moral injury resolution, is poorly understood (Frankfurt & Frazier, 2016; Held et al., 2019; Litz et al., 2009).

Betrayal Trauma Theory. The Betrayal Trauma theory proposes a theoretical framework for understanding PTSD development following the experience of interpersonal violence and highlights the importance of the relationship between the survivor and the perpetrator of violence upon mental health sequelae (Freyd, 1996). It is proposed that the experience of trauma enacted by an individual for whom the survivor has previously or currently cares for, trusts, or depends on exerts unique impacts upon the survivors' cognitive processes, resulting in alterations to cognitions not seen within other forms of non-personal, low betrayal traumas (Freyd et al., 2001). When a perpetrator is perceived as integral to an individuals' psychological, physical, or social survival, the maintenance of interpersonal connection and attachment is identified as essential (Freyd, 1996). Thus, in attempts to reconcile their traumatic experiences with the need for survival, individuals exposed to betrayal trauma often fail to identify their experience as violent or abusive and adopt certain cognitive appraisals related to self-blame and betrayal in an attempt to maintain connectedness and perceived safety and attachment (Freyd, 1996).

Examination of this theory in a community sample provided support for the proposed framework of betrayal trauma and demonstrated high appraisals of self-blame to be related to the experience of interpersonal violence high in betrayal trauma (Babcock & DePrince, 2012; DePrince et al., 2011; Martin et al., 2013). The severity of experienced interpersonal violence was also significantly related to higher levels of experienced self-blame (Babcock & DePrince, 2012; DePrince et al., 2011; Martin et al., 2013). The Betrayal Trauma Theory also posits that the experience of PTSD following trauma exposure is experienced within two distinct areas of harm, including, life threat and social betrayal, with the symptom clusters of PTSD falling within these two domains (Freyd, 1996; Freyd et al., 2008). The dimension of

life threat is proposed to account for and describe the symptoms of anxiety, hyperarousal, and intrusive memories, whilst the social betrayal dimension explains experienced dissociation, numbness, and the maintenance of relationships within the interpersonal violence context (Freyd et al., 2008). Research examining these dimensions has demonstrated a relationship between the survivors' level of dependence on the perpetrator and the degree of experienced impairment and/or disruption to memory following the experience of physical and sexual abuse (Freyd et al., 2008). Despite these proposals and preliminary research outcomes, the Betrayal Trauma Theory has yet to be extensively studied in clinical and community settings and the applicability of the model to a wider interpersonal violence survivorship group has yet to be demonstrated.

Summary and Gaps in Literature

Current theories and emerging research have demonstrated PTSD to be associated with disturbances across various psychological processes including, memory, cognition, emotional, and behavioural domains. There is extensive evidence demonstrating that cognitions play an important role in the development and maintenance of PTSD, with theoretical development and clinical interventions centred upon the identification and modification of posttrauma cognitive processes (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa et al., 1992; Foa & McLean, 2016; Held et al., 2019; Janoff-Bulman, 1986; Kubany et al., 1996; Kubany & Watson, 2002). For individuals exposed to IPV, the role of shame, guilt, and negative cognitions about the self, others, and the world, have been postulated to be unique contributors to the experience of PTSD (Babcock & DePrince, 2012; DePrince et al., 2011; Dutton, 1992; Freyd, 1996; Held et al., 2019; Jordan et al., 2017; Martin et al., 2013). These cognitions have been theorised to contribute to the chronicity of experienced PTSD symptoms, the vulnerability of the individual to successive trauma and violence, and the experience of negative mental and physical health sequelae (Babcock & DePrince, 2012;

DePrince et al., 2011; Dutton, 1992; Freyd, 1996; Held et al., 2019; Jordan et al., 2017; Martin et al., 2013). Despite the identified importance of these cognitions, their role in the development and maintenance of PTSD following the experience of IPV remains unaddressed in empirical research.

Research Aims

This study aimed to examine the relationship between shame, guilt, and posttrauma negative cognitions upon the expression of PTSD symptomatology for survivors of IPV. To achieve this aim, a series of hypotheses were developed.

Hypotheses

Hypothesis One. It was hypothesised that a significant positive relationship between posttrauma cognitions and PTSD would be identified. Specifically, higher scores on measures of shame, guilt, and negative cognitions will result in higher scores on a measure of PTSD symptom expression.

Hypothesis Two. It was hypothesised that in comparison to IPV survivors who do not meet diagnostic criteria for PTSD, IPV survivors reporting symptoms consistent with a diagnosis of PTSD will experience higher rates of shame, guilt, and negative posttrauma cognitions.

Hypothesis Three. It is predicted that the presence of shame, guilt, and negative posttrauma cognitions will account for a significant proportion of the variability in PTSD symptom expression for survivors of IPV.

Method

Design

This study employed an online quantitative research design to measure the identified cognitions of shame, guilt, and negative posttrauma cognitions for IPV survivors. Online survey methods provide an easily accessible means for collecting data from a wide population

sample.

Procedure

Participants were recruited through social media using a chain sampling method; a nonprobability sampling method using participants to recruit future participants from among their acquaintances (i.e., sharing the survey link with friends or on social media pages); as well as convenience sampling (i.e., researcher dissemination within personal and professional forums). Participation was sought from the general population and through IPV-specific social media information and support groups. Access to the online survey portal was provided for a duration of five months. The participant information sheet was provided to the owner/administrator of individual social media pages that offer information and support to individuals self-identified to have experienced IPV. Gatekeeper approval for sharing the survey information was obtained from the owner/administrator of individual pages prior to disseminating the online questionnaire (see Appendix B). Participants were provided with a Participant Information Sheet (explanatory statement; see Appendix C) at the study's commencement. This document outlined the nature and purpose of the study, inclusion criteria, possible risks and benefits to participation, the intended use and storage of data, the requirement for voluntary participation and option to withdraw, and the provision of support services and crisis contact details. Following provision of the participant information statement, participants acknowledged their understanding of the statement, their knowledge of voluntary participation and freedom to withdraw, and consented to participate in the study.

Participants

Adult participants with access to a computer, mobile phone, or tablet device were sought for participation in the study. The focus of this investigation is upon prior exposure to IPV. As such, participants currently engaged in an IPV relationship were not eligible to participate in this research. Participants were asked about the current status of their IPV

relationship at the commencement of the questionnaire (i.e., “*Are you experiencing Intimate Partner Violence in your CURRENT relationship? Intimate partner violence includes any behaviour that causes physical, psychological (emotional), financial, or sexual harm - also commonly referred to as domestic violence*”). Affirmative responses were redirected to the end of the survey, and participants were provided with local support and contact information.

The provided participant information statement outlined inclusion criteria specifying participants sought were adult (individuals ages 18 years and over) IPV survivors however; one participant aged 17 elected to participate in the research study and completed the full online questionnaire. The National Statement of Ethical Conduct in Human Research (2007) has outlined that mature minors (i.e., adolescents who have decision making capacity) can provide consent without additional parental or guardian consent, when the young person has the capacity to understand what the research entails. Given this individual was provided with an information statement relating to the risks and benefits of engaging in the online questionnaire, was able to understand the content of the survey, was able to provide valid responses to posed questions, and was providing their individual account of IPV, it was deemed appropriate to include their responses in the final data set.

Participation was obtained from a total of 204 respondents with personal experience of IPV. Of the 204 individuals who completed the online questionnaire, 185 (90.69%) were female, 17 (8.33%) were male, one (0.49%) identified as non-binary, and one (0.49%) as a transgender male. An examination of the sexual orientation of the 204 participant sample indicated 170 (83.33%) participants to identify as heterosexual, 23 (11.27%) as bisexual, seven (3.43%) as homosexual, two as pansexual (0.98%), and two (0.98%) who did not disclose their sexual orientation. Due to the small number of responses obtained for males and individuals experiencing IPV within non-heterosexual relationships, it was not deemed appropriate to include responses from these participants in the final data set, owing to the

inability to achieve appropriate statistical power for these small population groups. The low response rates for males and non-heterosexual IPV survivors are likely reflective of the current lack of IPV recognition within gender diverse or same-sex relationships and under-reporting of IPV in general (Donovan & Hester, 2010; Leonard et al., 2008). The use of a homogenous sample at this early stage of hypotheses testing and analysis was deemed appropriate due to this study's exploratory nature. Recommendations for further inclusion studies will be discussed later in this chapter. Nineteen non-female participants and 26 respondents who described their experience of IPV within non-heterosexual relationships were removed from the data set, resulting in a final data set containing 159 female participants with previous experience of male enacted violence within a heterosexual intimate relationship.

Materials

Participants were provided with access to an online self-report questionnaire composed of 200 items including, demographic questions and standardised assessment measures (see Appendix D). Participants were asked to provide information regarding their age, gender, sexual orientation, nationality, and current relationship status. In addition, questions were included to elicit information about their experience of IPV, including, the recency of relationship termination (i.e., "*How long ago did this violent relationship end?*"), duration of the IPV relationship, number of previous IPV relationships, and the age at which IPV was first experienced (i.e., "*How old were you when you FIRST experienced Intimate Partner Violence?*"). Measures were selected for use within this study based upon their capacity to effectively measure posttrauma cognitions related to the experience of intimate partner violence and to provide an assessment of commonly experienced psychological sequelae following the experience of IPV. Measures were required to have good reliability and validity and published efficacy for use within populations of IPV survivors. The average

completion time for the online questionnaire was 28 minutes.

The Composite Abuse Scale (Revised) Short Form (CAS-R-SF; Hegarty, 2007).

The CAS-R-SF is a 15-item self-report measure of abusive behaviours enacted by one party against another within an intimate relationship (Hegarty, 2007). The CASR-SF is a valid and reliable short form of the original Composite Abuse Scale (Hegarty, 2007). The CASR-SF provides a shorter, easy-to-answer scale, whilst retaining and enhancing the strengths of the key Composite Abuse Scale domains (Ford-Gilboe et al., 2016). The CAS-R-SF evaluates intimate partner abuse across the four domains of severe combined abuse (e.g., “*raped me*”), emotional abuse (e.g., “*told me I wasn’t good enough*”), physical abuse (e.g., “*threw me*”), and harassment (e.g., “*followed me*”). The CAS was developed and validated using clinical (Hegarty et al., 2005) and non-clinical population samples (Hegarty et al., 1999; Hegarty et al., 2005). Confirmatory factor analysis conducted across populations provided evidential support for the validity of the four-factor model (Hegarty et al., 1999; Hegarty et al., 2004). The CAS has an evidential basis for good face, content, criterion, and construct validity across population samples (Hegarty et al., 1999; Hegarty et al., 2005). The CAS has also demonstrated good internal consistency ($\alpha = .85$; Hegarty et al., 2005). The sensitivity and specificity of provided cut-off scores for the CAS total and sub-scale scores have been demonstrated to be high, allowing for the accurate identification of abused individuals (Hegarty et al., 2004). In the current study, a reliability analysis of the scale demonstrated the CAS-R-SF to have excellent internal consistency ($\alpha = .91$).

The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013). The PCL-5 is a 20-item self-report measure for the assessment of experiences and symptomatology consistent with the diagnostic criteria provided by the DSM-5 (APA, 2013). The PCL-5 asks individuals to indicate the frequency of experiences (e.g., “*repeated, disturbing, and unwanted memories of the stressful experience*”) and symptoms (e.g., “*having*

difficulty concentrating”) of posttraumatic stress over the previous one-month period. The PCL-5 has been demonstrated to have moderate diagnostic accuracy and moderate correlations with the Clinician-Administered PTSD Scale (Weathers et al., 2013), which is considered the gold standard for diagnosing PTSD (Forbes et al., 2001). The PCL-5 is not a diagnostic tool but has been validated as a means for screening individuals, contributing to the formulation of provisional PTSD diagnoses, and monitoring PTSD symptom expression in response to treatment. The PCL-5 provides a total symptom severity score and four DSM-5 symptom cluster scores. Research suggests using a total PCL-5 severity cut-off score of 31 to indicate symptoms consistent with a probable PTSD diagnosis (Blevins et al., 2015). The psychometric properties of the PCL-5 have been examined in community and clinical populations and have been demonstrated to be good (Blevins et al., 2015). The PCL-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Blevins et al., 2015; Bovin et al., 2016). The PCL-5 has demonstrated good internal consistency with a Chronbachs’ alpha coefficient reported of .95 (Wortmann et al., 2016). In the current study, a reliability analysis demonstrated the PCL-5 to have excellent internal consistency ($\alpha = .94$).

The Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996). The TRGI is a 32-item self-report tool used to measure an individuals’ experience of trauma-related guilt. The TRGI asks questions related to an individuals’ behavioural, emotional, and cognitive experiences during and in response to their experience of trauma. The TRGI provides a measure of trauma-related guilt across the domains of Global Guilt (e.g., “*Indicate how frequently you experience guilt that relates to what happened?*”), Distress (e.g., “*What happened causes me emotional pain*”), and Guilt Cognitions (e.g., “*I could have prevented what happened*”). The Guilt cognitions scale is further divided into the three cognitions of hindsight bias/responsibility (e.g., “*I should have known better*”), wrongdoing (e.g., “*I had*

some thoughts or beliefs that I should not have had”), and lack of justification (e.g., *“If I knew today – only what I knew when the event(s) occurred – I would do exactly the same thing”*).

The psychometric properties of the TRGI have been examined across clinical and community populations. The internal consistency of the total scale score has been reported between .86 and .90, and between .67 and .82 for the subscales (Kubany et al., 1996). Previous studies have demonstrated the TRGI to have temporal stability, with test-retest correlations reported between .84 and .86 (Kubany et al., 1996). Convergent validity with measures of PTSD, depression, and trait shame have also been demonstrated across various community and trauma exposed populations (Kubany et al., 1996). In the current study, a reliability analysis of the scale demonstrated the TRGI to have good internal consistency ($\alpha = .86$).

The Trauma Related Shame Inventory (TRSI; Oktedalen et al., 2014). The TRSI is a 24-item self-report measure of trauma-related thoughts and feelings experienced following exposure to a traumatic experience. The TRSI provides an assessment of total trauma-related shame, as well as four subscale scores. Shame within the TRSI is measured across two facets and two evaluative situational conditions. Facet one, Referent shame, includes the two evaluative situational conditions of self-referent shame (internal-referent shame), and other-referent shame (external-referent shame). Facet two, Aspect shame, represents different subcomponents of shame consisting of self-condemnation (cognitive component) and an affective-behavioural component (Oktedalen et al., 2014). Together these facets and evaluative conditions provide an assessment of trauma-related shame across the four domains grossly defined as Internal-Condensation (e.g., *“I am ashamed of myself because of what happened to me”*), External-Condensation (e.g., *“If others knew what happened to me, they would view me as inferior”*), Internal-Affective/Behavioural, (e.g., *“I am ashamed of the way*

I felt during my traumatic experience”), and External-Affective/Behavioural (e.g., *“If others knew what happened to me, they would be disgusted with me”*). Examination of the psychometric properties of the TRSI have demonstrated the measure to have good internal consistency with a Chronbachs’ alpha coefficient reported of .87 (Oktedalen et al., 2014). Convergent validity with measures of guilt, self-judgement, and PTSD have also been demonstrated (Oktedalen et al., 2014). In the current study, a reliability analysis of the scale demonstrated the TRSI to have excellent internal consistency ($\alpha = .97$).

The Post-traumatic Cognitions Inventory (PTCI; Foa et al., 1999). The PTCI is a 33-item self-report scale assessing dysfunctional cognitions following the experience of trauma. The PTCI measures the type of thoughts experienced following exposure to trauma, across the three subscales of Negative Cognitions about Self (e.g., *“I am a weak person”*), Negative Cognitions about the World (e.g., *“people can't be trusted”*), and Self Blame (e.g., *“the event happened because of the way I acted”*). The construct validity and three factor structure of the PTCI has been supported across community and clinical populations using factor analysis (Foa et al., 1999). The psychometric properties of the PTCI have demonstrated excellent internal consistency, with Chronbachs’ alpha scores reported between .86 to .97 for the three subscales (Foa et al., 1999). Good test-retest reliability has also been obtained for total and subscale scores (.75 to .89; Foa et al., 1999). The PTCI correlated moderately to strongly with measures of PTSD severity, depression, and general anxiety (Foa et al., 1999). The PTCI compared favourably with other measures of trauma-related cognitions and demonstrated a superior ability to discriminate between traumatised individuals with and without PTSD (sensitivity = .78, specificity = .93; Foa et al., 1999). In the current study, a reliability analysis demonstrated the PTCI to have excellent internal consistency ($\alpha = .96$).

The Cognitive Emotion Regulation Questionnaire – Short Form (CERQ – Short Form; Garnefski et al., 2002). The CERQ – Short Form is an 18-item self-report tool

developed to identify an individuals' use of cognitive strategies following the experience of a negative event or situation. The CERQ consists of nine conceptually distinct subscales, each consisting of four items and each referring to an individuals' cognitions following the experience of threatening or stressful life events. These cognitions include Self-blame (e.g., *"I feel that I am the one to blame for it"*), Other-blame (e.g., *"I feel that others are responsible for what has happened"*), Rumination (e.g., *"I dwell upon the feelings the situation has evoked"*), Catastrophizing (e.g., *"I continually think how horrible the situation has been"*), Putting into perspective (e.g., *"I think that it all could have been much worse"*), Positive reappraisal (e.g., *"I think I can learn something from the situation"*), Positive refocusing (e.g., *"I think of pleasant things that have nothing to do with it"*), Acceptance (e.g., *"I think that I cannot change anything about it"*), and Refocus on planning (e.g., *"I think about how I can best cope with the situation"*). The factors of Self-blame, Rumination, Catastrophizing, and Blaming others are identified as maladaptive cognitive processes, whilst Acceptance, Positive reappraisal, Positive refocusing, Putting into perspective, and Refocus on planning are identified to be adaptive cognitive processes (Aldao & Nolen-Hoeksema, 2010; Garnefski et al, 2001). Previous research has demonstrated the sub-scales of the CERQ to have adequate internal consistency (ranging from .68 to .86), test-retest reliability, and convergent validity with other measures of trauma and psychological distress (Garnefski et al., 2001; Garnefski et al., 2002). In the current study, a reliability analysis of the scale demonstrated the PTCI to have acceptable internal consistency ($\alpha = .70$).

Results

Data Diagnostics and Assumptions Analyses

Prior to commencing data analysis, several data diagnostics and assumptions were evaluated. A visual review of the data and examination of frequency statistics were conducted to identify missing data, data entry errors, and any assumption violations for the 270

participant responses collected. Missing data analysis identified 66 participants who did not complete the included standardised measurement tools following completion of the demographic questionnaire. This missing data represents a response rate of 75.56 percent. The study's response rate is defined as the number of individuals achieving full survey completion, divided by the number of respondents who did not achieve completion of any presented standardised measurement tools (Draugalis et al., 2008). The minimal acceptable response rate documented in the literature varies from 50 to 75 percent (Babbie, 1990; Bailey, 1987; Schutt, 1999), with 50 percent generally identified as the minimally acceptable full survey completion rate (Draugalis et al., 2008). The missing data represented in this survey falls within the provided rates and can be considered acceptable. Furthermore, given that the Composite Abuse Scale (Hegarty, 2007) was the first standardised measurement tool to be presented following demographic questions, it is hypothesised that a proportion of participants may have enacted their withdrawal right, in an attempt to prevent and/or minimise the potential for distress that may be evoked upon presentation of items examining their experiences of abuse.

Listwise deletion of the 66 participants with missing data, the 19 non-female participants, and the 26 respondents who described their experience of IPV within non-heterosexual relationships was conducted, with a resulting population sample size of 159. Power analysis using G*Power 3.1 indicated that the minimum sample size required for a regression model with five predictor variables was 132 (Faul et al., 2007). Table one provides a summation of the distribution data for the variables included in the data screening process. Visual examination of stem and leaf displays and box plots, demonstrated the data to be roughly symmetrical and bell-shaped, indicating univariate normality within the data set (Tabachnick & Fidell, 2013).

Table 1

Mean Scores, Standard Deviations, Range, and Normality statistics for Participant Scores on the PCL-5, CAS-SF, PTCI, CERQ, TRSI, and TRGI (N = 159)

	<i>M</i>	<i>SD</i>	Min.	Max.	Skewness	Kurtosis
PCL-5	44.94	17.97	0.00	77.00	-.31	-.72
CAS-SF	32.63	17.38	0.00	75.00	.19	-.76
PTCI Total	126.11	43.06	38.00	227.00	.10	-.74
CERQ Total	53.37	10.04	27.00	89.00	.32	.49
TRSI Total	26.05	20.66	0.00	72.00	.67	-.70
TRGI Global	2.36	0.53	1.00	3.50	-.44	-.32

Note: M = Mean, SD = Standard deviation, Min. = Minimum score, Max. = Maximum score.

There was evidence of moderate skewness for the TRSI total scale however, as all other variables appeared to be appropriately distributed, this was not identified to be of significant concern. Overall evaluation of the skewness for assessed variables indicates that the data is approximately symmetrical and normally distributed. The obtained scores for Kurtosis were considered acceptable and support the assumption of normal univariate distribution (George & Mallery, 2010; Hair et al., 2017; Tabachnick & Fidell, 2013). There was no evidence of univariate outliers within the sample data, and as the Mahalanobis distance ($MD = 4.96$) did not exceed the critical value ($\chi^2 = 20.52$; $df = 5$; $\alpha = .001$), multivariate outliers were not identified to be of concern (Howell, 2010).

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between predictor variables (CAS-SF, PTCI, CERQ, TRSI, TRGI)

and the criterion variable (PCL-5; see Table 2).

Table 2

Correlation Matrices for Predictor and Criterion Variables (N = 159)

	CAS-SF	PCL-5	TRGI	TRSI	PTCI	CERQ
CAS-SF	-					
PCL-5	.34***	-				
TRGI	.17*	.32***	-			
TRSI	.26***	.57***	.48***	-		
PTCI	.27***	.69***	.35***	.71***	-	
CERQ	-.13	.22***	.14	.18*	.16	-

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

Correlations between variables did not exceed the bivariate Pearson product-movement correlation coefficient of $r = .80$, demonstrating multicollinearity was not of concern within this data sample (Field, 2009; Tabachnick & Fidell, 2013). Assessed predictor variables were identified to correlate significantly with the criterion variable and as such were retained for further analysis. Overall, the results obtained from the completion of data diagnostics and assumption analyses indicated that the data obtained from the 159-participant sample met assumption requirements and were adequate for the planned data analyses. All analysis was run at $\alpha = .05$.

Participants

Participants ranged in age from 17 to 85 years ($M = 38.91$, $SD = 13.00$), and there were no statistically significant differences observed for women across different age groups upon their experience of PTSD symptomatology $F(6, 152) = 1.90$, $p = .084$ (see Table 3).

Table 3*Participant Demographics According to Obtained Scores on the PCL-5 (N = 159)*

	<i>n</i> (%)	PCL-5 Total Score	
		<i>M</i>	<i>SD</i>
Age of Participant			
17 - 24 years	26 (16.35)	42.31	17.98
25 – 34 years	33 (20.75)	49.27	18.19
35 – 44 years	46 (28.93)	47.17	17.85
45 – 54 years	37 (23.27)	45.35	17.40
55 – 64 years	13 (8.18)	35.62	16.81
65 – 74 years	3 (1.89)	30.00	9.17
75 and older	1 (0.63)	18.00	0.00
Relationship Status			
Single	65 (40.88)	48.89	17.15
Partnered	45 (28.30)	44.87	19.84
Married	26 (16.35)	39.65	17.40
Divorced	16 (10.06)	40.56	16.21
Other	7 (4.40)	38.29	13.05
Nationality			
Australian	99 (62.26)	43.78	18.19
USA	33 (20.75)	47.39	18.31
United Kingdom	13 (8.18)	46.00	15.28
New Zealand	5 (3.14)	50.00	13.96
Other	9 (5.66)	44.33	21.81

Note: n = Sample size; *M* = Mean score; *SD* = Standard deviation

Almost half of the participants (44.65%) reported themselves to be in a current non-violent relationship. There were no statistically significant differences in the experience of PTSD symptomatology for women based upon their current relationship status, $F(4, 154) = 1.87, p = .119$. More than half of respondents were Australian nationals (62.26%), and no statistically significant differences were obtained for women of differing nationalities upon scores on PTSD symptomatology, $F(5, 153) = 0.46, p = .806$.

IPV Experience

Participants reported the age at which they first experienced IPV (see Table 4). There were no statistically significant differences observed upon PTSD symptom scores due to the age at which IPV was first experienced, $F(3, 154) = 0.60, p = .614$. The number of IPV relationships a participant had previously experienced was identified to be statistically significant, $F(1, 157) = 3.94, p = .049$. Women experiencing one IPV relationship scored significantly lower on the PCL-5 ($M = 42.61; SD = 17.87$) than women experiencing multiple IPV relationships ($M = 48.31; SD = 17.71$).

There was a statistically significant negative correlation between obtained scores on the PCL-5 and the amount of time since the most recent IPV relationship ended, $r(157) = -.20, p = .011$; indicating that PTSD symptoms are more frequently experienced following relationship termination with a decrease in PTSD symptom experience over time. Statistically significant correlations were observed between scores on the PCL-5 and scores obtained on the CAS-SF, indicating that PTSD symptomatology is more frequently reported for women who experience greater incidences of physical ($r(157) = .28, p < .001$), sexual ($r(157) = .20, p = .013$), and psychological ($r(157) = .33, p < .001$) abuse within an IPV relationship.

Table 4*Information about IPV experience (N = 159)*

	<i>n</i> (%)	PCL-5 Total Score	
		<i>M</i>	<i>SD</i>
Age of onset of first IPV relationship			
Under 18 years	45 (28.30)	44.27	19.09
18-24 years	74 (46.54)	46.05	18.21
25-34 years	29 (18.24)	41.83	15.82
35-44 years	10 (6.29)	49.40	18.70
Number of IPV relationships			
1	100 (62.89)	42.30	18.20
2	41 (25.79)	49.15	15.97
3	14 (8.81)	45.50	19.01
4	3 (1.89)	69.00	6.00
5	1 (0.63)	56.00	0.00

Note: *n* = Sample size; *M* = Mean score; *SD* = Standard deviation

There was a statistically significant difference observed between participants that met cut-off criteria for the presence of clinically significant PTSD symptoms as measured by the PCL-5 (total score ≥ 31) and the experience of physical violence, $F(1, 157) = 5.12, p = .025$ and psychological violence $F(1, 157) = 7.37, p = .007$. There were no statistically significant differences between these two groups upon the experience of sexual violence, $F(1, 157) = 3.74, p = .055$ (see Table 5).

Table 5*CAS Scores for Female Survivors of Male IPV Who Met and Did Not Meet Cut Off Criteria**Provided by the PCL-5 (N = 159)*

	<i>n</i>	<i>M</i>	<i>SD</i>
CAS – Total Score			
Meets Cut-off	124	34.66	16.99
Does not meet cut-off	35	25.43	17.07
CAS - Physical			
Meets Cut-off	124	1.61	1.25
Does not meet cut-off	35	1.09	1.07
CAS - Sexual			
Meets Cut-off	124	2.10	1.61
Does not meet cut-off	35	1.51	1.55
CAS - Psychological			
Meets Cut-off	124	2.97	1.30
Does not meet cut-off	35	1.50	1.37

Note: n = Sample size; M = Mean score; SD = Standard deviation

PTSD Symptomatology

PTSD symptomatology was assessed using the PCL-5. Scores obtained from the 159 respondents indicated that a significant majority (77.99%) were experiencing clinically significant PTSD symptomatology at the time of participation (total score ≥ 31 ; see Table 6).

Table 6*PCL-5 Scores for Female Survivors of Male IPV (N = 159)*

	<i>n</i>	%
PCL-5 Criteria B		
Meets Cut-off	146	91.82
Does not meet cut-off	13	8.18
PCL-5 Criteria C		
Meets Cut-off	137	86.16
Does not meet cut-off	22	13.84
PCL-5 Criteria D		
Meets Cut-off	135	84.91
Does not meet cut-off	24	15.09
PCL-5 Criteria E		
Meets Cut-off	133	83.65
Does not meet cut-off	26	16.35
PCL-5 Total Score		
Meets Cut-off	124	77.99
Does not meet cut-off	35	22.01

Note: *n* = Sample size; % = percentage of total sample

Intrusion symptoms (Criteria B) were reported to be the leading cause of distress (91.82%), followed by avoidance symptoms (Criterion C; 86.16%), negative alterations to mood and cognitive processes (Criterion D; 84.91%), and alterations in arousal and reactivity (Criterion E; 83.65%).

Cognitions

A significant difference was observed between scores obtained for participants who met criteria consistent with clinically significant symptoms for PTSD (PCL-5 total score \geq 31) and those who did not meet PTSD diagnostic criteria (PCL-5 total score $<$ 31) on total scores obtained on the assessed cognitions of shame, guilt, and posttrauma negative cognitions (see Table 7).

Table 7

Correlations for the Cognitions of the TRSI, TRGI, PTCI, & CERQ (N = 159)

	Correlation		Criteria met		Criteria not met			ANOVA	
	<i>r</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>F</i>	
TRSI – In. Condem	.58***	159	8.92	5.62	124	2.83	3.68	35	36.65***
TRSI – Ex. Condem.	.53***	158	6.86	5.40	123	2.66	3.66	35	18.70***
TRGI – Cognitions	.20**	151	1.61	0.68	118	1.30	0.67	33	5.33*
TRGI – Hindsight	.27***	157	1.67	0.71	123	1.24	0.66	34	9.90*
TRGI - Wrongdoing	.21***	157	1.72	0.99	122	1.34	0.81	35	4.27*
PTCI – Neg. Self	.67***	159	3.89	1.28	124	2.38	0.73	35	44.77***
PTCI – Neg. World	.60***	159	5.05	1.26	124	3.72	1.38	35	28.96***
PTCI - Self Blame	.62***	159	3.98	1.30	124	2.46	1.01	35	40.72***
CERQ – Rumination	.19**	158	7.65	2.06	123	6.69	2.34	35	5.64*
CERQ - Other Blame	.62***	159	6.04	2.41	124	3.63	1.57	35	31.12***

Note: *n* = Sample size; *M* = Mean score; *SD* = Standard deviation; *r* = Correlation coefficient;

In = Internal; Ex = External; Condem = Condemnation; * $p < .05$; *** $p < .001$

Shame. There was a statistically significant difference between participants that met cut-off criteria for PTSD symptomatology and those that did not, across the subscales of Internal Condemnation $F(1, 157) = 36.65, p < .000$, and External Condemnation $F(1, 156) = 18.70, p < .001$ on the TRSI (see Table 7).

Guilt. There was a statistically significant difference between participants that met cut-off criteria for PTSD symptomatology and those that did not, across the subscales of Cognitions, $F(1, 149) = 5.331, p = .022$, Hindsight Bias, $F(1, 155) = 9.90, p = .002$, and Wrongdoing, $F(1, 155) = 4.271, p = .040$ on the TRGI (see Table 7). No statistically significant differences were observed for the Lack of Justification subscale ($p = .50$).

Posttrauma Negative Cognitions. There was a statistically significant difference between participants that met cut-off criteria for PTSD symptomatology and those that did not, across the maladaptive cognitive subscales of Rumination, $F(1, 156) = 5.64, p = .019$, and Other Blame, $F(1, 157) = 31.12, p < .001$ on the CERQ (see Table 7). No statistically significant differences were observed for the maladaptive cognitive subscales of Self Blame ($p = .89$) or Catastrophising ($p = .21$) on the CERQ.

There was a statistically significant difference between participants that met cut-off criteria for PTSD symptomatology and those that did not, on the Negative Self subscale, $F(1, 157) = 44.77, p < .001$, the Negative World Subscale, $F(1, 157) = 28.96, p < .000$, and the Self Blame subscale $F(1, 157) = 40.72, p < .001$ on the PTCI (see Table 7). An examination of the correlation coefficients identified the subscales of the PTCI to be highly correlated ($r > .90$; see Table 8). These results indicate that items within the subscales of the PTCI are multicollinear, are potentially repetitive, contain redundant information, and may not be needed in the same analysis (Tabachnick & Fidell, 2013).

Table 8*Correlation Statistics for the Subscales of the PTCI (N = 159)*

	PTCI Negative Self	PTCI Negative World	PTCI Self Blame
PTCI – Negative Self	-		
PTCI – Negative World	.79***	-	
PTCI – Self Blame	.91***	.71***	-

*Note: *** $p < .01$*

To address the multicollinearity of the PTCI subscales and examine the subscales independent utility in predicting the development of PTSD for this population sample, a regression analysis was conducted. The subscale of Negative Self was the only factor within the PTCI to be identified as a significant independent predictor of PTSD, ($t = 2.91, p = .004$). Negative World ($t = 1.70, p = .091$) and Self Blame ($t = .72, p = .473$) were non-significant independent predictors of PTSD. Due to the high correlations between the three subscales of the PTCI and the non-significant contributions of the Negative World and Self Blame cognitions, the subscales of Negative World and Self Blame were excluded from further regression analyses.

To test the hypothesis that posttrauma cognitions predict PTSD symptom expression following exposure to IPV, a series of multiple regression analyses were conducted utilising the subscales identified to significantly differentiate between individuals with and without clinically significant PTSD symptomatology. In combination, TRSI-EC, TRSI-IC, TRGI-Cog, TRGI-Hin, TRGI-Wro, PTCI-NegSelf, CERQ-Rum, and CERQ-OB, accounted for a statistically significant 57% of the variability in PTSD scores, $R^2 = 0.57, F(8, 141) = 23.40, p < .001$. An inspection of the correlation matrix showed four items (TRGI-Cog, TRGI-Hin,

TRGI-Wro, and CERQ_Rum) with correlations less than .03 (see Table 7; Tabachnick & Fidell, 2013). These items, plus the TRSI-EC subscale were demonstrated to be non-significant independent predictors of PTSD (see Table 9) and were removed from follow-up regression analyses.

Table 9

Regression Coefficients for the Cognitions Predicting PTSD for Female IPV Survivors (N = 159)

	<i>Unstandardised</i>		<i>Standardised Coefficients β</i> (95% CI β)
	<i>Coefficients</i>		
	<i>B</i>	<i>Std. Error</i>	
TRSI – Int. Condemnation	.72*	.34	.23 [.06 – 1.39]
TRSI – Ex. Condemnation	-.04	.34	-.01 [-.71 - .63]
TRGI – Cognitions	-2.85	3.20	-.11 [-9.17 – 3.47]
TRGI – Hindsight	4.16	2.40	.17 [-.57 – 8.90]
TRGI - Wrongdoing	-.88	1.70	-.05 [-4.24 – 2.48]
PTCI - Negative Self	4.31***	1.30	.31 [1.75 – 6.87]
CERQ – Rumination	.83	.48	.10 [-.12 – 1.79]
CERQ - Other Blame	2.42***	.51	.31 [1.42 – 3.43]

Note: * = $p < .05$, *** = $p < .001$

Following the removal of poorly correlated and non-significant cognitions, a follow-up regression analysis was completed. In combination, Negative Self (PTCI-NS), Shame (TRSI-IC), and Blame (CERQ-OB), accounted for a statistically significant 55.40% of the variability in PTSD scores (PCL-5), $R^2 = 0.55$, adjusted $R^2 = .55$, $F(3, 155) = 64.13$, $p < .001$.

Using Cohen's (1988) conventions, the effect size can be considered large ($f^2 = 1.24$).

Unstandardised (B) and standardised (β) regression coefficients for each predictor in the regression model are reported in table ten.

Table 10

Coefficients and Squared Semi-Partial Correlations for Negative Self, Blame, and Shame Predicting PTSD for IPV Survivors (N = 159).

	B (95% CI)	β	sr^2
Negative Self	4.62 [2.25-7.00]***	.34	.04
Blame	2.40 [1.49-3.31]*	.33	.08
Shame	.645[.14-1.15]***	.21	.02

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

Discussion

This study aimed to examine the relationship between cognitions upon the expression of PTSD symptomatology following the experience of IPV. There is extensive evidence demonstrating that posttrauma cognitions play an important role in the development and maintenance of PTSD, with theoretical development and clinical interventions centred upon the identification and modification of posttrauma cognitive processes (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa et al., 1992; Foa & McLean, 2016; Held et al., 2019; Janoff-Bulman, 1992; Kubany et al., 1996; Kubany & Watson, 2002); however, there is no current consensus identifying the specific posttrauma cognitions that contribute to the expression of PTSD symptomatology following exposure to IPV. This study sought to extend upon the current literature by examining the relationship between specific posttrauma cognitions and PTSD symptom expression for female survivors IPV.

An examination of the descriptive data identified a significant proportion of female participants (78%) to be currently experiencing clinically significant PTSD symptomatology following the experience of IPV within a previous heterosexual relationship. Symptom expression across the criterion domains outlined in the DSM-5 (APA, 2013) was reported to be high for participants within this sample; with 83.6 percent to 91.8 percent of participants meeting cut-off requirements for the individual criterion symptoms. Intrusion symptoms were reported to be the leading cause of distress, followed by avoidance symptoms, negative alterations to mood and cognitive processes, and alterations in arousal and reactivity. The assessed prevalence of PTSD within this population sample is consistent with the literature and previous studies that have examined PTSD within populations of female IPV survivors and have reported rates of PTSD between 31 to 84.4 percent (Black et al., 2011; Goulding, 1999; Iverson et al., 2011; Jones et al., 2001; Koenen et al., 2017; Rees et al., 2011; WHO, 2013a).

Participants' current engagement in a non-IPV relationship was not identified to mitigate the psychological impact of previous IPV for these women. The age at which women experienced their first IPV relationship was not identified to contribute to differences in PTSD symptom expression; however, the recency of IPV relationship termination and the experience of multiple IPV relationships were identified to contribute to observed differences in PTSD symptom experience. The recency of IPV relationship termination and PTSD symptom expression was identified to be significantly positively related; with greater PTSD symptoms reported for women who had more recently disengaged from the relationship. It has been proposed that the actual threat of violence continuation is typically pervasive following IPV relationship termination, due to the relational context of the abuse and other interpersonal factors that result in ongoing contact with the perpetrator of IPV (i.e., legal processes, shared parenting; Dutton, 1992; Kubany et al., 2004). As such, avoidance of direct

and environmental triggers for previously experienced trauma is not always possible, and ongoing contact with the perpetrator is likely to result in repeated and ongoing trauma exposure and an exacerbation of PTSD symptomatology (Dutton, 2012). Therefore, it is proposed that a mitigation of PTSD symptom expression is thus difficult to achieve until a resolution of relational and legal processes are obtained, and the survivor can effectively engage adaptive coping strategies and supports to assist with recovery.

Consistent with previous research, women who reported the experience of more than one IPV relationship also reported greater PTSD symptomatology than women reporting IPV within one previous relationship (Anderson, 2002; Black et al., 2011; Coker et al., 2002; Coker et al., 2006; Golding, 1999; Jones et al., 2001; Woods et al., 2008). The frequency and severity of experienced physical and emotional violence were also identified to discriminate between individuals experiencing clinically significant PTSD symptomatology and those who were not, with higher incidences and more severe (i.e., life-threatening) occasions of violence related to an increased likelihood of experiencing clinically significant PTSD symptomatology. These relationships are consistent with the literature, in that higher prevalence rates of PTSD symptom expression and diagnosis have been identified for individuals exposed to multiple incidences of victimisation and a greater severity of experienced abuse (Dutton, 1992; Houskamp & Foy, 1991; Jones et al., 2001).

The experience of sexual violence was not identified to discriminate between participants, with no significant differences observed for individuals who reported the experience of single incident sexual violence and those who reported frequent and/or repetitive experiences of sexual violence, upon the experience of clinically significant PTSD symptomatology. These findings are consistent with prior research that has identified sexual assault to carry the highest conditional risk for PTSD development compared to other forms of IPV and be an independent predictor of PTSD symptom expression (Liu et al., 2017).

Intimate partner sexual violence has also been identified to be a stronger predictor of PTSD symptom expression when compared to sexual assault enacted by a non-intimate partner (Temple et al., 2007). The relational nature of IPV, the associated boundary violations experienced, and the enactment of violence within the context of a once perceived safe and trusting relationship have also been identified as factors likely contributing to this outcome (Dutton, 1992; Held et al., 2019; Jordan et al., 2017).

Consistent with theory and previous research (Brewin & Holmes, 2003; Drescher & Foy, 2012; Ehlers & Clark, 2000; Foa et al., 1992; Foa & McLean, 2016; Freyd et al., 2001; Held et al., 2019; Janoff-Bulman, 1992; Kubany et al., 1996; Kubany & Watson, 2002; Litz et al., 2009), a significant positive relationship between the assessed posttrauma cognitions and PTSD was observed across all measures (TRSI, TRGI, PTCI, & CERQ), providing support for hypothesis one. The posttrauma cognitions of guilt, shame, self-blame, other-blame, and negative perceptions of self, others, and the world, were identified to have a significant positive relationship to PTSD symptom expression following exposure to IPV. The obtained results also support hypothesis two, with a significant difference between scores on the assessed posttrauma cognitions (TRSI, TRGI, PTCI, & CERQ) obtained for participants who met and did not meet criteria consistent with clinically significant PTSD symptomatology. Participants presenting with clinically significant PTSD symptomatology were more likely to experience higher rates of negative posttrauma cognitions (i.e., guilt, shame, self-blame, other-blame, and negative perceptions of self, others, and the world) than those with sub-clinical PTSD symptom expression; indicating a capacity for these posttrauma cognitions to differentiate between individuals with and without clinically significant PTSD symptoms.

Hypothesis three proposed that the assessed posttrauma cognitions would account for a significant proportion of the variability in experienced PTSD symptomatology. The results of this study support this hypothesis and demonstrate the significant predictive ability of three

specific posttrauma cognitions upon PTSD symptom expression for female survivors of IPV. These include a negative perception of oneself (Negative Self), internal shame (Shame), and other blame (Blame). Together the posttrauma cognitions of Shame, Blame, and Negative Self accounted for a significant proportion of the variability in PTSD symptom expression for female survivors of male enacted IPV, with a large effect size demonstrated. These results indicate that the pervasive expression of the Shame, Blame, and Negative Self posttrauma cognitions contributes significantly to the maintenance of PTSD for female survivors of male enacted IPV.

Negative Self cognitions are posited to be experienced as pervasive perceptions of self-mistrust, inadequacy, inferiority, and powerlessness (Ehlers & Clark, 2000; Foa et al., 1999). The negative interpretation of self is theorised to result from a perceived negative change in self-identity following trauma exposure, accompanied by feelings of alienation, hopelessness, self-mistrust, and negative symptom interpretation (Foa et al., 1999). Alterations to cognitions of the self following exposure to IPV are consistent with the Cognitive Model of PTSD (Brewin & Holmes, 2003; Ehlers & Clark, 2000) and the Moral Injury Theory (Drescher & Foy, 2012; Litz et al., 2009). These models identified negative alterations to cognitive appraisals of the self following the experience of interpersonal trauma and documented their expression across areas of self-condemnation, hopelessness, and helplessness.

Internal shame has been theorised to occur when an individual personalises the trauma experience and views their experience of trauma as confirmatory evidence of personal failure and/or flaws (Gilbert, 1997; Glibert & Andrews, 1998). Internal shame is proposed to be experienced as a condemnation of the self, involving a critical, judgemental stance towards oneself, within the context of the trauma experience and ongoing management of trauma-related symptomatology (Gilbert & Miles, 2003; Neff, 2003). These findings are consistent

with the literature and recent models of PTSD and highlight the impact of posttrauma cognitions upon PTSD symptom expression (Bolton & Hill, 1996; Brewin & Holmes, 2003; Drescher & Foy, 2012; Dutton, 1992; Ehlers & Clark, 2000; Fugate et al., 2005; Janoff-Bulman, 1992; Kubany et al., 2004; Litz et al., 2009; Liu et al., 2017).

The identification of other blame as a significant predictor of PTSD symptom expression, however, is a factor that has not previously been identified or examined within the context of trauma and IPV. Other blame refers to cognitive processes that place the blame for an individual's experience of trauma upon others (Tennen & Affleck, 1990). Within the context of IPV, the attribution and externalisation of blame upon others appears appropriate and consistent with the involuntary and non-consensual nature of enacted violence. Despite this, the results obtained in this study indicate that the extent to which an individual attributes blame externally negatively impacts on their level of experienced psychological distress and the severity of PTSD symptoms experienced. Blaming others has been documented within theories of negative emotions across non-trauma populations in relation to the experience and expression of anger (Beck, 1999; Eckhard & Kassino, 1998; Smith & Lazarus, 1993). It is hypothesised that the external attribution of blame results in a ruminative cognitive process that contributes to and maintains a sense of anger. Anger is identified within the DSM-5 criteria as a symptom of hyperarousal following the experience of trauma (APA, 2013), and consistent with the results obtained in this study, there is literary support for a strong positive correlation between the experience of anger and the severity of PTSD symptomatology (Chemtob et al., 1994; Feeny et al., 2000; Orth & Wieland, 2006; Riggs et al., 1992). Researchers have proposed that anger within populations of trauma survivors arises from cognitive appraisals related to the violation of safety and perceived unfairness of the event experienced (Beck, 1999; Berkowitz & Harmon-Jones, 2004; Ehlers & Clark, 2000). These findings are consistent with the framework provided by Dutton (1992) and highlights the

importance of the relational and boundary violations enacted within IPV relationships upon the development and maintenance of PTSD symptomatology. Further research examining external blame within the context of interpersonal violence and trauma is needed to understand the hypothesised relationship between blame, its impact on emotional and cognitive processes, and the expression of PTSD symptomatology.

Limitations and Implications for Future Research

The current study extends the literature by examining the relationship between posttrauma cognitions upon PTSD symptom expression; however, there are several limitations of note. Due to the homogenous nature of the sample examined, female survivors of male enacted violence within heterosexual relationships residing predominately within westernised countries, the generalisability of these results are limited. Violence within non-heterosexual relationships has been largely unacknowledged within policy, service access, treatment provision, and research studies (Ball & Hayes, 2009; Calton et al., 2016). There is no currently accepted understanding or theory of IPV within lesbian, gay, bisexual, transgender, intersex, and queer (LGBTIQ) relationships. Consistent with our understanding of heterosexual relationships, identified concepts including, coercive control, dominance, and oppression, have also been hypothesised to exist and to contribute to the experience of IPV within LGBTIQ relationships (Calton et al., 2016; Stark, 2007). A national demographic and wellbeing study for LGBTIQ people ($N = 5,476$) conducted by the Australian Research Centre for Health and Sexuality (Pitts et al., 2006) identified 28 percent of male-identifying participants and 41 percent of female-identifying participants to have experienced IPV. In addition to international data, this local research indicates that IPV is experienced by LGBTIQ populations at comparable rates to the heterosexual population (Donovan et al., 2006; Edwards et al., 2015; Lorenzetti et al., 2015). The lack of diversity data collected within this study indicates a significant gap within our understanding of IPV and its psychological

sequelae. An expansion of the sampled population to include all genders, sexualities, and types of intimate relationships, may provide an enhanced understanding of the relationship between the identified cognitions upon PTSD symptom expression for all survivors of IPV. Further examination of other forms of interpersonal and non-personal forms of trauma may provide additional insights into the generalisability of these results and the role of these identified cognitions in PTSD symptom expression across a diverse range of trauma typologies. Clinically, advancements in our understanding of PTSD and the role of posttrauma cognitions in the development and maintenance of PTSD symptomatology for a diverse survivorship population would assist in the adaptation of currently utilised trauma-informed interventions for the mitigation of maladaptive psychological symptomatology and the attainment of recovery.

The utilisation of an online sampling method has also been identified to contribute to study limitations. Participants were sought from convenience sampling and IPV specific social media support groups. As such, there is a potential for an underrepresentation of participants with significant PTSD symptomatology within this population sample as many of these participants have identified a need and were actively seeking support through engagement in the online groups. Despite the potential impacts upon symptom expression, the prevalence of PTSD within this population was consistent with previous research (Black et al., 2011, Goulding, 1999; Iverson et al., 2011; Jones et al., 2001; Koenen et al., 2017; Rees et al., 2011; WHO, 2013a).

Due to the absence of face-to-face contact and the anonymity of participation, there was no way to assess the validity of participant responses on the provided standardised measurement tools. Online data collection methodology relies on participant self-identification as a survivor of IPV, the identification and quantification of psychosocial symptomatology, and the accurate understanding and interpretation of questionnaire items.

These factors, inherent in self-report online data collection, may potentially result in the provision of biased responses, participant error, or over/underreporting of symptomatology. Despite these limitations, online survey methods have been identified to be a cost-effective, time-limited means of data collection, with the capacity to reach a wide range of participants from samples across geographical locations and to minimise participant desirability bias when compared to other means of data collection (i.e., paper-based or clinician-administered; Evans & Mathur, 2005; Fricker & Schonlau, 2002; Nayak & Narayan, 2019).

The questionnaire itself comprised standardised measurement tools that contained items with the potential to elicit participant distress. Items assessing previously experienced traumatic events were placed at the commencement of the questionnaire, which may have contributed to the early participant discontinuation identified within this study. The Composite Abuse Scale (Hegarty, 2007) presented graphic and potentially distressing items (i.e., *“raped me,” “kicked me, bit me, or hit me with a fist,” “told me I wasn’t good enough”*) that may have contributed to participant disengagement from the online survey and the loss of data. As the research aim was to examine trauma responses following the experience of IPV, it was important that participants were able to identify and quantify their experiences of traumatic events and psychological sequelae. However, due to the nature of the participant population being examined (i.e., trauma survivors’) it was equally, if not more important, to minimise the potential for harm and/or distress and to empower respondents to experience autonomy and choice with an option to withdraw from participation at any time.

Previous research examining participant burden within populations of trauma survivors has identified that whilst a subset of participant samples typically reports unanticipated distress or strong negative emotions, the majority of respondents do not negatively evaluate their experience or regret research participation (Newman & Kaloupek, 2004). The ongoing participation and completion of the full online questionnaire by a

significant majority (75.5%) of individuals who accessed the questionnaire are largely consistent with these research outcomes. It was not deemed appropriate to alter the order of item presentation as a means of minimising participant attrition, nor was it likely to enhance questionnaire completion. Participants engaged in this study were directed to publicly accessible support groups and provided contact information to help/support lines should distress be elicited by their participation in this study. Access to direct follow up and the provision of support by researchers, and the collection of data related to the factors contributing to the experience of distress and/or drop out (i.e., specific items), would likely provide enhanced insight into the factors that contribute to participant attrition and research burden, whilst also supporting the needs and wellbeing of participants.

Conclusion

There is extensive theoretical and clinical evidence demonstrating the role of posttrauma cognitions in the development and maintenance of PTSD, with theoretical development and clinical interventions centred upon the identification and modification of trauma-related cognitive processes (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa et al., 1992; Foa & McLean, 2016; Held et al., 2019; Janoff-Bulman, 1992; Kubany et al., 1996; Kubany & Watson, 2002). Whilst the role of posttrauma cognitions including, shame, guilt, and negative cognitions about the self, others, and the world, have previously been identified as unique contributors to the experience of PTSD, no consensus has been achieved regarding the relationship between these factors and PTSD symptom expression for survivors of IPV. The results of this study demonstrated the significant predictive ability of the Shame, Blame, and Negative Self posttrauma cognitions upon PTSD symptom expression for female survivors of male perpetrated IPV. These cognitions were identified to independently predict the experience of clinically significant PTSD symptomatology following exposure to IPV. Further research examining the role of these posttrauma cognitions for a more heterogeneous

population sample will be conducted in within later stages of this program of research to enhance the utility and generalisability of the outcomes obtained within this study.

Clinically, the identification of Shame, Blame, and Negative Self posttrauma cognitions as predictive factors in the maintenance of PTSD following exposure to IPV provides a foundation from which treatment can be facilitated. The empirical evidence obtained in this study indicate that incorporating an identification and modification of the Shame, Blame, and Negative Self cognitions into trauma-focused models of psychological treatment would likely contribute to a significant reduction in experienced PTSD symptomatology and assist in the attainment of recovery. Further research examining the clinical outcomes for directly identifying and targeting these posttrauma cognitions within evidence-based treatment approaches would provide an enhanced understanding and further empirical support for the role of the Shame, Blame, and Negative Self posttrauma cognitions in the mitigation of PTSD symptomatology and the facilitation of Trauma Recovery.

Chapter Four

Development and Path Examination of the Trauma Cognition Model of PTSD for Survivors of Interpersonal Trauma

Chapter Overview

The results from the empirical study presented in chapter three identified the posttrauma cognitions of Shame, Blame, and Negative Self as unique cognitive contributors to PTSD symptom expression following the experience of IPV. The posttrauma cognitions of Shame, Blame, and Negative Self were identified to account for a significant proportion of the variability in PTSD symptom expression for female survivors of male perpetrated IPV. These findings informed the development and path analytic examination of the Trauma Cognition Model of PTSD for a heterogeneous population of interpersonal trauma survivors. A review of the literature is provided to define and describe the three posttrauma cognitions and their theorised relationship to the experience of PTSD following exposure to interpersonal trauma. The methodology and results of the path analysis are then presented and the outcomes of this study and implications for clinical practice are then discussed.

Introduction

As detailed in chapter three, there is extensive empirical and clinical evidence demonstrating the role of cognitions in the development and maintenance of PTSD (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa et al., 1992; Foa & McLean, 2016; Held et al., 2019; Janoff-Bulman, 1986; Kubany et al., 1996; Kubany & Watson, 2002). Cognitive models of PTSD have proposed that it is an individuals' interpretation of the traumatic event, and not the event itself, that causes psychological disruption, distress, and dysfunction (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa & Rothbaum, 1998; Jones & Barlow, 1990). It is theorised that when negative interpretations of the trauma and its sequelae become fixed and distorted, that the individual develops a sense of ongoing threat that maintains fear,

reinforcing these negative appraisals and contributing to a persistence of PTSD symptomatology (Bryant, 2003; Dunmore et al., 2001; Ehlers & Clark, 2000; McNally, 2003). An individuals' thoughts about their own incompetence or perceived weaknesses at the time or directly following trauma exposure have also been theorised to contribute to the development of PTSD (Ehlers & Clark, 2000; Foa & Riggs, 1993; Foa & Rothbaum, 1998; McCann & Pearlman, 1990; Resick & Schnicke, 1993).

Exposure to interpersonal violence and the resulting trauma sequelae experienced by survivors of interpersonal trauma have been identified as a global epidemic with both women and men reporting the experience of at least one form of interpersonal violence across their lifetime (Kessler et al., 1995; Rees et al., 2011; Resnick et al., 1993; Turell, 2000). The prevalence of exposure to varying interpersonal trauma typologies (i.e., sexual abuse, IPV, physical assault) has been identified to differ across the genders, with females more likely to report the experience of sexual assault, IPV, and unwanted sexual experiences and male participants more likely to report the experience of physical assault (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000; Widom et al., 2008). Despite the reported differences in trauma exposure, gender has been not identified to significantly differentiate between the experience of PTSD following interpersonal trauma exposure (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000).

Whilst the prevailing research examining the relationships between posttrauma cognitions and PTSD has focused upon female survivors of IPV, a meta-analysis conducted by Tolin and Foa (2006) examined the gender-specific risk of traumatic events and the development of PTSD following interpersonal trauma exposure. The results of this investigation indicated that, in contrast to non-personal forms of trauma exposure, the experience of interpersonal trauma exposure (i.e., childhood maltreatment, sexual assault) is equally likely to contribute to the development of PTSD, with no significant differences

observed between the genders (Tolin & Foa, 2006). These outcomes provide support for cognitive models of PTSD that propose posttrauma cognitions to be the most significant predictor of PTSD symptom expression following interpersonal trauma exposure.

Cognitions and Interpersonal Violence

Traumatic events and their impact upon a survivors' mental health have been purported to differ greatly depending on whether the event is perceived by the survivor to have been caused by an uncontrolled, natural event or accident, or whether they are experienced as intentional acts of other humans involving a violation of physical, sexual, or mental integrity (Janoff-Bulman, 1992; Van der Kolk, 2000). Early childhood trauma enacted by a trusted person has been identified to cause more severe and chronic mental health outcomes than trauma experienced in adulthood (Bacchus et al., 2018; Robinaugh & McNally, 2011). Similarly, acts of interpersonal trauma, including, sexual and physical violence, have been identified to contribute to greater risks for the development of mental health sequelae following exposure (Bacchus et al., 2018; Janoff-Bulman, 1992; Sezgin & Punamaki, 2019; Van der Kolk, 2000). An epidemiological study conducted on a nationally representative sample in the United States of America identified women exposed to interpersonal violence (i.e., physical assault, sexual assault, threats with a weapon) and childhood maltreatment (i.e., physical, sexual, emotional abuse) experienced significantly higher PTSD symptomatology than women exposed to war-related trauma and non-personal forms of trauma exposure (McMillan & Asmundson, 2016). Studies conducted within community settings have also demonstrated traumatic event exposure involving IPV to pose a greater risk for the development of mental health sequelae, including, PTSD than exposure to accidental death or other non-personal forms of trauma exposure (Frazier et al., 2017; Martin et al., 2013; Sezgin & Punamaki, 2019).

Interpersonal trauma has been identified to exert unique impacts upon an

individuals' cognitive processes and the experience of PTSD. The updates to the provided criterion for PTSD within the DSM-5 highlight the common experience of negative alterations to cognitions associated with exposure to traumatic events and the experience of PTSD (APA, 2013). Consistent with the results obtained in the previous study, these cognitive changes have been identified to occur across several domains including, negative beliefs or expectations about the self, distorted cognitions about the cause and consequences of the traumatic event (i.e., blame), and alterations to cognitive processes resulting in the experience of fear, anger, guilt, and or shame (APA, 2013).

Negative Self Cognitions

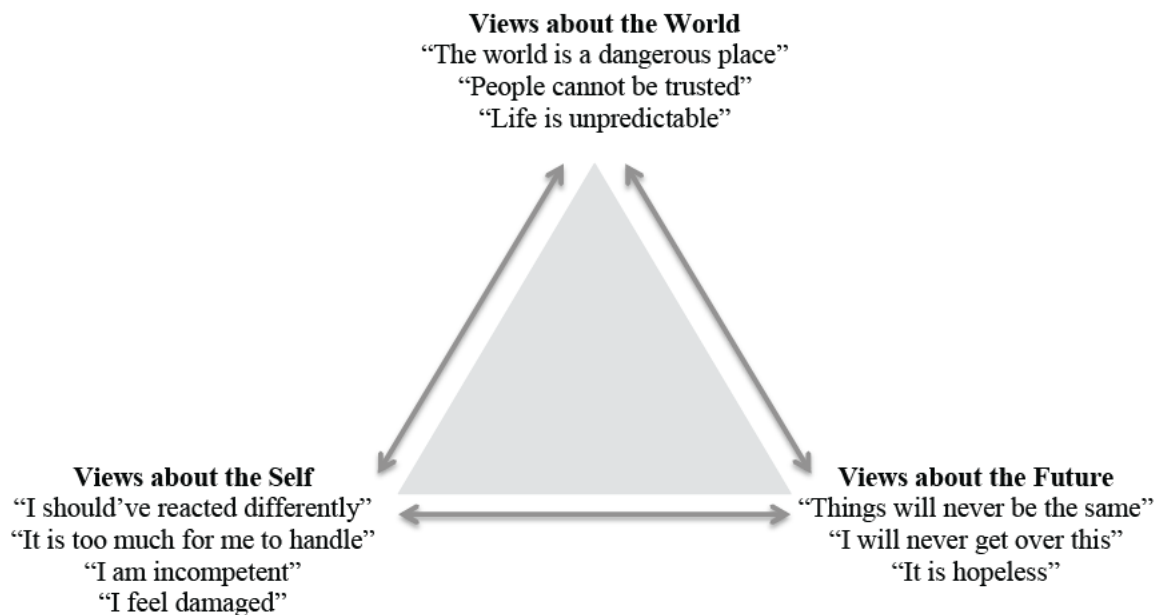
The Cognitive Triad Model (Beck, 1979) was proposed to define and describe cognitive changes experienced for individuals with depression however, its applicability to trauma exposure and the successive cognitive changes experienced for individuals with PTSD has also been proposed (Beck et al., 2004; Beck et al., 2013; SAMHSA, 2014). The Cognitive Triad Model when applied to trauma exposure, proposes that change is enacted across three areas, thoughts about the self, thoughts about the world, and thoughts about the future (Beck, 1979). When these negative cognitive processes are enacted following trauma exposure, an individual is likely to view themselves as damaged or incompetent, to see the world and others as unpredictable and unsafe, and feel hopeless about the future, believing that negative outcomes will be pervasive and personal suffering will continue (Beck et al., 2004; Beck et al., 2013; SAMHSA, 2014). A bidirectional relationship is proposed to exist between these cognitive processes and the development and maintenance of PTSD and psychological distress (Beck et al., 2004; Beck et al., 2013; SAMHSA, 2014; see Figure 7).

The results obtained in the previous study and described in chapter three identify the significant role of Negative Self cognitions upon the expression of PTSD symptomatology following exposure to IPV. Negative Self cognitions are theorised to result from maladaptive

changes to an individuals' sense of self following the experience of interpersonal trauma. The violation of perceived safety and security within the interpersonal relationship is theorised to challenge an individuals' pre-trauma beliefs and self-perception and contribute to a heightened sense of internal threat (Ehlers & Clark, 2000). These interpretations are based upon perceptions of self-mistrust, inactivity during or in response to the traumatic event, the ongoing experience of fear or heightened reactivity, a loss of control, and feelings of uncertainty (Ehlers & Clark, 2000). Negative Self cognitions foster feelings of inadequacy, inferiority, and powerless, and maintain a pervasive sense of internal danger that is frequently reported by survivors of interpersonal trauma (Ehlers & Clark, 2000; Foa et al., 1999).

Figure 7

Cognitive Triad of Traumatic Stress (SAMHSA, 2014)



Note: Published by Substance Abuse and Mental Health Services Administration

(<https://www.samhsa.gov/>)

The fracturing of self-identity and a pervasive experience of self-loathing and judgement are commonly experienced by survivors of interpersonal trauma, irrespective of the pre-trauma presence of a generally stable and secure sense of self (Ehlers & Clark, 2000; Foa et al., 1999). Ehlers and Clark's (1999) concept of 'mental defeat' describes an individuals' perceived inability to influence their fate within the context of trauma exposure and is proposed to play a significant role for survivors of IPV and other forms of repeated interpersonal violence exposure. Prior or repeated experiences of trauma, helplessness, and weakness have been identified to contribute to the experience of this negative self-appraisal, the perception of the self as vulnerable and a target for others hostility and aggression, and the development of PTSD (Brewin & Holmes, 2003; Ehlers & Clark, 2000). This process has been identified to contribute to the development of Negative Self cognitions centred upon a perception of being ineffective, weak, damaged, and unable to protect the self (Ehlers & Clark, 2000).

Negative Self cognitions and their role in the development and maintenance of PTSD have been identified in studies examining the mental health sequelae for survivors of interpersonal violence and other forms of non-personal trauma (Beck et al., 2004; Beck et al., 2013; Beck et al. 2011; Ehlers & Clark, 2006; Ehring et al., 2008; Hebenstreit et al., 2015; Kubany et al., 2004; Lee et al. 2001; Rose et al., 2010; Tran et al., 2019). In contrast to the experience of non-personal forms of trauma exposure, Negative Self cognitions have been identified as a significant predictor for PTSD symptom expression for survivors of interpersonal violence (Beck et al., 2004; Beck et al., 2013; Hebenstreit et al., 2015). Negative Self cognitions have been identified in the immediacy of trauma exposure and have been demonstrated to correlate significantly with PTSD severity when assessed six to 12 months following trauma cessation (Dunmore et al., 2001; Ehlers & Clark, 2006). These studies have demonstrated Negative Self cognitions to be significant contributors to the maintenance of

PTSD and their influence excerpted independently of other risk factors (Dunmore et al., 2001; Ehlers & Clark, 2006). It has been proposed that Negative Self cognitions commonly co-occur and are highly related to Shame-based cognitions following the experience of traumatic events (Beck et al., 2015; Lewis, 2008), with significant correlations identified between Negative Self cognitions and Shame cognitions in a population of female IPV survivors (Beck et al., 2015).

Shame Cognitions

Recent theoretical and clinical contributions to the traumatology literature have identified the role of shame in maintaining the symptoms of PTSD following trauma exposure (APA, 2013; Beck et al. 2011; Ehlers & Clark 2000; Harman & Lee 2010; Oltedalen et al., 2014; Resick et al.2008). Shame has been defined as the experience of negative cognitive evaluations of the whole self, involving a critical, judgmental stance towards oneself within the context of the trauma experience and ongoing management of trauma-related symptomatology (Gilbert & Miles, 2003; Kubany & Watson 2003; Neff, 2003). It has been proposed that the experience of shame extends to negative cognitive biases when interpreting others' evaluation of the self, contributing to a need or desire to conceal one's own perceived deficits or flaws from external evaluation (Greenberg & Paivio 1997; Kubany & Watson 2003; Lewis 1995; Lindsay-Hartz 1984; Nathanson 1987; Oltedalen et al., 2014; Stone 1992; Tangney 1991; Tomkins 1987; Wicker et al.1983). These cognitive processes are accompanied by feelings of worthlessness and powerlessness and contribute to the engagement of maladaptive behaviours involving hiding from others, withdrawing, or disappearing, for fear of external condemnation and rejection (Ehlers & Clark, 2000; Greenberg & Paivio 1997; Kubany & Watson 2003; Lewis 1995; Lindsay-Hartz 1984; Nathanson 1987; Oltedalen et al., 2014; Stone, 1992; Tangney 1991; Tomkins 1987). Posttraumatic shame is proposed to exist within the two domains of internal and external

cognitive processes that result in maladaptive emotional and behavioural outcomes (Gilbert, 1997; Gilbert, 1998; Oltedalen et al., 2014).

External shame is proposed to exist in relation to an individuals' social presentation with concerns related to how other individuals will appraise or evaluate them and their trauma experience (Oltedalen et al., 2014). Within the context of interpersonal trauma this may include fear of being devalued, ridiculed, or rejected and denied access to services (Oltedalen et al., 2014). In contrast, internal shame is identified to relate to the survivors' preoccupation with self-condemnation and devaluation, from which the survivor perceives themselves as weak, flawed, or inherently disgusting following and as a result of their trauma experience (Oltedalen et al., 2014). Internal and external shame have been identified to exist across separate domains and do not necessarily co-occur (Lee & Turner, 2001). It is proposed that an individual has the capacity to identify personal traits or experiences that may be associated with stigma or devaluation from others (i.e., sexual preferences, specific beliefs/morals) however, the individual does not necessarily experience personal shame in relation to these traits or experiences (Crocker & Major, 1989; Lee & Turner, 2001). The results obtained in the previous study and outlined in chapter three, identified posttraumatic Shame cognitions to be a significant predictive factor for the expression of PTSD symptomatology following interpersonal trauma exposure. As such, the following definition and description of posttrauma Shame cognitions will be provided within the context of internal shame only.

The occurrence of Shame cognitions following the experience of interpersonal trauma is proposed to result from a personalisation of the trauma experience, leading to a negative evaluation of the self that reflects an internal state of inadequacy, dishonor, and/or regret (Gilbert, 1997; Glibert & Andrews, 1998). The personalisation of abuse and a perception that the occurrence and/or effects of interpersonal violence are related to the survivor being inferior, inadequate, and unable to affect change upon their environment, often precipitates

shame and has been identified as a critical component in the development and maintenance of PTSD symptomatology (Ehlers & Clark, 2000; Ehrling et al., 2006; Ehrling et al., 2008). The experience of Shame cognitions has been identified to be a significant contributor to the development and maintenance of PTSD following exposure to interpersonal violence. It has been proposed that the experience of powerlessness, loss of control, subordination, and degradation experienced within relational trauma are likely to generate intense feelings of internal shame (Caspi et al., 2015; Dutton, 1992; Herman, 2012; Lee et al., 2001; Wilson et al., 2006). This proposition is consistent with research that has identified shame to be a primary response and dominant factor for survivors of interpersonal trauma experiencing clinically significant PTSD symptomatology (Badour et al., 2017; Hageaars et al., 2011; Paivio & Pascual-Leone, 2010).

A scoping review examining the role of shame in PTSD found substantial support for a significant association between shame and PTSD (Saraiya & Lopez-Castro, 2016). Similarly, peritraumatic shame has been identified to mediate the relationship between PTSD and interpersonal violence (La Bash & Papa, 2014). It has been suggested that the cognitive processes involved in the experience of shame at the time of trauma exposure are as salient, if not more salient, than fear-based cognitive processes in predicting PTSD symptom expression for survivors of interpersonal trauma (La Bash & Papa, 2014). It is therefore proposed that attempts to process the experience of interpersonal trauma elicit a cyclical pattern of Shame cognition activation, the experience of shame-based intrusions, and ongoing emotional distress. Engagement in maladaptive behaviours to avoid reminders or minimise experienced distress serves to reinforce these Shame cognitions and contributes to the development and maintenance of PTSD (Lee & Scragg, 2001).

Blame Cognitions

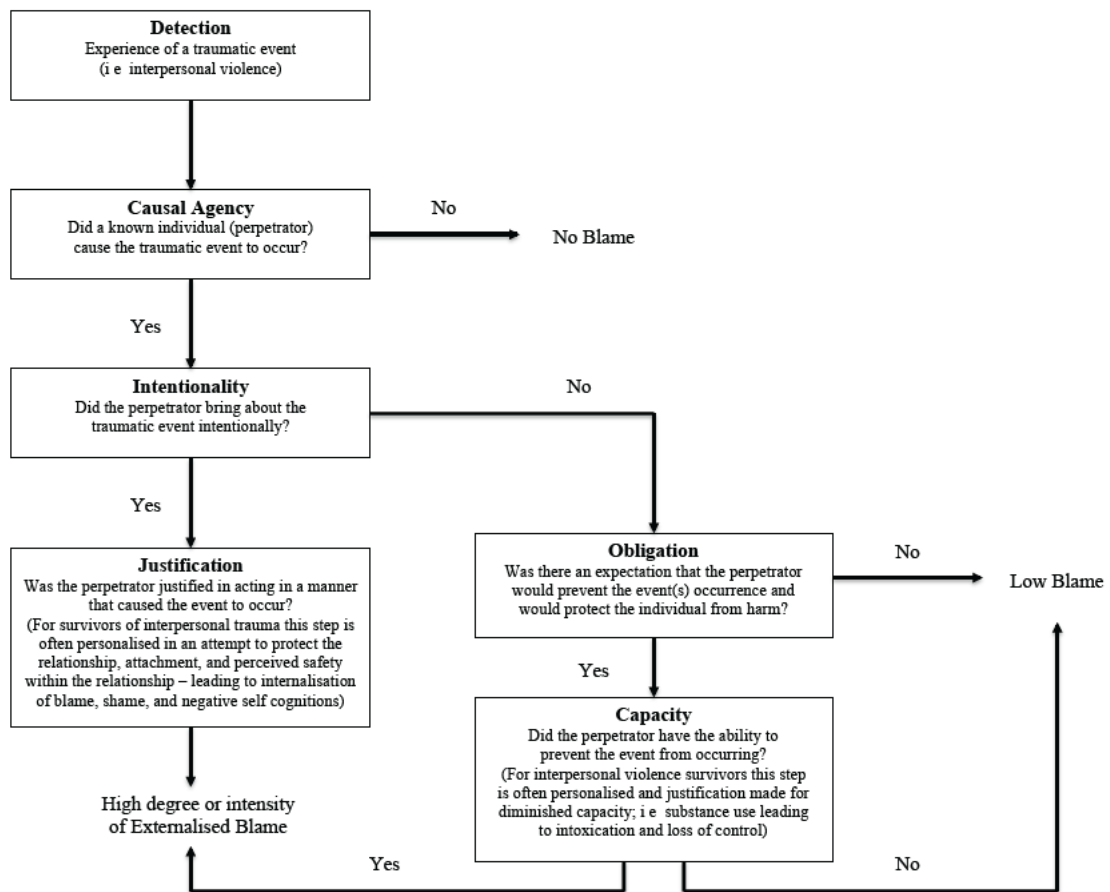
Blame cognitions following the experience of interpersonal trauma are proposed to

result from an individuals' prescription of meaning to the event. Assigning meaning provides a resolution to experienced uncertainty by filling a gap in understanding and creating a sense of coherence, control, and predictability (Forgas et al., 2014; Keinan & Sivan, 2001). As assessed in the previous chapter, other Blame refers to cognitive processes that place the blame for an individuals' experience of trauma upon others (Tennen & Affleck, 1990). Within the context of IPV, the attribution and externalisation of blame upon others appears appropriate and consistent with the involuntary and non-consensual nature of enacted violence. Despite this, the results presented within the previous study and outlined in chapter three, indicate that the extent to which an individual attributes blame externally negatively impacts on their level of experienced psychological distress and the severity of PTSD symptom expression.

Blame can be defined as a moral judgement derived from cognitive processes that utilise social judgements to evaluate and assess an individuals' perceived role in one's experience of trauma. To attribute blame, an individual must have or be able to identify a set of behaviour-guiding social norms, observe or experience an individuals' norm-violating behaviour, and engage cognitive processes to interpret the event within the context of the individuals experience and pre-existing cognitive schemas (Malle et al., 2014; Tennen & Affleck, 1990). The engagement in moral judgements and Blame cognitions is a unique factor applicable to interpersonal trauma. Moral judgement and external blame are not applied to non-personal forms of trauma exposure (i.e., natural disasters), as Blame cognitions must be directed towards another individual or group, who are presumed to be capable of following and subsequently breach, a shared set of social norms (Malle et al., 2014). A model of blame proposed by Malle and colleagues (2014) and adapted for survivors of interpersonal violence proposes that blame emerges following a cognitive, evaluative process involving a series of sequential steps (see Figure 8).

Figure 8

Step Model of Blame for Interpersonal Trauma (Adapted from Guglielmo et al., 2009).



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Firstly, an individual (i.e., the trauma survivor) detects that their experience of a specific event deviated from a given social norm (i.e., safety is expected and respected within intimate relationships, and one individual will not knowingly enact harm upon the other), and then identifies that another individual (i.e., the perpetrator of violence) was involved or caused the event to occur (Malle, et al., 2014). The survivor then decides about the intentionality of the event. If the perpetrator is believed to have acted intentionally, the survivor considers the perpetrators' reasons for action, and blame is then graded and attributed based upon the outcome of this cognitive process, with minimal blame attributed if

the survivor perceives the actions to have been justified, and maximal blame attributed if the survivor perceives the perpetrators' actions to be unjustifiable (Malle, et al., 2014). If the perpetrators' actions are perceived to be unintentional, the survivor considers if the perpetrator had an obligation and/or capacity to prevent the events. Blame is then graded and attributed based upon the survivors' judgements about obligation, knowledge, and ability to prevent the event(s) occurrence (see Figure 8; Malle, et al., 2014).

This process is often complicated by the interpersonal nature of enacted violence and abuse, with survivors often engaging in biased evaluative processes that serve to maintain attachment and connectedness within the relationship. When a perpetrator of interpersonal violence is perceived as integral to an individuals' psychological, physical, or social survival, the maintenance of interpersonal connection and attachment is identified as essential (Freyd, 1996). As a result, survivors of interpersonal violence often personalise their experience of traumatic events, activating Negative Self and Shame cognitions that defer blame away from the perpetrator. The attribution of Blame and the identification of a causal source (i.e., the perpetrator or the self), gives rise to interpretations about the event's controllability, and within the context of interpersonal violence, the likelihood of reoccurrence (Janoff-Bulman, 1979).

Perceptions of control have been identified to be significant in evaluating mental health outcomes following traumatic events, with an individuals' belief in their ability to control current and future events related to improved mental health outcomes (Frazier, 2000). Externalising blame diminishes the survivors' perception of control, and consistent with the literature, results in poorer recovery outcomes and a greater expression of PTSD symptoms (Frazier, 2003; Nickerson et al., 2013; Zinzow et al., 2010). Externalising blame has been proposed to interfere with the trauma recovery by directing attention away from the recovery process and onto an uncontrollable aspect of the traumatic experience (Frazier, 2000). Within

the context of interpersonal trauma and the experience of repeated and cumulative traumatic experiences, Blame cognitions have been identified to contribute to the experience of learned helplessness (Abramson et al., 1978), maladaptive cognitive and behavioural patterns (Brinker & Dozois, 2009; Nolen- Hoeksema, 1991), and the expression of anger towards oneself or others (Quigley & Tedeschi, 1996).

Theorists and clinicians have proposed that anger within populations of trauma survivors arises from cognitive appraisals related to the violation of safety and perceived unfairness of the event (Beck, 1999; Berkowitz & Harmon-Jones, 2004; Ehlers & Clark, 2000). This hypothesis is consistent with survivors' experience of relational violence and the breach of trust, safety, and security that results from the enactment of interpersonal violence. Beck (1999) proposed that aversive events are evaluated through cognitive processing systems, involving environmental observations, cognitive judgements, and a mobilisation of responses. Beck (1999) proposed that these evaluations and resource mobilisation are adaptive and serve to maintain survival. It is proposed that events resulting in feelings of disrespect, degradation, or a disregard or violation of personal rules, values, or morals, leads to the activation of these cognitive processing systems and the engagement of mobilisation responses in the same way one would to ensure personal survival (Beck, 1999). Consistent with the Step Model of Blame (Guglielmo et al., 2009), Beck (1999) proposes that an individuals' interpretation about the intentionality, injustice, and unfairness of the event, accompanied by determinations that someone else was at fault for their experience of a traumatic event, results in an escalation of feeling wronged and the feeling and expression of anger. Researchers have also proposed that external blame and anger results from cognitive processes that convert posttrauma shame cognitions into other-blame cognitions and anger (Gold et al., 2011; Scheff, 2001; Tangney et al., 2001). Gold and colleagues (2011) also identified a process of shame to blame conversion for survivors of interpersonal violence, in

which hostility is directed away from oneself and onto others. The inability or unwillingness to acknowledge and tolerate feelings of shame is proposed to result in an external focus and rumination on blaming others, which serves to reduce the intensity of negative feelings towards the self and allows the survivor to take action to protect the self (Gold et al., 2011; Lewis 1992).

It is therefore proposed that the external attribution of blame results in a ruminative cognitive process that contributes to and maintains a sense of fear, uncontrollability, and anger. Anger is identified within the DSM-5 criteria as a symptom of hyperarousal following the experience of trauma (APA, 2013), and following exposure to interpersonal violence, serves as a means of maintaining hypervigilance in readiness to protect against future harm. Due to the enactment of abuse and violence occurring at the hands of another, without a perceived ability to assert control or prevent harm, an individual exposed to interpersonal violence is proposed to experience an ongoing and prolonged sense of fear and hypervigilance as a means of self-protection and survival. This experience, coupled with a loss of autonomy, and an increase in negative cognitions about the self, contributes to the ongoing experience of anger and blame, and the maintainance of PTSD symptomatology.

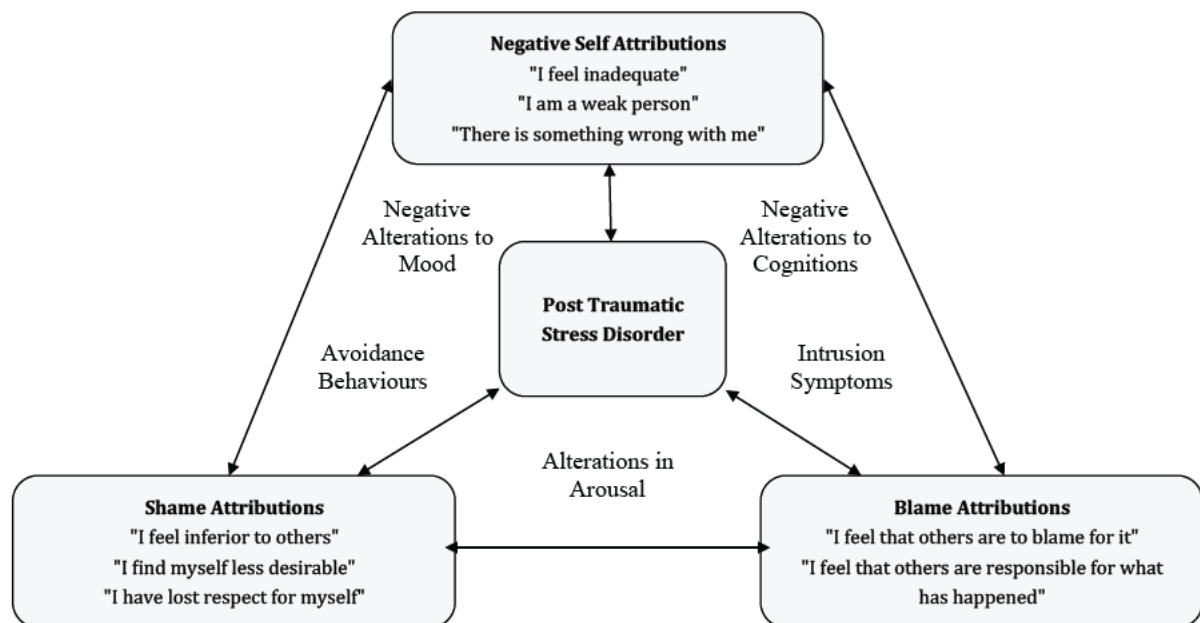
The Trauma Cognition Model of PTSD

The interpersonal nature of relational violence has been proposed to enact unique pressures upon an individuals' previously held beliefs and cognitive processes that are not observed within other forms of non-personal trauma exposure. The violation of an individuals' beliefs, safety, and trust within a once perceived safe and protective relationship, have been identified as the precipitants to negative alterations to cognitive processes about the self, the world, and the future (Dutton, 1992; Foa et al., 1989; Foa et al., 2007; Martin et al., 2013). An individuals' psychological adaptation following the experience of interpersonal trauma is therefore proposed to be influenced by negative alterations to cognitions about

oneself and other factors related to the traumatic experience, including the experience of shame and blame. The degree to which an individual attributes these cognitive changes to their trauma experience is also proposed to contribute to and exacerbate PTSD symptomatology (Dutton, 1992). The results obtained in the previous study demonstrated a significant positive relationship between the posttrauma cognitions of Shame, Blame, and Negative Self upon the experience of PTSD symptomatology and informed the development of the Trauma Cognition Model of PTSD (TCM; see Figure 9). The TCM proposes that the expression and pervasive experience of the Shame, Blame, and Negative Self posttrauma cognitions contributes to the experience of clinically significant PTSD symptom expression for survivors of interpersonal trauma.

Figure 9

Trauma Cognition Model of PTSD



It is proposed that the posttrauma cognitions of Shame, Blame, and Negative Self interact with the maladaptive affective and behavioural symptoms of PTSD (i.e., avoidance,

hyperarousal, negative alterations to mood, intrusion symptoms) in a bidirectional manner to maintain the experience of PTSD symptomatology. Within the context of interpersonal violence, the development of posttrauma cognitions result from the interpersonal nature of the trauma experience, the survivors' interpretation of the event as uncontrollable, an awareness that their trauma experience resulted from the deliberate actions of another, and that enacted violence was made with intent to cause harm (Beck, 1999; Guglielmo et al., 2009; La Bash & Papa, 2014). This leads to internalised cognitions related to the locus of responsibility for the enactment of violent behaviour/s, a loss of control and autonomy, self-condemnation, and feelings of inferiority, inadequacy, and worthlessness (Beck, 1999; Guglielmo et al., 2009; La Bash & Papa, 2014). These cognitions are theorised to maintain PTSD symptomatology by producing a sense of current and ongoing threat, accompanied by intrusion symptoms, increased somatic arousal, and strong negative emotions (Foa et al., 1999). The experience of these symptoms prompts the engagement of dysfunctional cognitive and behavioural responses designed to achieve a short-term reduction in distress (i.e., avoidance) however, engagement of these responses results in long-term negative alterations to cognitive, behavioural, and emotional processes that inhibit cognitive change and maintain PTSD symptom expression (Foa et al., 1999).

Summary and Gaps in Literature

Current knowledge and research within the area of interpersonal violence has been conducted within homogenous population samples, with a focus upon individual typologies of abuse (i.e., rape, physical assault by an intimate partner, child abuse) and population samples with a predominance of female survivors of male perpetrated violence. Few studies have evaluated the prevalence, psychological impact, and recovery outcomes for a more heterogeneous sample across variables including, abuse typology, gender, sexual identity, and relationship status. Whilst there is extensive literature to support the role of Shame and

Negative Self cognitions on the development of PTSD following IPV exposure, the occurrence of these cognitions following the experience of other forms of interpersonal trauma has not been widely examined. Despite the significant relationship identified between Blame and PTSD within the previous study, the role of Blame upon the development and maintenance of PTSD following the experience other typologies of interpersonal trauma has yet to be examined.

Research Aims

The overall aim of this current study was to examine the validity of the TCM for a heterogeneous sample of interpersonal trauma survivors, with an assessment of outcomes across participant demographics including, age, gender, sexual identity, relationship status, nationality, and trauma typology. The TCM proposes that the posttrauma cognitions of Shame, Blame, and Negative Self significantly impact PTSD symptom expression for all interpersonal trauma survivors. This study used a path analytic approach to examine the TCM for a heterogeneous population of interpersonal trauma survivors. To achieve this research aim, several hypotheses were developed:

Hypothesis One. No significant differences between participants of differing genders upon the experience of PTSD symptomatology following interpersonal trauma would be identified.

Hypothesis Two. A significant difference between individuals exposed to interpersonal trauma and other non-personal forms of trauma exposure would be observed on the posttrauma cognitions of Shame, Blame, Negative Self, and PTSD. Individuals exposed to interpersonal trauma were hypothesised to score significantly higher than non-personal trauma-exposed individuals across measures of Shame, Blame, Negative Self, and PTSD.

Hypothesis Three. The TCM will account for a significant proportion of the variance in PTSD symptom expression for survivors of IPV and interpersonal trauma. High scores on

the three posttrauma cognitions of Shame, Blame, and Negative Self will be demonstrated to independently predict the presence of clinically significant PTSD symptomatology for survivors of IPV and interpersonal trauma.

Method

Design

Online survey methods provide an easily accessible means for providing and collecting data from a wide population sample. Participants were recruited through social media using a chain sampling method; a nonprobability sampling method using participants to recruit future participants from among their acquaintances (i.e., sharing the survey link with friends or on social media pages), as well as convenience sampling (i.e., researcher dissemination within personal and professional forums). An information statement was provided to the owner/administrator of social media pages that offer information and support to individuals self-identified to have experienced trauma and, gatekeeper approval sought before disseminating the online questionnaire. Participants were provided with an explanatory statement at the commencement of the study. This document outlined the nature and purpose of the study, inclusion criteria, possible risks and benefits to participation, the intended use and storage of data, the requirement for voluntary participation and option to withdraw, and the provision of support services and crisis contact details. The provided participant information statement outlined inclusion criteria specifying participants sought were adult (over the age of 18 years) trauma survivors however, one participant aged 15 years elected to participate in the research study and completed the full online questionnaire. The National Statement of Ethical Conduct in Human Research (2007) has outlined that mature minors (adolescents who have decision-making capacity) can provide consent without additional parental or guardian consent, when the young person has the capacity to understand what the research entails. Given this individual assessed the online questionnaire of their own accord,

was able to understand the content of the survey, was able to provide valid responses to posed questions and was providing their individual account of trauma exposure, it was deemed appropriate to include their responses in the final data set. Following the statement's provision, participants were asked to acknowledge their understanding of the statement, their knowledge of voluntary participation and freedom to withdraw, and their consent to participate in the study. Access to the online survey portal was provided for a duration of six months.

Participants

Adult respondents with access to a computer, mobile phone, or tablet device were sought for participation in the study. This investigation's focus was upon prior exposure to trauma and participants were asked, through the provision of demographic questions and the inclusion of the Life Events Checklist (LEC; Weathers et al., 2013), to self-report the previous experience of stressful/traumatic events. Participation was obtained from 635 individuals with the self-reported experience of stressful/traumatic life events. A significant proportion of the participant sample (69.13%) reported the experience of clinically significant PTSD symptomatology, obtaining scores on the PCL-5 equal to or greater than the identified criterion cut-off (total scores ≥ 31 ; Weathers et al., 2013). Of the 635 participants who completed the online questionnaire, 581 (91.50%) were female, 49 (7.72%) were male, four (0.63%) identified as non-binary, and one (0.16%) declined to provide a gender. More than half of participants reported themselves to be in a current non-violent relationship (51.34%), with 220 (34.65%) identifying themselves as single, 60 (9.45%) as divorced, 11 (1.73%) as widowed, 18 (2.83%) as separated, and two (0.31%) reporting current engagement in a polygamous relationship (see Table 13).

Materials

Participants were provided with access to an online self-report questionnaire composed of 196 items including, demographic questions and standardised assessment measures. Participants were asked to provide information regarding their age, gender, sexual orientation, nationality, and current relationship status. Additionally, questions were included to elicit information about their experience of IPV, including, the recency of relationship termination (i.e., “*How long ago did this violent relationship end?*”), duration of the IPV relationship, number of previous IPV relationships, and the survivor’s age at the time of the first IPV was experience (i.e., “*How old were you when you FIRST experienced Intimate Partner Violence?*”). To ensure the specified inclusion criteria were met, participants were asked to indicate their prior experience of stressful/traumatic life events using the Life Events Checklist (LEC; Weathers et al., 2013). Measures were selected for use within this study based upon their capacity to effectively measure posttrauma cognitions related to the experience of interpersonal violence (as identified within the previous study) and to provide an assessment of commonly experienced psychological sequelae following the experience of trauma. Measures were required to have good reliability and validity and published efficacy for use within populations of interpersonal trauma survivors. The average completion time for the online questionnaire was 26 minutes.

The Life Events Checklist for DSM-5. The Life Events Checklist for DSM-5 (LEC-5; Weathers et al., 2013) is a 17-item self-report measure designed to screen for potentially traumatic events in an individuals’ lifetime. The LEC-5 was originally developed concurrently with the Clinician-Administered PTSD scale for DSM-IV (CAPS; Weathers et al., 2013) for administration before the CAPS and was demonstrated to have adequate psychometric properties as a stand-alone measure for the assessment of trauma exposure (Weathers et al., 2013). The LEC-5 assesses exposure to 16 events known to potentially result

in PTSD or distress and includes one additional item assessing any other extraordinarily stressful event not captured in the first 16 items. The LEC-5 provides an evaluation of single-incident trauma exposure (e.g., “*natural disaster, fire/explosion, transportation accident, serious accident*”) and varying forms of interpersonal trauma exposure (e.g., “*sexual assault, assault with a weapon, captivity, severe human suffering*”). Event exposure was assessed across multiple levels and participants were asked to indicate their experience of the 16 events as either having the event “*happen to me,*” “*witnessed it,*” “*learned about it,*” “*part of my job,*” “*not sure,*” and “*doesn’t apply.*” Due to the often-cumulative nature of trauma exposure, participants can select multiple exposure levels for each of the identified items. The psychometric properties of the LEC-5 have been examined in community and clinical populations and have been demonstrated to be good (Grey et al., 2004). The LEC-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Grey et al., 2004). For this study, the LEC was used to quantify the experience of interpersonal and other non-personal forms of trauma exposure to assist with categorisation and classification of trauma groups within the participant population. In the current study, a reliability analysis of the scale demonstrated the LEC-5 to have acceptable internal consistency ($\alpha = .78$).

The Posttraumatic Stress Disorder Checklist for DSM-5. The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013) is a 20-item self-report measure for assessing experiences and symptomatology consistent with the diagnostic criteria provided by the DSM-5 (APA, 2013). The PCL-5 asks individuals to indicate the frequency of experiences (e.g., “*repeated, disturbing, and unwanted memories of the stressful experience*”) and symptoms (e.g., “*having difficulty concentrating*”) of posttraumatic stress over the previous one-month period. The PCL-5 has been demonstrated to have moderate diagnostic accuracy and moderate correlations with the Clinician-Administered PTSD Scale (Weathers

et al., 2013), which is considered the gold standard for diagnosing PTSD (Forbes et al., 2001). The PCL-5 is not a diagnostic tool, however, has been validated as a means for screening individuals, contributing to the formulation of provisional PTSD diagnoses, and for monitoring PTSD symptom expression in response to treatment. The PCL-5 provides a total symptom severity score and four DSM-5 symptom cluster scores. Research suggests using a total PCL-5 severity cut-off score of 31 as indicative of clinically significant PTSD symptomatology (Blevins et al., 2015). The psychometric properties of the PCL-5 have been examined in community and clinical populations and have been demonstrated to be good (Blevins et al., 2015). The PCL-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Blevins et al., 2015; Bovin et al., 2016). The PCL-5 has demonstrated good internal consistency with a Chronbach's alpha coefficient reported of .95 (Wortmann, et al., 2016). In the current study, a reliability analysis of the scale demonstrated the PCL-5 to have excellent internal consistency ($\alpha = .95$).

The Trauma Related Shame Inventory. The Trauma Related Shame Inventory (TRSI; Oktedalen et al., 2014) is a 24-item self-report measure of trauma-related thoughts and feelings experienced following exposure to a traumatic experience. The TRSI provides an assessment of total trauma-related shame, as well as four subscale scores. Shame is measured across two facets and two evaluative situational conditions. Facet one, Referent shame, includes the two evaluative situational conditions of self-referent shame (internal-referent shame) and other-referent shame (external-referent shame). Facet two, Aspect shame, represents different subcomponents of shame consisting of self-condemnation (cognitive component) and an affective-behavioural component (Oktedalen et al., 2014). Together these facets and evaluative conditions provide an assessment of trauma-related shame across the four domains grossly defined as Internal-Condensation (e.g., "*I am ashamed of myself because of what happened to me*"), External-Condensation (e.g., "*If others knew what*

happened to me, they would view me as inferior”), Internal-Affective/Behavioural, (e.g., *“I am ashamed of the way I felt during my traumatic experience”*), and External-Affective/Behavioural (e.g., *“If others knew what happened to me, they would be disgusted with me”*).

Examination of the psychometric properties of the TRSI has demonstrated the measure to have good internal consistency with a Chronbach’s alpha coefficient reported of .87 (Oktedalen et al., 2014). Convergent validity with measures of guilt, self-judgement, and PTSD (Oktedalen et al., 2014) has also been demonstrated. In the current study, a reliability analysis of the scale demonstrated the TRSI to have excellent internal consistency ($\alpha = .98$). The previous study identified the significant role of Shame cognitions (assessed using the Internal Condemnation subscale of the TRSI) to be significantly related to PTSD symptom expression. As such, only the Internal Condemnation subscale will be utilised for examination within this study.

The Post-traumatic Cognitions Inventory. The Post-traumatic Cognitions Inventory (PTCI; Foa et al., 1999) is a 33-item self-report scale assessing dysfunctional cognitive beliefs following the experience of trauma. The PTCI measures the type of thoughts experienced following exposure to trauma across the three subscales of Negative Cognitions about Self (e.g., *“I am a weak person”*), Negative Cognitions about the World (e.g., *“people can't be trusted”*), and Self Blame (e.g., *“the event happened because of the way I acted”*). The construct validity and three-factor structure of the PTCI have been supported across community and clinical populations using factor analysis (Foa et al., 1999).

The psychometric properties of the PTCI have demonstrated excellent internal consistency, with Chronbach’s alphas reported between .86 to .97 for the three subscales (Foa et al., 1999). Good test-retest reliability has been obtained for total and subscale scores (.75 to .89; Foa et al., 1999). The PTCI correlated moderately to strongly with measures of PTSD

severity, depression, and general anxiety (Foa et al., 1999). The PTCI compared favourably with other measures of trauma-related cognitions and demonstrated a superior ability to discriminate between traumatised individuals with and without PTSD (sensitivity = .78, specificity = .93; Foa et al., 1999). In the current study, a reliability analysis of the scale demonstrated the PTCI to have excellent internal consistency ($\alpha = .97$). The previous study identified the significant role of Negative Self cognitions (derived from the Negative Self subscale of the PTCI) to be significantly related to PTSD symptom expression. As such, only the Negative Self subscale of the PTCI will be utilised for examination within this study.

The Cognitive Emotion Regulation Questionnaire. The Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2002) is an 18-item self-report tool developed to identify an individuals' use of cognitive coping strategies following the experience of a negative event or situation. The CERQ consists of nine conceptually distinct subscales, each consisting of four items and each referring to an individuals' cognitions following the experience of threatening or stressful life events. These cognitions include self-blame (e.g., "*I feel that I am the one to blame for it*"), other-blame (e.g., "*I feel that others are responsible for what has happened*"), rumination (e.g., "*I dwell upon the feelings the situation has evoked*"), catastrophizing (e.g., "*I continually think how horrible the situation has been*"), putting into perspective (e.g., "*I think that it all could have been much worse*"), positive reappraisal (e.g., "*I think I can learn something from the situation*"), positive refocusing (e.g., "*I think of pleasant things that have nothing to do with it*"), acceptance (e.g., "*I think that I cannot change anything about it*"), and refocus on planning (e.g., "*I think about how I can best cope with the situation*"). The factors of self-blame, rumination, catastrophizing, and blaming others are identified as maladaptive cognitive processes, whilst acceptance, positive reappraisal, positive refocusing, putting into perspective, and refocus on planning are identified to be adaptive cognitive processes (Aldao & Nolen-Hoeksema, 2010;

Garnefski et al., 2001).

Previous research has demonstrated the sub-scales of the CERQ to have adequate internal consistency (ranging from .68 to .86), test-retest reliability, and convergent validity with other measures of trauma and psychological distress (Garnefski et al., 2001; Garnefski et al., 2002). In the current study, a reliability analysis of the scale demonstrated the CERQ to have acceptable internal consistency ($\alpha = .78$). The previous study identified the significant role of Blame cognitions (derived from the Other Blame subscale of the CERQ) to be significantly related to PTSD symptom expression. As such, only the Other Blame subscale of the CERQ will be utilised for examination within this study.

Results

Data Diagnostics and Assumptions Analyses

Prior to commencing data analysis, several data diagnostics and assumptions were evaluated. A visual review of the data and examination of frequency statistics was conducted to identify missing data, data entry errors, and any assumption violations for the 784 participant responses collected. Missing data analysis identified 149 participants who did not complete the included standardised measurement tools following completion of the demographic questionnaire. This missing data represents a response rate of 81%. The study's response rate is defined as the number of individuals achieving full survey completion divided by the number of respondents who did not achieve completion of any presented standardised measurement tools (Draugalis et al., 2008). The study's response rate was identified to fall within the minimal acceptable response rate documented in the literature (Babbie, 1990; Bailey, 1987; Draugalis et al., 2008; Schutt, 1999). Listwise deletion of the 149 respondents with missing data for the presented standardised measurement tools was used with a resulting population sample size of 635. Power analysis using G*Power 3.1 indicated that the minimum sample size required for a Goodness of fit analysis with a $df = 5$ was 220 (Faul et al., 2007).

Table eleven provides a summation of the distribution data for variables included in the data screening process. Visual examination of stem and leaf displays and box plots demonstrated the data to be roughly symmetrical and bell-shaped, indicating univariate normality within the data set (Tabachnick & Fidell, 2013). Overall evaluation of the skewness and kurtosis for assessed variables indicated that the data was approximately symmetrical and normally distributed and supported the assumption of normal univariate distribution (George & Mallery, 2010; Hair et al., 2017; Tabachnick & Fidell, 2013; see Table 11). There was no evidence of univariate outliers within the sample data on observed boxplots, and as the Mahalanobis distance ($MD = 3.00$) did not exceed the critical value ($\chi^2 = 16.27$; $df = 3$; $\alpha = .001$) multivariate outliers were not identified to be of concern (Howell, 2010).

Table 11

Mean Scores, Standard Deviations, Range, and Normality statistics for Participant Scores on the PCL-5, TRSI- IC, PTCI -NS, and CERQ- OB (N = 635)

	<i>M</i>	<i>SD</i>	Min.	Max.	Skewness	Kurtosis
PCL-5	40.71	0.78	0.00	79.0	-.20	.10
Shame	10.80	0.26	0.00	24.0	.20	-.89
Negative Self	3.56	0.06	1.00	6.84	.06	-.98
Blame	5.32	0.11	0.00	10.0	.30	-.98

Note: M = Mean score, SD = Standard deviation, Min. = Minimum, Max. = Maximum.

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between predictor variables (Shame, Blame, Negative Self) and the criterion variable (PCL-5; see Table 12). Correlations between variables did not exceed $r =$

.80, demonstrating that multicollinearity was not of concern within this data sample (Field, 2009; Tabachnick & Fidell, 2013). All assessed predictor variables were identified to correlate significantly with the criterion variable and were retained for further analysis. Overall, the results obtained from the completion of data diagnostics and assumption analyses indicated that the data obtained from the 635 participants met assumption requirements and was adequate for the planned data analyses. All analysis was run at $\alpha = .05$.

Table 12

Correlation Matrices for Predictor and Criterion Variables

	PCL-5	Shame	Negative Self	Blame
PCL-5	-			
Shame	.63***	-		
Negative Self	.72***	.75***	-	
Blame	.33***	.16***	.24***	-

Note: *** $p < .001$.

Participants

No statistically significant differences were observed for participants across genders upon the experience of PTSD symptomatology, $F(3, 631) = 2.38, p = 0.069$, or on scores for the three cognitions of Shame, $F(3, 631) = 0.98, p = 0.402$, Blame, $F(3, 631) = 0.25, p = 0.863$, and Negative Self, $F(3, 631) = 2.07, p = 0.103$.

Participants ranged in age from 15 to 85 years ($M = 39.08, SD = 12.99$). A statistically significant difference was observed for participants across age groups on their experience of PTSD symptomatology as measured by the PCL-5, $F(6, 628) = 5.09, p < 0.001$ (see Table 13).

Table 13*Participant Demographics and Obtained Scores on the PCL-5 (N = 635)*

		<i>n</i>	%	<i>M</i>	<i>SD</i>
Age	15-24 years	100	15.75	33.66	21.15
	25-34 years	132	20.79	44.23	18.94
	35-44 years	186	29.29	43.11	19.95
	45-54 years	145	22.83	41.49	18.27
	55-64 years	54	8.50	38.52	17.58
	65-74 years	15	2.36	33.27	15.95
	75 and older	3	0.47	12.00	10.39
Sexual Orientation	Heterosexual	519	81.73	39.11	19.65
	Homosexual	22	3.46	41.59	20.85
	Bisexual	69	10.87	47.51	17.54
	Asexual	11	1.73	51.45	15.27
	Pansexual	7	1.10	60.71	13.40
	Sexually Fluid	1	0.16	35.00	-
	Not aligned	1	0.16	38.00	-
	Other	5	0.80	59.80	12.19
Relationship Status	Single	220	34.65	41.61	20.26
	Married	170	26.77	38.34	18.51
	Divorced	60	9.45	40.42	17.98
	Partnered	156	24.57	42.13	20.80
	Widowed	11	1.73	42.82	15.16
	Separated	18	2.83	39.61	19.81
Nationality	Australia	267	42.18	37.34	19.22
	USA	191	30.17	44.95	18.51
	Canada	24	3.79	49.17	20.29
	United Kingdom	63	9.95	42.30	19.34
	New Zealand	14	2.21	36.79	20.80
	Other	74	11.69	39.53	20.80

Note: *n* = Number of participants; *M* = Mean score; *SD* = Standard deviation

Participants in the 15-24 year age group scored significantly lower than participants in the 25-34 ($p < 0.001$), 35-44 ($p = 0.002$), and 45-54 ($p = 0.030$) year age groups (see Table 13), and also reported lower rates of interpersonal trauma exposure than these other three groups. No other statistically significant differences were observed between the age groups.

An examination of sexual orientation identified a statistically significant difference for participants upon the experience of PTSD symptomatology as measured by total scores on the PCL-5, $F(7, 627) = 4.01, p < 0.001$. Participants identifying as bisexual, asexual, pansexual, or other scored significantly higher than heterosexual or homosexually identifying participants (see Table 13). There were no statistically significant differences in PTSD symptomatology for participants based upon their current relationship status, $F(5, 629) = 0.79, p = .559$.

A statistically significant difference was observed between identified nationalities and PTSD symptom expression as measured by the PCL-5, $F(5, 627) = 4.66, p < .001$. Australian nationals scored significantly lower than participants from the United States of American ($p < .001$) and Canada ($p = .047$) on total PTSD symptom scores (see Table 13); and also reported lower rates of interpersonal violence exposure ($M = 2.93, SD = 1.67$) than participants residing in Canada ($M = 3.30, SD = 1.30$) and the United States of America ($M = 3.73, SD = 1.52$), $F(5, 627) = 6.22, p < .001$. No other statistically significant differences were observed across nationality groups.

Experience of Traumatic Events

Participants self-reported the experience of IPV and other interpersonal traumatic events. Experiences were classified as either a witnessed event (see Table 14) or an experienced event (see Table 15 and Table 16). A moderate positive relationship between the number of reported interpersonal events and the experience of PTSD symptomatology was observed for the population sampled ($r = .49, p < .001$; Cohen, 1988).

Table 14*Information about Witnessed Traumatic Events and Obtained Scores on the PCL-5 (N = 635)*

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>F</i>
Physical Assault					
Not Witnessed	543	85.51	40.40	19.62	0.97
Witnessed	92	14.49	42.58	19.72	
Assault with a Weapon					
Not Witnessed	581	91.50	40.21	19.75	4.58*
Witnessed	54	8.50	46.17	17.63	
Sexual Assault					
Not Witnessed	604	95.12	40.34	19.59	4.55*
Witnessed	31	4.88	48.03	19.43	
Unwanted Sexual Experience					
Not Witnessed	594	93.54	40.53	19.75	0.81
Witnessed	41	6.46	43.39	17.86	
Severe Human Suffering					
Not Witnessed	527	82.99	40.66	19.68	0.02
Witnessed	108	17.01	40.96	19.51	
Other					
Not Witnessed	565	88.98	40.41	19.67	1.22
Witnessed	70	11.02	43.16	19.32	

Note: *n* = Number of participants; % = percentage of participant sample, *M* = Mean score; *SD*

= Standard deviation, * $p < .05$

No significant relationship was observed between the number of witnessed interpersonal traumatic events and the experience of PTSD symptomatology ($r = .07, p = .07$).

Statistically significant differences upon PTSD symptom expression were observed for participants reporting having witnessed interpersonal violence enacted upon another person within the categories of assault with a weapon $F(1, 633) = 4.58, p = .033$, and sexual assault $F(1, 633) = 4.55, p = .033$, (see Table 14). No other statistically significant differences were observed for participants witnessing interpersonal violence.

Of the 635 participants sampled, 604 (95.12%) reported having experienced interpersonal trauma within their lifetime (see Table 15).

Table 15

Information about Experienced Interpersonal Traumas (Events personally experienced; N = 635)

	Total		Female		Male		Non-Binary		F
	Sample								
	n	%	n	%	n	%	n	%	
Interpersonal Trauma	604	95	557	96	43	88	4	100	2.30
IPV	425	67	403	69	19	39	3	75	6.75***
Physical assault	423	67	395	68	26	53	2	50	1.85
Assault (weapon)	207	33	192	33	11	22	4	100	1.96
Sexual assault	379	60	365	63	11	22	3	75	11.06***
Unwanted sexual exp.	477	75	455	78	18	37	4	100	15.52***
Severe suffering	157	25	143	17	10	20	4	100	0.57
Other	394	62	367	63	24	49	3	75	0.19

Note: n = Number of participants; % = percentage of participant sample; *** $p < .001$

Table 16*Information about Experienced Traumatic Events and Scores on the PCL-5 (N = 635)*

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>F</i>
Interpersonal Trauma					
Not Experienced	31	4.88	20.97	13.14	33.48***
Experienced	604	95.12	41.69	19.39	
Intimate Partner Violence					
Not Experienced	210	33.07	33.16	20.10	49.67***
Experienced	425	66.93	44.42	18.32	
Physical Assault					
Not Experienced	212	33.39	31.45	19.21	78.98***
Experienced	423	66.61	45.32	18.18	
Assault with a Weapon					
Not Experienced	428	67.40	36.93	19.27	54.45***
Experienced	207	32.60	48.77	17.93	
Sexual Assault					
Not Experienced	256	40.31	32.24	18.81	90.59***
Experienced	379	59.69	46.40	18.09	
Unwanted Sexual Experience					
Not Experienced	158	24.88	30.53	18.50	61.47***
Experienced	477	75.12	44.06	18.84	
Severe Human Suffering					
Not Experienced	478	75.28	38.00	19.60	40.66***
Experienced	157	24.72	49.27	17.21	
Other					
Not Experienced	241	37.95	24.10	20.18	46.94***
Experienced	394	62.05	44.73	19.64	

Note: *n* = Number of participants; % = percentage of participant sample, *M* = Mean score; *SD*

= Standard deviation, *** $p < .001$

There was a statistically significant difference observed between genders for the reported experience of IPV, $F(3, 631) = 6.75, p < .001$, sexual assault, $F(3, 631) = 11.06, p < .001$, and other unwanted sexual experiences, $F(3, 631) = 15.52, p < .001$, with female participants reporting a higher incidence of IPV, sexual assault, and unwanted sexual experiences than male participants (see Table 15). No other statistically significant differences between the experiences of interpersonal trauma were observed across the genders.

A statistically significant difference between individuals with and without exposure to interpersonal violence was identified on the experience of PTSD symptomatology, $F(1, 633) = 33.48, p < .001$ (see Table 16). A statistically significant difference was also observed for the 425 (66.93%) participants with previous exposure to IPV compared to those without previous experience of IPV on the experience of PTSD symptoms, $F(1, 633) = 49.67, p < .001$ (see Table 16).

There was a statistically significant difference observed between participant scores on the PCL-5, with participants reporting the personal experience of physical assault, $F(1, 633) = 78.98, p < .001$, assault with a weapon, $F(1, 633) = 54.45, p < .001$, sexual assault, $F(1, 633) = 90.56, p < .001$, unwanted sexual experiences, $F(1, 633) = 61.47, p < .001$, severe human suffering, $F(1, 633) = 40.66, p < .001$, and other significant traumatic events, $F(1, 633) = 46.94, p < .001$, scoring significantly higher on the PCL-5 than participants who did not report the experience of these types of interpersonal trauma exposure (see Table 16).

Cognitions

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between the cognitions of Shame, Blame, and Negative Self with total scores on the PCL-5 (see Table 17). Significant positive relationships were observed for all cognitions and PTSD symptom expression, with Blame demonstrating a significant

medium correlation and Shame and Negative Self both demonstrating significant strong correlations (Cohen, 1988).

Table 17

Correlation Matrices for Total Scores on the PCL-5 and the Cognitions of Shame, Blame, and Negative Self (N = 635).

	PCL-5 Total	Shame	Blame	Negative Self
PCL-5 Total	-			
Shame	.63***	-		
Blame	.33***	.16***	-	
Negative Self	.72***	.75***	.24***	-

Note: *** $p < .001$

To further examine the relationship between the cognitions of Shame, Blame, and Negative Self upon PTSD symptom expression, the participant population was divided into two subgroups based upon their obtained scores on the PCL-5. Participants who met criteria consistent with clinically significant symptoms for PTSD as measured by the PCL-5 (total score ≥ 31 ; $n = 439$) were identified as the “*Criteria met*” subgroup, and participants who did not report the experience of clinically significant PTSD symptomatology (total score < 31 ; $n = 196$) identified as the “*Criteria not met*” subgroup. A statistically significant difference between the two participant subgroups was observed for obtained scores on the cognitions of Shame $F(1, 633) = 209.52, p < .001$, Blame, $F(1, 633) = 53.19, p = .019$, and Negative Self, $F(1, 633) = 336.61, p < .001$ (see Table 18).

Table 18

Subscale Scores for Participants who Met and Did Not Meet Cut-off Criteria on the PCL-5 (N = 635).

	<i>Criteria met</i>			<i>Criteria not met</i>			<i>F</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
Shame	12.99	6.20	439	5.89	4.39	196	209.52***
Blame	5.83	2.68	439	4.18	2.52	196	53.19*
Neg. Self	4.16	1.29	439	2.23	1.06	196	336.61***

*Note: n = Number of participants; M = Mean score; SD = Standard deviation; *** $p < .001$;*

** $p < .05$*

A further examination of the participant population identified a statistically significant difference between participants with previous experience of IPV ($n = 425$) compared to individuals with no previous exposure to IPV ($n = 210$), on obtained scores for the cognitive variables of Shame $F(1, 424) = 99.74, p < .001$, Blame $F(1, 424) = 25.92, p < .001$, and Negative Self, $F(1, 424) = 162.12, p < .001$ (see Table 19). A statistically significant difference was also observed for participants with previous experience of any form of interpersonal trauma ($n = 604$) compared to individuals with no previous exposure to interpersonal trauma ($n = 31$) on obtained scores for the cognitive variables of Shame $F(1, 603) = 188.10, p < .001$, Blame $F(1, 603) = 50.79, p < .001$, and Negative Self, $F(1, 603) = 324.12, p < .001$ (see Table 19).

Table 19

Subscale Scores for Participants with Reported Exposure to IPV (n = 425) and Interpersonal Trauma (n = 604) on the Cognitions of Shame, Blame, and Negative Self.

	<i>Criteria met</i>			<i>Criteria not met</i>			<i>F</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
IPV							
Shame	13.03	6.14	325	6.45	4.47	101	99.74***
Blame	5.71	2.63	325	4.21	2.50	101	25.92***
Neg. Self	4.19	1.29	325	2.39	1.05	101	162.12***
IPT							
Shame	13.17	6.12	429	6.21	4.37	176	188.10***
Blame	5.83	2.68	429	4.15	2.53	176	50.79***
Neg. Self	4.19	1.26	429	2.25	1.05	176	342.12***

Note: *n* = Number of participants; *M* = Mean score; *SD* = Standard deviation; *** *p* < .001;

IPT = Interpersonal Trauma.

The Trauma Cognition Model

The TCM was evaluated using path analysis. To examine the validity of the TCM across participant populations, the analysis was conducted on two subgroups of the total participant population concurrently. These subgroups included participants with the reported experience of IPV (*n* = 425) and participants with the reported experience of any form of interpersonal trauma (*n* = 604; see Table 19).

Intimate Partner Violence. The path analysis result for the three-factor TCM for survivors of IPV showed an adequate overall model fit. The chi-square test was non-significant ($\chi^2 = 3.31$, *df* = 6, *p* = .769), with non-significant results generally indicative of

absolute/predictive model fit (Bergh, 2015). The Root Mean Square Error Approximation (RMSEA; Steiger, 1990) evaluated the absolute model fit. The RMSEA was found to be 0.000 (90% CI = .00, -.04). RMSEA scores approaching 0 are preferred, with RMSEA scores < 0.08 considered indicative of acceptable model fit (Hu & Bentler, 1999; Kline, 2015). The Comparative Fit Index (CFI; Bentler, 1990) and the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) also demonstrated relative model fit for the IPV population sample (CFI = 1.00; TLI = 1.00), with scores equal to or greater than .95 indicative of acceptable model fit (Bentler 1990; Kline, 2015; Muthén & Muthén, 2015). To examine the significance of the estimated path coefficients in the TCM, Bias-Corrected and Accelerated (BCa) bootstrapping using parallel processing was conducted (Hair, 2017; see Table 20).

Table 20

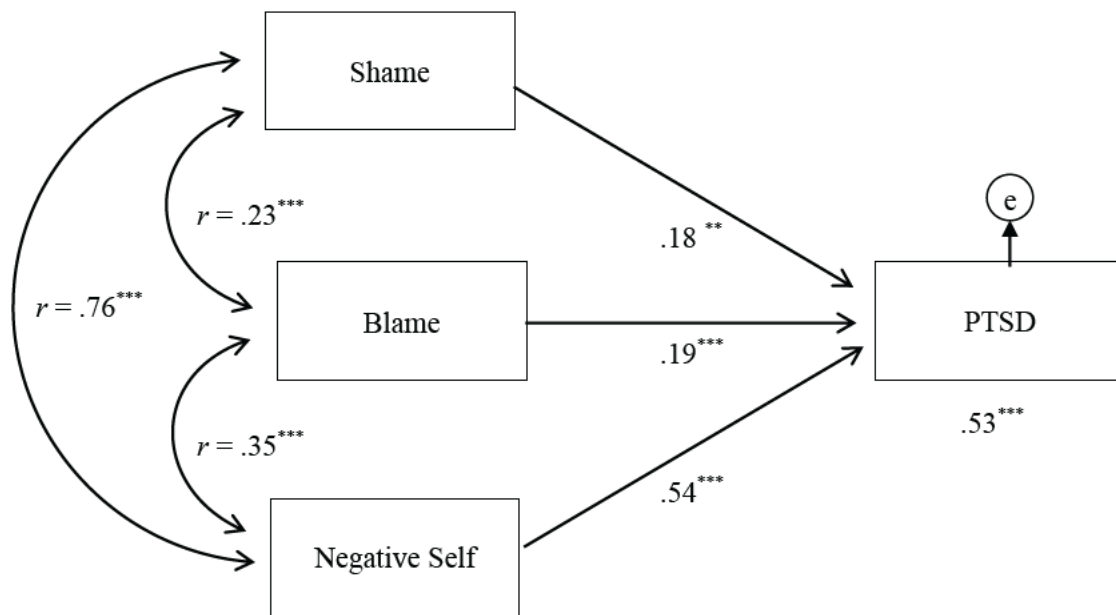
Path Analysis Data for Survivors of IPV following Bootstrapping Analyses and Significance Testing (N = 425)

	<i>IPV</i>		
	<i>t</i>	<i>Path Coefficient</i>	
		<i>M</i>	<i>SD</i>
Shame - PTSD	2.90**	.18	.05
Blame - PTSD	5.03***	.19	.04
Negative Self - PTSD	9.46***	.54	.06
Shame - Blame	2.74**	.12	.04
Shame – Negative Self	33.25***	.72	.02
Blame – Negative Self	2.27*	.09	.04

Note: M = Mean score; SD = Standard deviation; * $p < .05$; ** $p < .01$; *** $p < .001$

Figure 10

Path Coefficients and Correlations for the TCM for Survivors of IPV (N = 425)



Note: $*** p < .001$; $** p < .01$; $r =$ correlation coefficient

The results of the analysis demonstrated the cognitions of Shame ($\beta = .18, p = .001$), Blame ($\beta = .19, p < .001$), and Negative Self ($\beta = .54, p < .001$) to significantly predict the experience of PTSD symptomatology for survivors of IPV (see Table 20). Shame, Blame, and Negative Self were identified to be significant independent predictors of PTSD symptomatology and to significantly correlate with one another (see Figure 10). The TCM with the three cognitions of Shame, Blame, and Negative Self explained 52.6% of the variance in PTSD symptom expression for IPV survivors (see Figure 10).

Interpersonal Trauma. The path analysis for the three-factor TCM for survivors of interpersonal trauma showed an adequate overall model fit. The chi-square test was non-significant ($\chi^2 = 0.001, df = 6, p = 1.000$) and the RMSEA was found to be 0.00; indicating absolute/predictive model fit (Bergh, 2015). The Comparative Fit Index (CFI; Bentler, 1990)

and the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) also demonstrated relative model fit for the interpersonal trauma population sample (CFI = 1.00; TLI = 1.00; Bentler 1990; Muthén & Muthén, 2015). To examine the significance of the estimated path coefficients in the TCM, BCa bootstrapping using parallel processing was conducted (Hair, 2017; see Table 21).

Table 21

Path Analysis Data for Survivors of Interpersonal Trauma following Bootstrapping Analyses and Significance Testing (N = 604).

	<i>Interpersonal Trauma</i>		
	<i>t</i>	<i>Path Coefficient</i>	
		<i>M</i>	<i>SD</i>
Shame - PTSD	4.24***	.19	.04
Blame - PTSD	6.25***	.18	.03
Negative Self - PTSD	11.81***	.54	.05
Shame - Blame	3.91***	.15	.04
Shame – Negative Self	37.34***	.72	.02
Blame – Negative Self	3.94***	.11	.03

Note: M = Mean score; SD = Standard deviation; *** $p < .001$

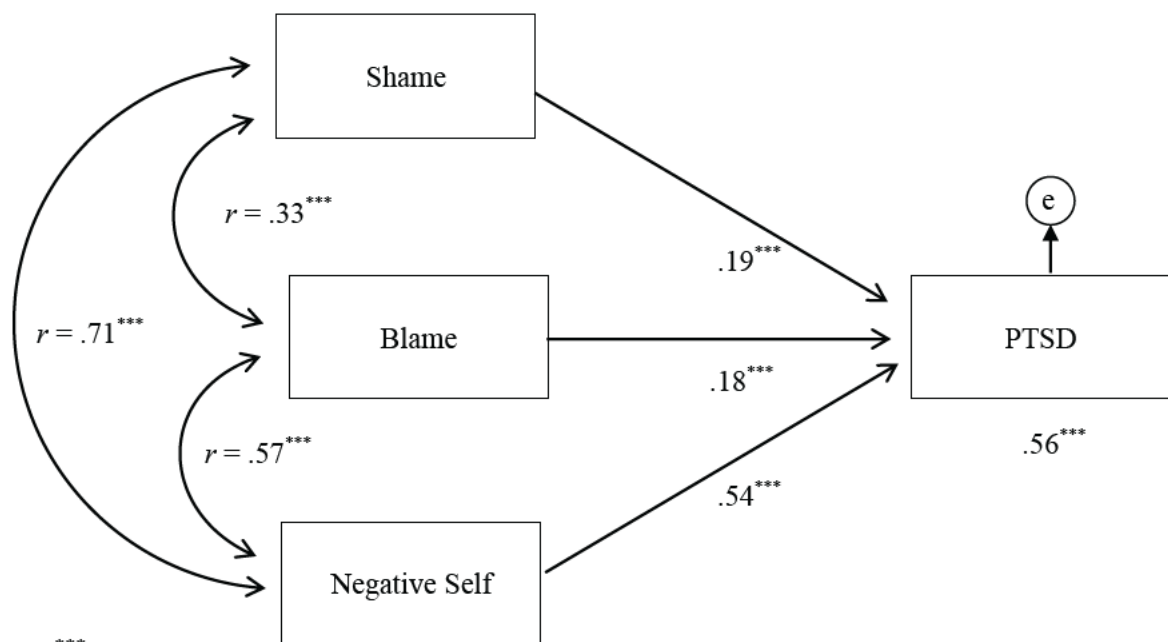
The results of the analysis demonstrated the cognitions of Shame ($\beta = .19, p < .001$), Blame ($\beta = .18, p < .001$), and Negative Self ($\beta = .54, p < .001$) significantly predicted the experience of PTSD symptomatology for survivors of interpersonal trauma (see Table 21). Shame, Blame, and Negative Self were identified to be significant independent predictors of PTSD symptomatology and to be significantly correlated with one another (see Figure 11).

The TCM with the three cognitions of Shame, Blame, and Negative Self explained 55.5% of the variance in PTSD symptom expression for survivors of interpersonal trauma (see Figure 11).

Figure 11

Path Coefficients and Correlations for the TCM for Survivors of Interpersonal Trauma

($N = 604$)



Note: *** $p < .001$

Discussion

The overall aim of this current study was to examine the validity of the TCM for a heterogeneous sample of interpersonal trauma survivors, with an assessment of outcomes across participant demographics including, age, gender, sexual identity, relationship status, nationality, and trauma typology. An examination of the descriptive data identified a significant proportion of the population sample (69%) to be currently experiencing clinically significant PTSD symptomatology following the experience of traumatic events. These results are consistent with previous research that has demonstrated the reported experience of PTSD

following interpersonal trauma exposure to occur at rates between 31 to 84.4 percent (Black et al., 2011, Iverson et al., 2011; Koenen et al., 2017; Rees et al., 2011; Stein et al., 2000) across measured population samples.

More than two thirds (67%) of the sampled population reported the experience of IPV, and a significant majority (95%) reported the previous experience of interpersonal trauma. The prevalence of interpersonal trauma exposure within this population sample is consistent with other studies that have identified interpersonal violence to be experienced in at least one form across the lifetime for both men and women within community, clinical, and nationally representative samples (Benjet et al., 2016; Black et al., 2011; Kessler et al., 1995; Kessler et al., 2017; Rees et al., 2011; Resnick et al., 1993; Turell, 2000; WHO, 2013a). Participants reporting exposure to interpersonal trauma were more likely to experience clinically significant PTSD symptomatology than participants reporting exposure to other non-personal forms of trauma exposure. These findings are consistent with previous research that has identified interpersonal violence typologies as more strongly related to PTSD than other non-personal forms of violence (Black et al., 2011; Iverson et al., 2013; Stark, 2012; WHO, 2013a).

Trauma typologies were also identified to contribute to PTSD symptom expression differentially. Participants with previous exposure to IPV reported greater PTSD symptomatology than participants without IPV exposure. Similarly, participants with the direct experience of interpersonal violence reported the experience of significantly greater PTSD symptomatology than individuals exposed to other non-personal forms of trauma (i.e., motor vehicle accidents, illness/injury, natural disaster). These findings are consistent with the literature that has demonstrated higher prevalence rates of PTSD for individuals exposed to multiple incidences, greater severity, and interpersonal forms of experienced abuse (Dutton, 1992; Houskamp & Foy, 1991; Jones et al., 2001). The delineation between PTSD symptom

expression for individuals exposed to interpersonal versus non-personal forms of trauma exposure highlights the unique and varied impact of interpersonal trauma upon an individuals' symptom expression following trauma exposure. This finding highlights the need to further understand and conceptualise interpersonal trauma exposure and its impact upon psychological functioning, maladaptive symptom expression, and trauma recovery.

A significant difference was observed between the age of participants and their experience of both interpersonal trauma and PTSD. Younger participants (i.e., those aged 15 to 24 years) were identified to have lower rates of PTSD symptomatology than older participants (i.e., those aged 25 to 54 years) and reported lower rates of overall trauma exposure. These findings are consistent with the literature that has identified higher prevalence rates of PTSD symptom expression and diagnosis for individuals exposed to multiple incidences of trauma exposure and a greater severity of experienced abuse (Dutton, 1992; Houskamp & Foy, 1991; Jones et al., 2001).

Consistent with previous research (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000) and supporting hypothesis one, gender was not identified to significantly differentiate between participants and their experience of PTSD symptomatology following the experience of interpersonal trauma. The prevalence of violence typologies across the genders is generally consistent with previous research (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000; Widom et al., 2008), with females and non-binary identifying participants more likely to report the experience of sexual assault and unwanted sexual experiences, and male participants reporting a greater incidence of physical assault. Whilst there were some identified differences in the types of trauma exposure experienced across the genders, there were no statistically significant differences between gender and the experience of PTSD.

The sexual orientation of the population sample was identified to differentiate between

participants' experience of PTSD symptomatology, with individuals identifying as bisexual, asexual, pansexual, and other/non-specified orientations reporting significantly greater PTSD symptoms than participants identifying as heterosexual or homosexual. This finding is partially consistent with previous research that has identified marginalised population groups to report higher rates of adverse mental health outcomes following the experience of trauma (Lorenzetti et al., 2015; O'Halloran, 2015; Roch et al., 2010). Previous population-based studies have examined the minority stress hypothesis upon sexual orientation and identified a higher prevalence of mental health disorders and interpersonal trauma for non-heterosexual individuals (King et al., 2008; Meyer, 2003; Roch et al., 2010; Turell, 2000). This theory proposes that disparities in experience for sexual minorities can be grossly explained by stressors induced by the existence of a homophobic society that fosters and maintains a culture of harassment, discrimination, maltreatment, and victimisation (Meyer, 2003). It is therefore proposed that the differences in PTSD symptom expression exhibited by participants of minority sexualities within this study (i.e., bisexual, asexual, pansexual, and other/non-specified orientations) to be reflective of continuing social prejudices, additional psychosocial stressors experienced due to these social prejudices, and the current unavailability and inaccessibility of services and supports for non-heterosexual survivors of interpersonal trauma.

The results of this study did not identify any significant differences for participants identifying as homosexual when compared to participants identifying as heterosexual. The delineation between sexual identities has continued to evolve, with the number of individuals identifying within "emerging identities" (i.e., pansexual, asexual, sexually fluid) continuing to grow (Borgogna et al., 2018; Callis, 2014; Donatone & Rachlin, 2013; Flanders et al., 2017; Galupo et al., 2017; Walton et al., 2016). The minority stress perspective proposes that individuals identifying within one of the emerging identities (i.e., pansexual, asexual, sexually

fluid) experience increased identity-related distress due to their identification as a minority within the Lesbian Gay Bisexual Transgender Queer Intersex (LGBTQI) community, which has been indicated to precipitate the experience of increased stigma, discrimination, and prejudice (Borgogna et al., 2018). The results obtained in this study are consistent with previous research examining mental health status across sexual identities. These studies have demonstrated that individuals identifying as bisexual and within the emerging identity categories (i.e., pansexual, asexual, sexually fluid) experience significantly higher rates of mental health symptomatology and diagnosis (including, anxiety, depression, and suicidal ideation), than individuals identifying as heterosexual and homosexual (Balsam et al., 2005; Borgogna et al., 2018; Jorm et al., 2002; Kerr et al., 2013; Ross et al., 2018; Wadsworth & Hayes-Skelton, 2015).

Despite the differences in PTSD symptom expression identified across assessed sexual identities, there were no significant differences observed for participants in relation to their current relationship status upon PTSD symptom expression. This is the first study to examine the psychological outcomes for survivors of interpersonal violence across differing sexual identities. This study's outcomes highlight the differential outcomes in PTSD symptom expression across the assessed sexual identity groups and the need for further research examining the unique needs and mental health outcomes for all individuals exposed to interpersonal trauma.

There was a significant difference observed between Australian and North American (i.e., United States of America and Canada) participants on both the expression of PTSD symptomatology and rates of interpersonal trauma exposure, with Australian nationals scoring significantly lower across both domains. Higher prevalence rates of PTSD following interpersonal trauma exposure for North American samples have been consistently documented within the literature (Creamer et al., 2001; Koenen et al., 2017; Sareen, 2020;

Stein et al., 2007), with differences proposed to be resultant from individual and societal factors inherent within these countries (Sareen, 2020). At the time of data collection for this study, a global health emergency resulting from the human-to-human transmission of the coronavirus disease had been enacted, with Asia, Europe, and North America identified as the most affected pandemic outbreak areas (Zhu et al., 2020). Coronavirus has been identified as a global pandemic resulting in negative impacts upon physical health, mental health, and sociocultural wellbeing (Vigo et al., 2020; Zhu et al., 2020). At the time of writing (22nd of February 2021), there were 110.75 million confirmed cases and 2.46 million confirmed deaths from coronavirus globally, with approximately 25.01% of cases and 20.04% of deaths occurring in the United States of America (Johns Hopkins University & Medicine, 2021). It is hypothesised that the ongoing impacts of the coronavirus may have further contributed to the already increased prevalence of trauma exposure and PTSD within the North American population sample and resulted in the observed differences between participants within this sample. Emerging research is documenting and examining the impact of the coronavirus pandemic globally and is likely to provide increased knowledge and understanding relating to the impact of this pandemic upon individuals and their experience of and exposure to interpersonal violence and PTSD during these unprecedented times.

A significant difference between individuals exposed to interpersonal trauma and those with other, non-personal forms of trauma exposure was observed across PTSD symptom expression, and the three assessed cognitions of Shame, Blame, and Negative Self. Consistent with hypothesis two, the experience of interpersonal trauma was observed to differentiate between individuals who met the criteria for clinically significant PTSD symptomatology and those who did not. Specifically, participants who reported the experience of interpersonal trauma were more likely to report the presence of clinically significant PTSD symptomatology than participants exposed to non-personal forms of trauma

exposure. The cognitions of Shame, Blame, and Negative Self were also identified to differentiate between trauma typologies, with higher Shame, Blame, and Negative Self cognitions identified following the experience of interpersonal trauma when compared to non-personal forms of trauma exposure. This finding highlights the negative impact the cognitions of Shame, Blame, and Negative Self have upon the experience of psychological distress and dysfunction following exposure to interpersonal trauma and identify a need for clinical treatments to identify and address these specific cognitions for the management and resolution of PTSD symptomatology.

Hypothesis three predicted that the TCM would account for a significant proportion of the variance in PTSD symptom expression for survivors of IPV and interpersonal trauma, and that high scores on the three posttrauma cognitions described within the TCM of Shame, Blame, and Negative Self would independently predict the presence of clinically significant PTSD symptomatology for survivors of IPV and interpersonal trauma. Overall, the TCM was demonstrated to account for a significant proportion of the variance in experienced PTSD symptoms for individuals with exposure to IPV and interpersonal trauma, supporting hypothesis three. The posttrauma cognitions of Shame, Blame, and Negative Self were identified as significant independent predictors of PTSD symptom expression across both trauma populations. These results highlight the significant role these posttrauma cognitions play in the development and maintenance of PTSD following exposure to interpersonal trauma and demonstrate the TCM's ability to predict PTSD development following exposure to the assessed forms of interpersonal trauma.

Limitations and Implications for Future Research

Whilst the current study extends the literature by examining the TCM and the causal relationships between the posttrauma cognitions of Shame, Blame, and Negative Self upon PTSD symptom expression for a heterogeneous population of interpersonal trauma survivors,

there are several limitations worth noting that have arisen as a direct result of the research aims and methodology. Whilst the data for this study was obtained from a large population sample, it is acknowledged that the participant numbers for minority and marginalised groups were lower than expected. It is also acknowledged that ongoing changes are occurring within the nomenclature for an individuals' identification within gender and sexual orientation classification groups. Whilst qualitative options were provided to include self-identification and labelling within gender and sexual identity domains, the small number of participant responses obtained within individual groups, restricts the generalisability of research outcomes across all currently recognised identities and genders.

Similarly, participant representation was largely obtained from within western countries. As such, generalisability is limited to individuals within these nations. As this is one of the first known studies to examine the experience of interpersonal violence and PTSD across varying trauma typologies and population groups, the results obtained in this study provide a foundation from which further research can be conducted. An expansion of the population sample to obtain increased participation from marginalised and minority gender and sexual orientation groups and a widening of the geographical scope of participation may provide enhanced understanding into the needs and outcomes for these individuals and provide further support for the TCM and its utility across a wide population sample.

As discussed in the previous chapter, online sampling methods contribute to the identified study limitations. Due to the absence of face-to-face contact and the anonymity of participation, there is no way to assess the validity of participant responses on the provided standardised measurement tools. Online data collection methodology relies on participant self-identification as a survivor of trauma, the identification and quantification of psychosocial symptomatology, and the accurate understanding and interpretation of questionnaire items. These factors inherent in online data collection may potentially result in

biased responses, participant error, or over/under-reporting of symptomatology. Despite these limitations, online survey methods have been identified to be a cost effective time limited means of data collection with the capacity to reach a wide range of participation from samples across geographical locations and to minimise participant desirability bias when compared to other means of data collection (i.e., paper-based or clinician-administered; Evans & Mathur, 2005; Fricker & Schonlau, 2002; Nayak & Narayan, 2019).

The questionnaire itself comprised standardised measurement tools that contained items with the potential to elicit participant distress. Items assessing previously experienced traumatic events were placed at the commencement of the questionnaire, which may have contributed to the early participant discontinuation identified within this study. As the research aim was to examine trauma responses, participants needed to be able to identify and quantify their experiences of traumatic events and psychological sequela. However, due to the nature of the participant population being examined (i.e., survivors of trauma) it was equally, if not more important, to minimise the potential for harm and/or distress and to empower respondents to withdraw from participation at any time. Previous research examining participant burden within populations of trauma survivors has identified that whilst a subset of participant samples typically reports unanticipated distress or strong negative emotions, the majority of respondents do not negatively evaluate their experience or regret research participation (Newman & Kaloupek, 2004). The ongoing participation and completion of the full online questionnaire by a significant majority (81%) of individuals who accessed the questionnaire are largely consistent with these research outcomes. As such, it was not deemed appropriate to alter the order of item presentation as a means of minimising participant attrition, nor was it likely to enhance questionnaire completion. Participants engaged in this study were directed to publicly accessible support groups and provided contact information for support services should distress be elicited through participation in this project. Access to

direct follow up and support by researchers and ongoing collection of data related to the factors contributing to the experience of distress and/or drop out (i.e., specific items) would likely provide enhanced insight into the factors that contribute to participant attrition and research burden and provide practical steps to obtain much-needed data whilst supporting the needs and wellbeing of participants.

Conclusion

As discussed in chapter three, despite the identification and acknowledgement that posttrauma cognitions play a significant role in the development and maintenance of PTSD symptomatology following exposure to interpersonal trauma, there is no current consensus within the literature regarding the specific cognitions and their role in PTSD symptom expression following exposure to interpersonal trauma. This study addresses this gap. The results of the previous study demonstrated a positive relationship between the three specific posttrauma cognitions of Shame, Blame, and Negative Self upon PTSD symptom expression for female survivors of male perpetrated IPV. These posttrauma cognitions were identified to independently predict the experience of clinically significant PTSD symptomatology following exposure to IPV and their relationship to PTSD symptom expression used to inform the development of the TCM.

The results of this study indicated that a positive relationship exists between posttrauma cognitions and self-reported symptoms of PTSD. These findings are consistent with the proposed pathway depicted in the TCM for maintaining PTSD following exposure to interpersonal trauma and are consistent with the previously obtained outcomes within this research project. The results obtained within this study provide empirical support for the TCM and its capacity to predict PTSD symptom expression following exposure to IPV and other assessed forms of interpersonal trauma. Despite the noted limitations, the inclusion of a larger, more heterogeneous participant sample allows for a greater generalisation of outcomes

and wider applicability of the TCM across participant demographics and trauma typologies.

Clinically, the delineation between PTSD symptom expression and severity of posttrauma cognition activation for individuals exposed to interpersonal versus non-personal forms of trauma exposure highlights the unique and varied impact of interpersonal trauma upon PTSD symptom expression. These outcomes highlight the need for cognitive-based psychological interventions to be specifically tailored to address the posttrauma cognitions of Shame, Blame, and Negative Self that have been demonstrated within this research program to maintain PTSD symptom expression. Similarly, clinical interventions that identify and address the individuals' unique needs within bisexual and emerging sexual and gender identity groups, need to form the foundation of clinical treatments for survivors of interpersonal trauma. The empirical outcomes from this study indicate that clinical interventions centred upon the identification and modification of the posttrauma cognitions of Shame, Blame, and Negative Self would likely contribute to a significant reduction in experienced PTSD symptomatology and assist in the facilitation of trauma recovery for survivors of interpersonal trauma.

Chapter Five

Development and Psychometric Evaluation of the Trauma Recovery Measure

Chapter Overview

The literature review in chapter two and the results obtained from previous studies within this program of research have highlighted the role of cognitive processes in the maintenance of PTSD and the facilitation of Trauma Recovery for survivors of interpersonal trauma. A significant limitation highlighted throughout the literature and within previously presented studies within this program of research, is the absence of a validated means for measuring Trauma Recovery. This chapter will describe the development of the Trauma Recovery Measure and provide details of the psychometric evaluation undertaken to examine its reliability and validity within a community sample of trauma survivors. The methodology for the two phases of measure development and psychometric evaluation will be outlined and the results of the analysis provided. Finally, the outcomes of this study and implications for clinical practice and the overall research project are discussed.

Introduction

Comprehensive reviews of the Trauma Recovery literature provided within earlier chapters of this program of research, have highlighted the need for conceptual clarity and psychometric evaluation of Trauma Recovery. The absence of a consensual definition and clinical measurement tool for Trauma Recovery have been identified as significant limitations to the current understanding and evaluation of Trauma Recovery. These limitations have likely contributed to the dearth of research and the absence of any currently published literature examining Trauma Recovery for survivors of interpersonal trauma. Having a clear and validated conceptualisation and means of assessment for Trauma Recovery is imperative to the development of clinical interventions and services that provide trauma-informed, recovery-oriented treatments for survivors of interpersonal trauma.

Due to the absence of an alternative means for measurement, development, or assessment, the Trauma Recovery Measure (TRM) development was founded upon previous studies within this program of research and the identified relationship between posttrauma cognitions and trauma-related psychopathology. The results of the previous studies within this program of research have demonstrated that the mitigation of negative posttrauma cognitions of Shame, Blame, and Negative Self results in a reduction of PTSD symptom expression and contributes to Trauma Recovery. As such, the identified PTSD maintaining cognitions of Shame, Blame, and Negative Self were used to facilitate measure development.

Research Aims

The present study aimed to address the limitations of current assessment approaches through the psychometric evaluation of the TRM. The TRM's overall goal was to provide a positive, strengths-based instrument to measure Trauma Recovery following exposure to interpersonal trauma. The identified criteria for the measurement tool were that it be brief, easy to understand and administer, applicable across trauma populations, able to quantify change in response to treatment, and be psychometrically sound.

To achieve this aim, it was hypothesised that:

1. The TRM would demonstrate an acceptable factor structure, with items loading onto three factors, consistent with the hypothesised construct of the TRM;
2. The TRM would have an acceptable degree of internal consistency (i.e., $\geq .70$; Tabachnick & Fidell, 2013);
3. The TRM would demonstrate divergent validity with trauma symptomatology measures (PCL-5, PTCI, TRSI, CERQ). Specifically, it was hypothesised that the TRM would exhibit a high, negative correlation with the PCL-5, TRSI, and the PTCI and a moderate negative correlation with the CERQ. These findings were expected given the domains of measurement within the CERQ and the number of

items within this tool that measure positive variables.

4. The TRM would demonstrate convergent validity with a high positive correlation between total scores on the TRM and the SCS.
5. The TRM subscales of Validation, Liberation, and Positive Self would demonstrate divergent validity through high negative correlations with the subscales of the TRSI-IS, CERQ-OB, and PTCI-NS respectively, from which they were derived.
6. The TRM would demonstrate acceptable specificity with total and subscale scores demonstrating a capacity to differentiate participants with clinically significant PTSD symptoms from participants with lower and/or sub-threshold symptoms.

Method

Two phases were required for the development and psychometric evaluation of the TRM and are detailed below. Phase one involved instrument development and phase two, the psychometric evaluation of the measurement tool.

Phase One: Instrument Development

To inform the instrument development process, a stepwise approach was adopted from the recommendations outlined in Boateng and colleagues (2018), DeVellis (2012), and Gregory (2015).

Step One: Construct Identification. The current study aimed to develop an instrument with the capacity to measure Trauma Recovery. For this study, Trauma Recovery is defined as an individual process of cognitive change leading to enhanced emotional and behavioural control and the attainment of intrapersonal mastery, empowerment, and hope for oneself and the future. Trauma Recovery is proposed to exist along a continuum as the survivor moves away from self-loathing, blaming others, and internal condemnation to a place of validation, empowerment, and self-compassion.

Step Two: Item Generation. To identify how Trauma Recovery's construct had been

conceptualised and operationally defined in previous research, a comprehensive search of both academic and ‘grey’ literature was conducted. This literature review (see chapter 2) identified a dearth of research and an absence of current evidence-based assessment measures for Trauma Recovery. Due to the absence of deductive methods for analysis, an inductive approach was adopted to include exploratory research methodologies.

Due to the absence of a validated framework for Trauma Recovery, an alternate approach to item development was adopted. The TCM, described and validated in chapter four, demonstrated the three posttrauma cognitions of Shame, Blame, and Negative Self to have significant independent predictive validity for PTSD symptom expression following interpersonal trauma exposure. Whilst a significant negative correlation between PTSD symptom expression and Trauma Recovery has been identified, Trauma Recovery and PTSD symptom expression are not theorised to be synonymous. Recovery is proposed to occur across a continuum, whereas PTSD symptom expression and its mitigation have not been identified to occur in a linear or predictable pattern.

Due to the absence of an alternative means for measurement, the development of the TRM was founded upon previous studies within this program of research and the identified relationship between cognitions and PTSD symptom expression. It was proposed that the mitigation of these trauma-maintaining cognitions would reduce PTSD symptom expression and facilitate Trauma Recovery. As such, the Shame, Blame, and Negative Self cognitions were used to facilitate item generation. Items from the subscales of the TRSI-IS, CERQ-OB, and PTCI-NS were identified and restructured to develop polarised, positively worded items for the TRM.

Following item generation, the subscales were also subject to inversion and positive reframing with the subscales’ titles intended to be consistent with the developed recovery-based items. As such, the converted items from the Shame (TRSI-IC), Blame (CERQ-OB),

and Negative Self (PTCI-NS) subscales were categorised into the three domains of Validation, Liberation, and Positive Self respectively (see Table 22).

As an inversion of Shame, Validation was defined as a survivor's approval and acceptance of themselves as they are, despite their experience of trauma. It was proposed that an understanding and accepting of thoughts and/or emotions fosters and enhances feelings of internal value and worthiness. Liberation, as an inversion of other Blame, was defined as a survivors' ability to release or set oneself free from the control, imprisonment, and/or oppression of their trauma and to live a life in which they feel capable and confident to make positive decisions for themselves and others. Positive Self, as an inversion of Negative Self, has been defined as the presence of positive cognitions of the self that generate feelings of care, compassion, and/or comfort towards oneself. Several additional items were developed during the item generation phase that were derived from the constructed domain definitions of Validation, Liberation, and Positive Self.

A panel of five experienced clinicians and researchers were engaged to evaluate each item for content relevance, representativeness, and technical quality. To assess content relevance and representativeness, clinicians were asked to provide feedback on each item's perceived fit within the created domains and the items capacity to elicit a response consistent with the provided domain definitions (Haynes et al., 1995).

Table 22*Item Development and Positive Reframing of Items from the TRSI-IC, PTCI-NS, and CERQ-OB subscales*

Items from existing scales	Positive reframing of items
TRSI – Internal Condemnation	Validation
As a result of my traumatic experience, I have lost respect for myself	I respect myself
As a result of my traumatic experience, there are parts of me that I want to get rid of	I accept all parts of myself
Because of my traumatic experience, I feel inferior to others	I feel like an equal in the presence of others
As a result of my traumatic experience, I find myself less desirable	I am worthy of love
As a result of my traumatic experience, I don't like myself	I like myself
As a result of my traumatic experience, I cannot accept myself	I am proud of myself
PTCI - Negative Self	Positive Self
I have permanently changed for the worse	I have changed for the better
I feel like an object, not like a person	I know my worth as a person
I feel isolated and set apart from others	I feel connected to others
I have no future	I have hope for my future

Table 22 (continued).

My life has been destroyed by the trauma	I have overcome my traumatic experiences
I am a weak person	I am a strong person
I cant deal with even the slightest upset	I can cope with life's ups and downs
I am inadequate	I am enough
There is something wrong with me as a person	I am a worthy person
I cant rely on myself	I can rely on myself
	I have a positive attitude towards myself
	I see myself as a capable person

CERQ - Other Blame	Liberation
I feel that others are to blame for it	I am more than my trauma
I feel that others are responsible for what has happened	I am responsible for my actions and my reactions
I think about the mistakes others have made in this matter	I choose to focus on myself and my future
I feel that basically the cause lies with others	I am in control of my life and my decisions
	I feel empowered to pursue my goals
	I feel free to make my own decisions

Technical quality was assessed through a review of each item's readability, phrasing, and perceived suitability for the anticipated population. The main objective of this step was to establish a consensus on the expression and distinction between the identified domains for recovery, and the applicability of the proposed items to achieve this outcome (Haynes et al., 1995). Following expert review, 24 items were selected and used to create an item pool that represented positive statements of the self following the experience of interpersonal trauma (see Table 22).

Step Three: Measurement and Response Format. To maintain consistency with other measures used for assessing trauma symptomatology (i.e., PCL-5, TRSI, CERQ), a Likert-type response format was selected. Respondents are asked to *“Please consider how you have thought and felt about yourself over the last week and indicate the degree to which you believe the statements provided below are true for you.”* As items included in the measure reflect self-statements, the format of *“1 = Totally Agree”* to *“5 = Totally Disagree”* was selected, with lower scores indicating a greater agreement with the presented item.

Step Four: Expert Consultation. The developed item pool was presented to 10 Clinical Psychologists recruited from university, public hospital, private hospital, and community settings. Experts were recruited based upon their experience working with the target population and within the intended administration settings. The item pool was examined for construct relevance, conciseness, item clarity, phrasing, and foreseeable implementation difficulties. Obtained feedback indicated that all 24 items were deemed to be relevant to the construct, presented clearly and concisely, and were perceived to be non-threatening in nature. Minor phrasing changes were suggested and implemented for four of the 24 items (for example: *“I can deal with life's ups and downs”* was amended to *“I can cope with life's up and downs”*). Feedback also indicated that reducing the scale to 18 items or less would make implementation within primary care more feasible.

Step Five: Item Refinement. To identify any phrasing and/or structural difficulties that may impact comprehension or scale completion, the 24-item instrument was piloted with a sample of five trauma survivors from a convenience sample (see Figure 12). To determine the suitability of the items, participants were asked to give qualitative feedback on whether the items were clear and comprehensible (i.e., whether the language, terminology, and phrasing was appropriate), well defined (i.e., measured individual symptoms), and acceptable (i.e., level of comfort with items and response format). Participants in the pilot review reported the items to be clearly phrased and relevant to their experience. Participants indicated some difficulties with the response format, suggesting that the scale items (i.e., “*totally agree*” to “*totally disagree*”) did not “sit well” and were “somewhat confusing” when interpreting items within their perception of self.

Step Six: Scale Refinement. A review of the provided feedback indicated that an alteration in the response format might provide a clearer, more acceptable means of measurement for this population. The Likert format was altered to reflect these changes and the scale of “5 = *True of me*” to “1 = *Untrue of me*” was chosen for the measurement of self-statements. In line with the positive phrasing of the scale, it was deemed important that item scoring commenced with positive ratings before the more negative rating options (i.e., items scored from “5” to “1”). Following the implementation of necessary and recommended amendments, a 24-item, self-report scale with a positively scored, Likert-type response format remained (see Figure 12).

Scoring for the measure involves summing the scores for individual items, with total scores ranging from 120 to 24. Subscale scores are derived from a summation of item scores for items within each subscale (Validation, Positive Self, Liberation), divided by the total number of items in the subscale. Higher total and subscale scores on the TRM are indicative of a greater presence of the measured positive cognitions of Validation, Liberation, and

Positive Self and an overall evaluation of the individuals' recovery journey, with low scores indicating the individual to be in the early stage of recovery and high scores indicating engagement in the late stage of recovery (see Table 23).

Phase Two: Psychometric Evaluation

The purpose of phase two was to evaluate the developed instrument's psychometric properties, examine the utility and appropriateness of the instrument, and determine if further scale refinement was required.

Participants. Adult participants with access to a computer, mobile phone, or tablet device were recruited through social media using a chain sampling method; a nonprobability sampling method using participants to recruit future participants from among their acquaintances (i.e., sharing the survey link with friends or on social media pages), as well as convenience sampling (i.e., researcher dissemination within personal and professional forums). An information statement was provided to the owner/administrator of social media pages that offer information and support to individuals self-identified to have experienced trauma. Gatekeeper approval was sought before dissemination of the online questionnaire. Participants were provided with an explanatory statement at the commencement of the study. This document outlined the nature and purpose of the study, inclusion criteria, possible risks, and benefits to participation, the intended use and storage of data, the requirement for voluntary participation and option to withdraw, and the provision of support services and crisis contact details. Following the statement's provision, participants were asked to acknowledge their understanding of the statement, their knowledge of voluntary participation and freedom to withdraw, and their consent to participate in the study.

The provided participant information statement outlined inclusion criteria specifying participants sought were adult (over the age of 18 years) trauma survivors. Due to the participation of minors within earlier studies of this program of research, additional steps

Figure 12*Trauma Recovery Measure (24-item)***Trauma Recovery Measure**

Please consider how you have thought and felt about yourself over the last week and indicate the degree to which you believe the statements provided below are true for you.

5 = *True of Me* 4 = *Somewhat True of Me* 3 = *Neither True or Untrue of Me*
 2 = *Somewhat Untrue of Me* 1 = *Untrue of Me*

	5	4	3	2	1
1. I respect myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel free to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel connected to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I am in control of my life and my decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I am a strong person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I accept all parts of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I know my worth as a person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I feel empowered to pursue my goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am more than my trauma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am proud of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I have overcome my traumatic experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I am a worthy person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I see myself as a capable person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I am responsible for my actions and my reactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I like myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I have a positive attitude towards myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I have hope for my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I am worthy of love	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I feel like an equal in the presence of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I can rely on myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I choose to focus on myself and my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I am enough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I have changed for the better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I can cope with life's ups and downs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 23*Stages of Trauma Recovery for the TRM*

		Stages of Trauma Recovery		
		Early	Middle	Late
Validation	The individual is working towards an acceptance and approval of themselves and is developing an awareness of thoughts and feelings of internal value and worthiness.	The individual is developing an acceptance and approval of themselves and is able to experience thoughts and feelings of internal value and worthiness.	The individual possesses an acceptance and approval of themselves and frequently experiences thoughts and feelings of internal value and worthiness.	
Liberation	The individual is working towards a personal sense of autonomy and control and is developing an awareness of thoughts and feelings relating to confidence, capability, and self-determination.	The individual is developing a personal sense of autonomy and control and is able to experience thoughts and feelings relating to confidence, capability, and self-determination.	The individual possesses a personal sense of autonomy and control and frequently experiences thoughts and feelings relating to confidence, capability, and self-determination.	
Positive Self	The individual is working towards a strong positive self-identity and is developing an awareness of thoughts and feelings related to care and compassion for themselves.	The individual is developing a strong positive self-identity and is able to experience thoughts and feelings related to care and compassion for themselves.	The individual possesses a strong positive self-identity and frequently experiences thoughts and feelings related to care and compassion for themselves.	

were taken to specify that participation was sought from individuals over 18 years of age. These included bolding the font used to describe inclusion criteria and adding a statement to the research link to advise age requirements. Despite these inclusions, one participant aged 15 years elected to participate in the research study and completed the full online questionnaire. The National Statement of Ethical Conduct in Human Research (2007) has outlined that mature minors (adolescents who have decision-making capacity) can provide consent without additional parental or guardian consent when the young person has the capacity to understand what the research entails. Given this individual assessed the online questionnaire of their own accord, was able to understand the content of the survey, was able to provide valid responses to posed questions and was providing their individual account of trauma exposure, it was deemed appropriate to include their responses in the final data set.

Materials. Participants were provided with access to an online self-report questionnaire composed of demographic questions, standardised assessment measures, and the developed TRM. The measure contained a total of 165 items and took on average 22 minutes to complete. Participants were asked to provide information regarding their age, gender, sexual orientation, and nationality. To ensure the specified inclusion criteria were met, participants were asked to indicate their prior experience of stressful/traumatic life events using the Life Events Checklist (LEC; Weathers et al., 2013). The PCL-5 (Weathers et al., 2013) and K10 (Kessler et al., 2002) were included to assist with the assessment of divergent validity through an evaluation of PTSD and psychological distress symptomatology; and the Self-Compassion Scale (SCS; Neff, 2003) used for evaluation of convergent validity. The subscales of Internal Condemnation, Negative Self, and Other Blame from the TRSI (Oktedalen et al., 2014), PTCI (Foa et al., 1999), and CERQ (Garnefski et al., 2002) respectively, were used to examine the relationship between the identified cognitions of Shame, Blame, and Negative Self and the newly constructed subscales of the TRM.

The Life Events Checklist for DSM-5. The LEC-5 (LEC-5; Weathers et al., 2013) is a self-report measure designed to screen for potentially traumatic events in an individual's lifetime. The Life Events Checklist was originally developed concurrently with the Clinician-Administered PTSD scale for DSM-IV (CAPS; Weathers et al., 2013) for administration prior to the CAPS and was demonstrated to have adequate psychometric properties as a stand-alone measure for the assessment of traumatic exposure. The LEC-5 assesses exposure to 16 events known to potentially result in PTSD or distress and includes one additional item assessing any other extraordinarily stressful event not captured in the first 16 items. The LEC-5 provides an evaluation of single-incident trauma exposure (e.g., *natural disaster, fire/explosion, transportation accident, serious accident*) and varying forms of interpersonal trauma exposure (e.g., *sexual assault, assault with a weapon, captivity, severe human suffering*). Event exposure is assessed across multiple levels and participants are asked to indicate their experience of the 16 events as either having the event "*happen to me,*" "*witnessed it,*" "*learned about it,*" "*part of my job,*" "*not sure,*" and "*doesn't apply.*" Due to the often-cumulative nature of trauma exposure, participants can select multiple exposure levels for each of the identified items.

The psychometric properties of the LEC-5 have been examined in community and trauma-exposed populations and have been demonstrated to be good (Grey et al., 2004). The LEC-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Grey et al., 2004). For this study, the LEC was used to quantify the experience of interpersonal and other non-personal forms of trauma exposure to assist with categorisation and classification of trauma groups within the participant population. In the current study, a reliability analysis of the scale demonstrated the LEC-5 to have excellent internal consistency ($\alpha = .76$).

The Posttraumatic Stress Disorder Checklist for DSM-5. The PCL-5 (PCL-5; Weathers et al., 2013) is a 20-item self-report measure for assessing experiences and symptomatology consistent with the diagnostic criteria provided by the Diagnostic and Statistical Manual of Mental Disorders for Posttraumatic Stress Disorder (DSM-5; APA, 2013). The PCL-5 asks individuals to indicate the frequency of experiences (e.g., *repeated, disturbing, and unwanted memories of the stressful experience*) and symptoms (e.g., *having difficulty concentrating*) of posttraumatic stress over the previous one-month period. The PCL-5 has been demonstrated to have moderate diagnostic accuracy and moderate correlations with the Clinician-Administered PTSD Scale (Weathers et al., 2013), which is considered the gold standard for diagnosing PTSD (Forbes et al., 2001). The PCL-5 is not a diagnostic tool, however, has been validated as a means for screening individuals, contributing to the formulation of provisional PTSD diagnoses, and for monitoring PTSD symptom expression in response to treatment. The PCL-5 provides a total symptom severity score and four DSM-5 symptom cluster scores. Research suggests using a total PCL-5 severity cut-off score of 31 as indicative of probable PTSD (Blevins et al., 2015).

The psychometric properties of the PCL-5 have been examined in community and clinical populations and have been demonstrated to be good (Blevins et al., 2015). The PCL-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Blevins et al., 2015; Bovin et al., 2016). The PCL-5 has demonstrated good internal consistency ($\alpha = .95$; Wortmann, et al., 2016). In the current study, a reliability analysis of the scale demonstrated the PCL-5 to have excellent internal consistency ($\alpha = .95$).

The Trauma Related Shame Inventory. The Trauma Related Shame Inventory (TRSI; Oktedalen et al., 2014) is a 24-item self-report measure of trauma-related thoughts and feelings experienced following exposure to a traumatic experience. The TRSI provides an assessment of total trauma-related shame, as well as four subscale scores. The subscale of

Internal-Condensation (e.g., *“I am ashamed of myself because of what happened to me”*) was used for the development of the items within the TRM. As such, only the Internal Condensation (Shame) subscale and the total scale score will be used for the examination of divergent validity within this study. Examination of the psychometric properties of the TRSI has demonstrated the measure to have good internal consistency ($\alpha = .87$; Oktedalen et al., 2014). Convergent validity with measures of guilt, self-judgement, and PTSD (Oktedalen et al., 2014) has also been demonstrated. In the current study, a reliability analysis of the scale demonstrated the TRSI to have excellent internal consistency ($\alpha = .97$).

The Post-Traumatic Cognitions Inventory. The Post-Traumatic Cognitions Inventory (PTCI; Foa et al., 1999) is a 33-item self-report measure assessing dysfunctional cognitive beliefs following the experience of trauma. The PTCI measures the type of thoughts experienced following exposure to trauma across the three subscales of Negative Cognitions about Self (e.g., *“I am a weak person”*), Negative Cognitions about the World (e.g., *“people can't be trusted”*), and Self Blame (e.g., *“the event happened because of the way I acted”*). The subscale of Negative Self was used for the development of the items within the TRM. As such, only the Negative Self subscale and the total scale score will be used to examine divergent validity within this study.

The construct validity and three-factor structure of the PTCI have been supported across community and clinical populations using factor analysis (Foa et al., 1999). The psychometric properties of the PTCI have demonstrated excellent internal consistency, with Chronbach's alphas reported between .86 to .97 for the three subscales (Foa et al., 1999). Good test-retest reliability has been obtained for total and subscale scores ($\alpha = .75$ to $\alpha = .89$; Foa et al., 1999). The PTCI correlated moderately to strongly with measures of PTSD severity, depression, and general anxiety (Foa et al., 1999). The PTCI compared favourably with other measures of trauma-related cognitions and demonstrated a superior ability to

discriminate between traumatised individuals with and without PTSD (sensitivity = .78, specificity = .93; Foa et al., 1999). In the current study, a reliability analysis of the scale demonstrated the PTCI to have excellent internal consistency ($\alpha = .97$).

The Cognitive Emotion Regulation Questionnaire. The Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2002) is an 18-item self-report tool developed to identify an individuals' use of cognitive coping strategies following the experience of a negative event or situation. The CERQ consists of nine conceptually distinct subscales, each consisting of four items and each referring to an individuals' cognitions following the experience of threatening or stressful life events. The subscale of Other Blame was used for the development of the items within the TRM. As such, only the subscale of Other Blame (Blame) and the total scale score will be used to examine divergent validity within this study. Previous research has demonstrated the sub-scales of the CERQ to have adequate internal consistency (ranging from $\alpha = .68$ to $\alpha = .86$), test-retest reliability, and convergent validity with other measures of trauma and psychological distress (Garnefski, et al., 2001; Garnefski et al., 2002). In the current study, a reliability analysis of the scale demonstrated the CERQ to have acceptable internal consistency ($\alpha = .94$).

The Kessler Psychological Distress Scale. The Kessler Psychological Distress Scale (K10; Kessler et al., 2002) is a 10-item self-report measure of global psychological distress. Items are derived from commonly experienced anxiety (e.g., *“during the last 30 days, about how often did you feel so restless you could no sit still?”*) and depression (e.g., *“during the last 30 days, about how often did you feel so sad that nothing could cheer you up?”*) symptomatology and participants are asked to indicate their level of concern related to their experience of the 10 identified symptoms over the previous 30 day period. Concern is scored on a five-point likert-type scale from *“none of the time”* to *“all of the time.”* Total scores provide an indication of psychological functioning, with scores over 25 indicating a moderate

mental disorder (Andrews & Slade, 2001; Kessler et al., 2002). The K10 is not a diagnostic tool, however, has been validated as a means for screening individuals for psychological distress, assisting with the formulation of provisional diagnoses, and as a tool to monitor psychological functioning and symptom experience in response to treatment (Andrews & Slade, 2001; Kessler et al., 2002). The K10 has demonstrated strong convergent validity with clinician-diagnosed anxiety and mood disorders and significant correlations between total scores on the K10 and the presence of any mental health disorder have been demonstrated (Andrews & Slade 2001). In the current study, a reliability analysis of the scale demonstrated the K10 to have excellent internal consistency ($\alpha = .96$).

The Self-Compassion Scale Short Form. The Self-Compassion Scale (SCS-SF; Neff, 2003) is a 12-item self-report measure developed to explicitly represent the thoughts, emotions, and behaviours associated with the various components of self-compassion. It includes items that measure how often people respond to feelings of inadequacy or suffering with self-kindness (e.g., *“I try to be understanding and patient towards those aspects of my personality I don’t like”*), self-judgement (e.g., *“I’m disapproving and judgemental about my own flaws and inadequacies”*), common humanity (e.g., *“I try to see my failings as part of the human condition”*), isolation (e.g., *“When I fail at something that’s important to me, I tend to feel alone in my failure”*), mindfulness (e.g., *“When something painful happens I try to take a balanced view of the situation”*), and over-identification (e.g., *“When I fail at something important to me I become consumed by feelings of inadequacy”*). Participants are asked to rate how often they behave in the stated manner from *“almost never”* to *“almost always”* with higher scores indicative of greater self-compassion.

The SCS has been demonstrated to be a valid and reliable measure of self-compassion with strong predictive validity for wellbeing, good internal reliability for its total scale ($\alpha = .92$) and subscales ($\alpha = .77$ to $\alpha = .80$) across clinical and community populations (Neff,

2003). The SCS has also shown discriminant construct validity correlating negatively to measures of depression, $r = -.55$ and anxiety, $r = -.66$ (Neff, 2003). The SCS has also shown convergent construct validity with significant positive correlations with life satisfaction, connectedness, and emotional processing measures (Neff, 2003). The SCS-SF will be used for the examination of convergent validity within this study. The SCS-SF demonstrated a near perfect correlation ($r \geq 0.97$) with the SCS when examining total scores (Raes et al., 2011). The factor structure of the SCS was also replicated in the SCS-SF (Raes et al., 2011). The internal consistency of the SCS-SF has been demonstrated to be adequate with a Chronbach's alpha of .86 (Raes et al., 2011). In the current study, a reliability analysis of the scale demonstrated the SCS-SF to have excellent internal consistency ($\alpha = .95$).

Design. To explore and refine the structure of the developed measure and examine its psychometric properties, a two-part data analysis plan was adopted.

Part one: Several statistical procedures were used to explore the latent structure of the developed instrument and reduce the number of scale items as required. Item total and inter-item statistics were examined to assess the fit or contribution of each item in the measure. The construct validity of the measure was assessed through an examination of the underlying factor structure and tests of dimensionality. Item retainment or removal was established following completion and examination of all item reduction analyses.

Part two: To conduct a psychometric evaluation of the developed measure, several statistical procedures were used. To assess the validity of the conceptual model, confirmatory factor analysis was conducted. Internal consistency of the measure was assessed using Chronbach's coefficient alpha (Chronbach, 1951). The ability of the measure to predict future outcomes (i.e., PTSD) was assessed using regression analysis and the construct validity of the measure was assessed through correlation analysis and an evaluation of convergent and discriminant relationships with other identified measurement tools (Boateng et al., 2018).

Results

Data Diagnostics and Assumptions Analyses

Prior to commencing data analyses, several data diagnostics and assumptions were evaluated. A visual review of the data and examination of frequency statistics was conducted to identify missing data, data entry errors, and any assumption violations for the 562 participant responses collected. Missing data analysis identified 118 participants who did not complete the included standardised measurement tools following completion of the demographic questionnaire. This missing data represents a response rate of 79 percent. This study's response rate is defined as the number of individuals achieving full survey completion divided by the number of respondents who did not achieve completion of any of the presented standardised measurement tools (Draugalis et al., 2008). The response rate for this study was identified to fall within the acceptable response rates documented in the literature (Babbie, 1990; Bailey, 1987; Draugalis et al., 2008; Schutt, 1999). Listwise deletion of the 118 participants with missing data for the presented standardised measurement tools was used, with a resulting population sample size of 444. Power analysis using G*Power 3.1 indicated that a minimum sample size of 365 was required for a Goodness of fit analysis with a $df = 24$ (Faul et al., 2007). Given the obtained participant sample contained 444 responses, this data was deemed appropriate for the planned analyses.

Table 24 provides a summation of the distribution data for variables included in the data screening process. Visual examination of stem and leaf displays and box plots demonstrated the data to be roughly symmetrical and bell-shaped, indicating univariate normality within the data set (Tabachnick & Fidell, 2013). Overall evaluation of the skewness for assessed variables indicates the data to be approximately symmetrical and normally distributed (Hair et al., 2017; George & Mallery, 2010; Tabachnick & Fidell, 2013). The obtained scores for Kurtosis are considered acceptable and support the assumption of normal

univariate distribution (George & Mallery, 2010; Hair et al., 2017; Tabachnick & Fidell, 2013). There was no evidence of univariate outliers within the sample data, and as the Mahalanobis distance ($MD = 2.99$) did not exceed the critical value ($\chi^2 = 16.27$; $df = 3$; $\alpha = .001$), multivariate outliers were not identified to be of concern (Howell, 2010).

Table 24

Participant Scores on the TRM, PCL-5, PTCI -NS, CERQ- OB, and TRSI- IC (N = 444).

	<i>M</i>	<i>SD</i>	Min.	Max.	Skewness	Kurtosis
TRM Total	84.13	1.26	30.0	120.00	-.39	-0.93
PCL-5 Total	41.91	0.99	0.00	79.00	-.31	-0.85
TRSI – Shame	13.47	0.29	6.00	24.00	.28	-1.16
PTCI –Negative Self	3.70	0.08	1.00	6.800	-.10	-1.04
CERQ – Blame	5.31	0.15	0.00	10.00	.22	-1.04

Note: M = Mean score; SD = Standard deviation; Min. = Minimum; Max. = Maximum.

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between predictor variables (Negative Self, Blame, Shame, Psychological Distress, Self-Compassion) and the criterion variable (PTSD; see Table 25). Overall, the majority of correlations between variables did not exceed $r = .80$, demonstrating that multicollinearity was not of concern within this data sample (Field, 2009; Tabachnick & Fidell, 2013). Assessed predictor variables were identified to correlate significantly with the criterion variable and all were retained for further analysis. Overall, the results obtained from the completion of data diagnostics and assumption analyses indicate the data obtained from the 444 participants met assumption requirements and was adequate for data analyses.

Table 25*Correlation Matrices for Predictor and Criterion Variables (N = 444).*

	PTSD	Shame	Negative Self	Blame	Psychological Distress	Self- Compassion
PTSD Total	-					
Shame	.71***	-				
Negative Self	.75***	.83***	-			
Blame	.17***	.05	.09	-		
Psychological Distress	.63***	.66***	.79***	.40***	-	
Self-Compassion	-.19***	-.25***	-.40***	.57***	.28***	-

*Note: *** $p < .001$.****Participants***

Participation was obtained from 444 individuals with the self-reported experience of stressful/traumatic life events. Of the 444 participants who completed the online questionnaire, 407 (91.67%) were female, 32 (7.21%) were male, and four (0.90%) identified as non-binary. Participants ranged in age from 15 to 78 years ($M = 41.04$, $SD = 12.17$). Respondents current relationship status was reported with 146 (32.88%) married, 127 (28.60%) single, 97 (21.85%) partnered, 49 (11.03%) divorced, 19 (4.48%) separated, and five (1.13%) reporting themselves to be widowed. Participants were recruited from different nationalities, including Australia, the United States of America, Canada, New Zealand, and the United Kingdom (see Table 26).

Table 26*Participant Demographics and obtained scores on the PCL-5 and TRM (N = 444)*

	<i>n</i>	<i>%</i>	<i>PCL-5 Total</i>		<i>TRM Total</i>	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age						
15-24 years	46	10.36	46.41	21.15	38.07	11.45
25-34 years	84	18.92	44.98	17.09	36.46	11.13
35-44 years	138	31.08	41.78	20.37	38.26	11.55
45-54 years	116	26.13	39.71	19.41	39.88	11.89
55-64 years	43	9.68	38.37	17.69	41.14	10.27
65-74 years	11	2.48	33.63	18.24	41.92	12.58
75 and older	2	0.45	9.00	12.73	48.00	8.49
Sexual Orientation						
Heterosexual	358	80.63	39.63	19.61	39.55	11.46
Homosexual	17	3.83	45.12	18.99	33.53	12.96
Bisexual	47	10.59	49.96	16.35	37.72	10.91
Asexual	8	1.80	53.50	10.46	32.35	9.88
Pansexual	6	1.35	58.33	13.22	34.83	10.50
Not Aligned	7	1.58	53.14	15.14	32.29	11.41
Nationality						
Australia	138	31.08	34.03	18.83	41.50	10.35
USA	161	36.26	46.71	16.76	37.65	11.23
Canada	24	5.41	48.67	19.95	31.71	12.61
United Kingdom	51	11.49	44.82	19.59	37.80	11.58
New Zealand	12	2.70	32.33	21.72	44.50	12.34
Other	56	12.61	42.68	20.58	38.02	12.41

Note: n = number of participants; M = Mean score; SD = Standard deviation

PTSD Symptomatology

PTSD symptomatology was assessed using the PCL-5. Scores obtained from the 444 participants indicate a significant majority (71.40%) of respondents to be experiencing clinically significant PTSD symptomatology as measured using the provided cut-off criteria of the PCL-5 (total score ≥ 31 ; Weathers et al., 2013). There were no statistically significant differences between reported genders upon the experience of PTSD symptomatology ($p = .338$) or total scores on the TRM ($p = .419$). No statistically significant differences were observed for participants across different age ranges on their experience of PTSD symptomatology ($p = 0.059$) or obtained total scores for the TRM ($p = .116$). There were also no statistically significant differences between reported relationship status upon the experience of PTSD symptomatology ($p = .085$) or total scores on the TRM ($p = .162$; see Table 26).

An examination of sexual orientation identified a statistically significant difference between reported sexual orientation upon the experience of PTSD symptomatology, $F(5, 437) = 4.77, p < .001$, with participants identifying as heterosexual scoring significantly lower than other participants. A statistically significant difference was also obtained for participants across sexual orientation upon total scores of the TRM, $F(5, 437) = 2.37, p = .039$; with participants identifying as heterosexual and bisexual scoring significantly higher than participants across the other identified sexual orientations (see Table 26).

A statistically significant difference was also obtained for participants of different nationalities on PTSD symptomatology, $F(5, 436) = 8.66, p < .001$; with participants from Australia scoring significantly lower than participants from the United States of America, Canada, and the United Kingdom (see Table 26). A statistically significant difference was also obtained for participants of different nationalities on total TRM scores, $F(5, 436) = 4.57, p < .001$; with participants from Australia scoring significantly higher than participants from

Canada and the United States of America, and participants from New Zealand scoring significantly higher than those from Canada (see Table 26).

Scale Refinement

Item Reduction Analysis

To examine the appropriateness of the data for factor analysis, several statistical analyses were performed. Pearson's correlations were performed to assess the inter-item relationships between items on the scale. Most inter-item correlations exceeded 0.30, indicating the suitability of the data for factorability (Hair et al., 2010; see Table 28). The Bartlett's test of sphericity (Bartlett, 1954) provides an objective assessment of the correlation matrix's factorability.

A statistically significant chi-square value was obtained ($\chi^2 = 9089.03, p < .001$). The Kaiser-Meyer-Okin (KMO; Kaiser, 1974) measure of sampling adequacy provides an evaluation of shared variance among items and evaluates the suitability of the data for factor analysis (Sofroniou, & Hutcheson, 1999). The obtained KMO value for this data sample was 0.97, with values between 0.80 and 1.0 indicating sampling adequacy (Hoelzle & Meyer, 2013; Lloret et al., 2017). The anti-image correlation matrices indicate the Measure of Sampling Adequacy (MSA) values for the scale between .95 and .98, indicating a strong relationship between items. The results of these analyses indicate the data sample to be suitable for factor analysis.

Factor Analysis

Confirmatory factor analysis using Principal Axis Factoring (PAF) was performed to examine the developed instrument's proposed three-factor structure and to reduce the number of original items (if appropriate; Costello & Osborne, 2005; Fabrigar et al., 1999; Finch & West, 1997). Confirmatory factor analysis was utilised to examine the hypothesised relationship between scale items and the underlying latent subscale construct of the developed

measure (Suhr, 2006; Worthington & Whittaker, 2006).

A forced three-factor PAF revealed two factors with eigenvalues greater than one (Kaiser, 1974), explaining 58.97% and 4.73% of the total variance respectively. In total, the two-factor structure accounted for 63.70% of the variance in the total 24-item instrument. Only the first factor had an eigenvalue greater than two, and visual inspection of the scree plot suggested the retention of only one factor (Cattell, 1966). The three-factor solution however, met interpretability criteria. The three-factor structure explained an additional 3.86% of the total variance and accounted for 67.56% of the total variance in the developed instrument (see Table 27).

Due to the observed correlations between factors, promax oblique rotation was performed for the three-factor solution to aid interpretability (Fabrigar et al., 1999; Tabachnick & Fidell, 2013; see Table 28). Several scale items demonstrated high inter-item correlations, indicating item redundancy within the developed measure (Cohen & Swerdlik, 2005). Items seven, “*I know my worth as a person*” and item 12 “*I am a worthy person*” had a correlation coefficient of $r = 0.78$; item 15 “*I like myself*” and item 16 “*I have a positive attitude towards myself*” reported a correlation coefficient of $r = 0.87$; and item 10 “*I am proud of myself*” and item 22 “*I am enough*” exhibited a correlation coefficient of $r = 0.73$. These six items also demonstrated high communalities with several other items on the scale. Items 12, 16, and 10 reported lower factor loadings than items seven, 15, and 22 respectively, and were removed from follow-up analyses.

An examination of communalities identified item 14 to have very low communalities with other items on the scale and this item was also identified for removal from ongoing analysis. Four items (5, 9, 13, and 19) were identified to cross-load onto two factors and were removed from follow-up analysis.

Table 27*Structure Matrix for PAF with Promax Rotation of a Three-Factor 24-item Scale (N = 444)*

Item	Factor	Factor	Factor	C
	1	2	3	
1. I respect myself	.72			.66
2. I feel free to make my own decisions			.67	.49
3. I feel connected to others			.54	.50
4. I am in control of my life and my decisions			.68	.67
5. I am a strong person	.31	.46		.57
6. I accept all parts of myself	.73			.65
7. I know my worth as a person	.84			.78
8. I feel empowered to pursue my goals			.57	.70
9. I am more than my trauma	.39	.45		.61
10. I am proud of myself	.68			.74
11. I have overcome my traumatic experiences		.301		.52
12. I am a worthy person	.78			.80
13. I see myself as a capable person	.30	.38		.65
14. I am responsible for my actions and my reactions		.39		.23
15. I like myself	.92			.79
16. I have a positive attitude towards myself	.87			.81
17. I have hope for my future		.38		.63
18. I am worthy of love	.80			.67
19. I feel like an equal in the presence of others	.53		.45	.67
20. I can rely on myself		.49		.49
21. I choose to focus on myself and my future		.46		.55
22. I am enough	.69			.72
23. I have changed for the better		.85		.60
24. I can cope with life's ups and downs		.68		.62

Note: C = Communalities

Table 28*Inter-item Correlation Matrix for the TRM (N = 444)*

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1																							
2	.50	1																						
3	.50	.41	1																					
4	.52	.65	.55	1																				
5	.58	.45	.43	.55	1																			
6	.65	.43	.52	.54	.59	1																		
7	.72	.50	.55	.62	.61	.76	1																	
8	.61	.56	.60	.66	.59	.58	.69	1																
9	.59	.43	.45	.56	.61	.61	.64	.60	1															
10	.72	.48	.51	.57	.65	.67	.73	.64	.70	1														
11	.51	.41	.55	.53	.50	.56	.56	.56	.55	.60	1													
12	.73	.45	.52	.58	.65	.65	.78	.64	.70	.79	.58	1												
13	.65	.49	.50	.58	.70	.62	.67	.66	.60	.66	.56	.68	1											

A second forced three-factor PAF was run with the three-factor solution accounting for 70.01% of the total variance for the 16-item measure. Analysis of item loadings on the rotated factor structure identified item three to load across multiple factors. Due to the cross loadings, item three was removed and a third forced three-factor analysis was run with the remaining 15 items (see Table 29).

The PAF with a three-factor solution accounted for 71.64% of the total variance of the 15-item measure, with factors one to three accounting for 59.89%, 6.28%, and 5.47% of the total variance respectively. Interpretation of the three-factor structure is consistent with the proposed structure of the TRM, with factor one to three representative of the Validation, Positive Self, and Liberation subscales respectively (see Table 29).

Model Fit Analysis

Results of the CFA for the modified 15-item, three-factor model showed an adequate overall model fit. A calculation of the Root Mean Square Error Approximation (RMSEA; Steiger, 1990) evaluated absolute model fit. The RMSEA was found to be .076. RMSEA scores approaching 0 are preferred, with RMSEA scores under 0.08 considered to be representative of acceptable model fit (Hu & Bentler, 1999). The Comparative Fit Index (CFI; Bentler, 1990), Bollen's Incremental Fit Index (IFI; Bollen, 1990), and the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) also demonstrated relative model fit (CFI = 0.95; IFI = 0.95; TLI = 0.94); with scores equal to or greater than .90 indicative of acceptable model fit (Bentler 1990; Muthén & Muthén, 2015).

Scale Structure

Overall, nine items were removed from the original 24-item scale, resulting in a 15-item self-report measure of Trauma Recovery (see Figure 13). Item loadings within the 15-item scale are consistent with the underlying factor structure proposed in the development of the measure (see Figure 14).

Table 29*Structure Matrix for PAF with Promax Rotation of a Three-Factor 15-item Scale (N = 444).*

Item	Factor	Factor	Factor
	1	2	3
1. I respect myself	.76		
2. I feel free to make my own decisions			.81
3. I am in control of my life and my decisions			.77
4. I accept all parts of myself	.77		
5. I know my worth as a person	.91		
6. I feel empowered to pursue my goals			.45
7. I have overcome my traumatic experiences		.51	
8. I like myself	.85		
9. I have hope for my future		.59	
10. I am worthy of love	.79		
11. I can rely on myself		.38	
12. I choose to focus on myself and my future		.47	
13. I am enough	.66		
14. I have changed for the better		.77	
15. I can cope with life's ups and downs		.89	

Figure 13

Trauma Recovery Measure (15-item)

Trauma Recovery Measure

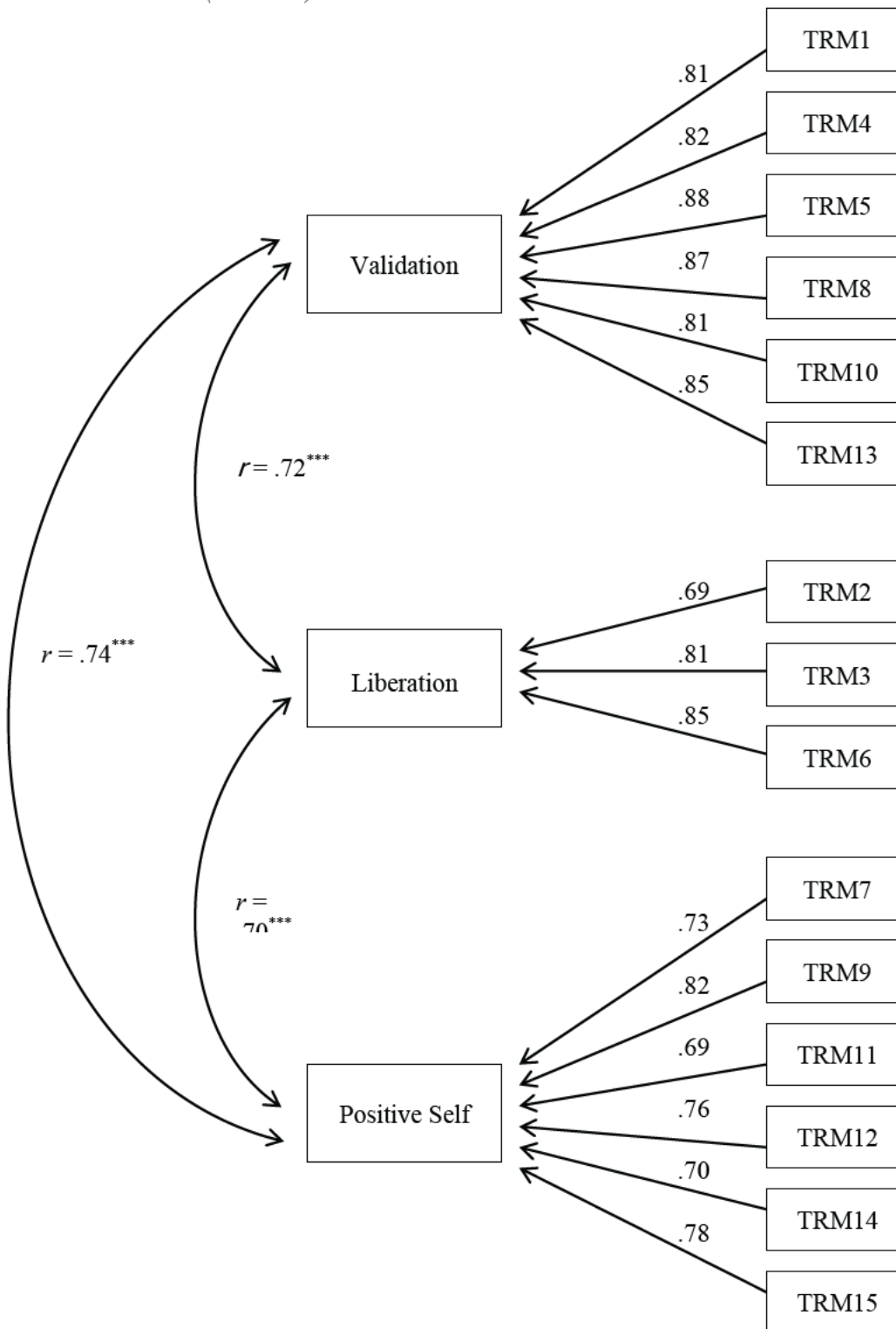
Please consider how you have thought and felt about yourself over the last week and indicate the degree to which you believe the statements provided below are true for you.

5 = True of Me 4 = Somewhat True of Me 3 = Neither True or Untrue of Me
2 = Somewhat Untrue of Me 1 = Untrue of Me

	5	4	3	2	1
1. I respect myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel free to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am in control of my life and my decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I accept all parts of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I know my worth as a person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel empowered to pursue my goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I have overcome my traumatic experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I like myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I have hope for my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am worthy of love	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I can rely on myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I choose to focus on myself and my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am enough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I have changed for the better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I can cope with life's ups and downs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 14

Standardised Regression Weights and Correlation Coefficients for the Three-Factor Model of the 15-item TRM (N = 444)



Note: r = correlation coefficient; $^{***} p < .001$

Psychometric Properties of the TRM

Internal Consistency

Reliability analyses were performed to examine the internal consistency of the TRM. Results revealed a Chronbach's alpha of 0.95, indicating the 15-item instrument to have a high level of internal consistency (Tabachnick & Fidel, 2013). Inspection of the corrected-item total did not identify any further items for removal. Examination of the alpha, if-item-deleted scores, failed to indicate an item that if removed, would improve the overall reliability of the scale, demonstrating coherence between the items of the scale and providing support for the TRM as a consistent measure Trauma Recovery (Tabachnick & Fidel, 2013). The reliability for the sub-scales of Liberation ($\alpha = .83$), Validation ($\alpha = .93$), and Positive Self ($\alpha = .88$) were also identified to be adequate.

Construct Validity

The construct validity of the TRM was assessed through an assessment of Pearson product-moment bivariate correlation analyses and an evaluation of convergent and discriminant relationships with other identified measurement tools (Boateng et al., 2018). Statistically significant ($p < .001$) large negative correlations were identified between total scores on the TRM and total scores on the PCL-5, TRSI, PTCI, and K-10 (see Table 30). No statistically significant correlation was observed between total scores on the TRM and the CERQ-OB. A small significant positive correlation between total scores on the TRM and the SCS-SF was observed (see Table 30), indicating a convergence between Self-Compassion and Trauma Recovery. Correlations between the subscales of Validation, Liberation, and Positive Self and the corresponding subscales from which they were derived (TRSI-IC, CERQ-OB, and PTCI-NS respectively) were demonstrated to be significant (see Table 30).

Table 30

Summary of Correlations between the TRM and the TRSI, PTCI, CERQ, K10, and SCS (N = 444).

	TRM Total	TRM-V	TRM-L	TRM-PS
PTSD	-.70***	-.67***	-.59***	-.66***
TRSI Total	-.69***	-.71***	-.55***	-.59***
PTCI Total	-.77***	-.75***	-.64***	-.70***
CERQ Total	-.022	-.01	-.04	-.03
K-10 Total	-.60***	-.56***	-.53***	-.56***
SCS Total	.25***	.28***	.17***	.21***
Shame	-	-.79***	-	-
Blame	-	-	-.098*	-
Negative Self	-	-	-	-.74***

*Note: *** $p < .001$; * $p < .05$.*

The subscale validity of the TRM was assessed through an analysis of Pearson's product-moment correlation coefficients between subscale scores of the TRM (see Table 31). The results from this analysis indicate significant strong positive correlations between the three subscales of Validation, Liberation, and Positive Self and indicate the subscales to be valid measures of their respective constructs within a population of trauma survivors.

A series of regression analyses were conducted to further examine the relationship between the developed subscales and the constructs from which they were derived. Validation was demonstrated to account for a statistically significant 63% of the variability in scores obtained on the Shame (TRSI-IC) subscale, $R^2 = 0.66$, $F(1, 414) = 706.29$, $p < .001$; and Positive Self accounted for a significant 55.3% of the variability in scores obtained on the

negative Self (PTCI-NS) subscale, $R^2 = 0.55$, $F(1, 388) = 479.46$, $p < .001$. Liberation was demonstrated to account for a statistically significant 1% of the variability in scores obtained on the Blame (CERQ-OB) subscale, $R^2 = 0.01$, $F(1, 442) = 4.31$, $p = .039$.

Table 31

Correlation Matrix for the Three Factors of the 15-item TRM (N = 444).

Factor	Validation	Liberation	Positive Self
Validation	-		
Liberation	.78***	-	
Positive Self	.74***	.75***	-

*Note: *** $p < .001$.*

Criterion Validity

A between-groups analysis of variance (ANOVA) was used to compare total scores on the TRM between participants who met the criteria for clinically significant PTSD symptomatology as measured using the PCL-5 cut-off criterion (total score ≥ 31 ; Weathers et al., 2013; see Table 32) and participants who did not meet cut-off criteria. Statistically significant differences were observed on TRM total scores, $F(1, 441) = 220.04$, $p < .001$, and across the three subscales of Validation $F(1, 441) = 197.98$, $p < .001$, Liberation, $F(1, 441) = 142.81$, $p < .001$, and Positive Self $F(1, 441) = 167.82$, $p < .001$. Participants with clinically significant PTSD symptomatology scored significantly lower than participants without clinically significant PTSD symptomatology (see Table 32), demonstrating the capacity of the TRM to differentiate between individuals exhibiting clinically significant PTSD symptomatology and those with lower or sub-threshold PTSD symptoms.

Table 32

Obtained scores on the TRM for participants according to PCL-5 diagnostic criteria (N = 444)

	Meets criteria			Does not meet criteria			<i>F</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
TRM Total	316	46.52	14.20	127	66.35	7.88	220.04***
Validation	316	2.92	1.12	127	4.40	.60	197.98***
Liberation	316	3.16	1.08	127	4.40	.68	142.81***
Positive Self	316	3.25	.99	127	4.46	.54	167.82***

*Note: n = Sample size; M = Mean; SD = Standard deviation, *** $p < .001$.*

A further ANOVA was employed to examine individual item scores on the TRM between participants who met clinically significant PTSD symptomatology criteria as measured using the PCL-5 cut-off criterion (total score ≥ 31 ; Weathers et al., 2013) and participants who did not meet cut-off criteria. Statistically significant differences were observed across all scale items (see Table 33), indicating each item on the scale to be an independent predictor of PTSD for this population group.

Table 33

ANOVA for items of the TRM and participants with and without clinically significant PTSD symptomatology (N = 444)

		<i>Sum of</i>		<i>Mean</i>	
		<i>Squares</i>	<i>df</i>	<i>Square</i>	<i>F</i>
1. I respect myself	BG	150.03	1	150.03	110.66***
	WG	597.90	441	1.36	
2. I feel free to make my own decisions	BG	83.63	1	83.63	72.26***
	WG	510.40	441	1.16	
3. I am in control of my life and my decisions	BG	147.98	1	147.98	109.36***
	WG	596.76	441	1.35	
4. I accept all parts of myself	BG	218.98	1	219.98	130.55***
	WG	739.75	441	1.68	
5. I know my worth as a person	BG	252.40	1	252.40	179.95***
	WG	618.56	441	1.40	
6. I feel empowered to pursue my goals	BG	190.09	1	190.09	114.64***
	WG	731.24	441	1.66	
7. I have overcome my traumatic experiences	BG	250.83	1	250.83	162.07***
	WG	682.53	441	1.55	
8. I like myself	BG	221.26	1	221.26	156.66***
	WG	622.86	441	1.41	
9. I have hope for my future	BG	170.96	1	170.96	117.88***
	WG	639.57	441	1.45	

Table 33 (continued).

10. I am worthy of love	BG	163.91	1	163.91	112.60***
	WG	641.97	441	1.46	
11. I can rely on myself	BG	94.74	1	94.74	66.79***
	WG	625.56	441	1.42	
12. I choose to focus on myself and my future	BG	103.84	1	103.84	78.90***
	WG	580.41	441	1.32	
13. I am enough	BG	196.20	1	196.20	123.52***
	WG	700.47	441	1.59	
14. I have changed for the better	BG	67.91	1	67.91	49.33***
	WG	607.04	441	1.38	
15. I can cope with life's up and downs	BG	142.21	1	142.21	101.73***
	WG	616.51	441	1.40	

Note: *** $p < .001$; BG = Between Groups; WG = Within Groups.

The ability of the TRM to predict psychological distress and dysfunction was assessed using regression analysis. The 15-items of the TRM were demonstrated to account for a statistically significant 54.4% of the variability in scores obtained on the PCL-5, $R^2 = 0.54$, $F(15, 428) = 34.03$, $p < .001$ (see Table 34). Using Cohen's (1988) conventions, the effect size can be considered large ($f^2 = 1.17$).

Table 34*Regression Coefficients for 15-item TRM Predicting PTSD*

	<i>Unstandardised</i>		<i>Standardised</i>
	<i>Coefficients</i>		<i>Coefficients</i>
	β	<i>Std. Error</i>	β [95% CI]
1. I respect myself	-0.65	0.82	-0.04 [-2.26, 0.96]
2. I feel free to make my own decisions	-0.75	0.76	-0.5 [-2.24, 0.74]
3. I am in control of my life and my decisions	0.09	0.79	0.01 [-1.46, 1.63]
4. I accept all parts of myself	-0.64	0.73	-0.05 [-2.07, 0.80]
5. I know my worth as a person	-2.11***	0.92	-0.15 [-3.92, -.30]
6. I feel empowered to pursue my goals	-1.00	0.75	-0.07 [-2.46, 0.47]
7. I have overcome my traumatic experiences	-3.86***	0.63	-0.29 [-5.10, -2.63]
8. I like myself	-1.54*	0.87	-0.11 [-3.25, 0.17]
9. I have hope for my future	-1.40*	0.81	-0.10 [-2.98, 0.18]
10. I am worthy of love	-0.78	0.80	-0.05 [-2.36, 0.80]
11. I can rely on myself	-0.60	0.69	-0.04 [-1.95, 0.75]
12. I choose to focus on myself and my future	1.10	0.82	0.07 [-0.51, 2.70]
13. I am enough	0.31	0.86	0.02 [-1.38, 2.00]
14. I have changed for the better	0.79	0.73	0.05 [-0.63, 2.22]
15. I can cope with life's ups and downs	-1.21*	0.78	-0.10 [-2.94, 0.12]

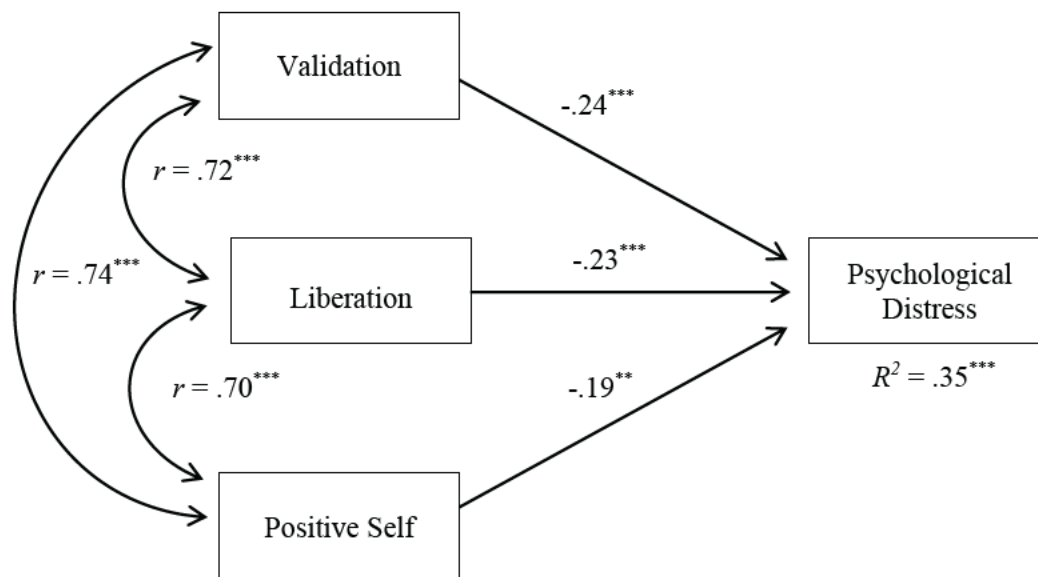
Note: *** $p < .001$; * $p < .05$

A regression analysis was conducted to examine the predictive capacity of the individual subscales of the TRM upon psychological distress. In combination, the three

subscales of Validation, Liberation, and Positive Self accounted for a statistically significant 35% of the variability in symptoms of psychological distress, $R^2 = 0.35$, $F(3, 440) = 82.46$, $p < .001$ (see Figure 15). Using Cohen's (1988) conventions, the effect size can be considered large ($f^2 = 0.54$).

Figure 15

Regression Analysis for the Three-Factor TRM and Psychological Distress (N = 444)

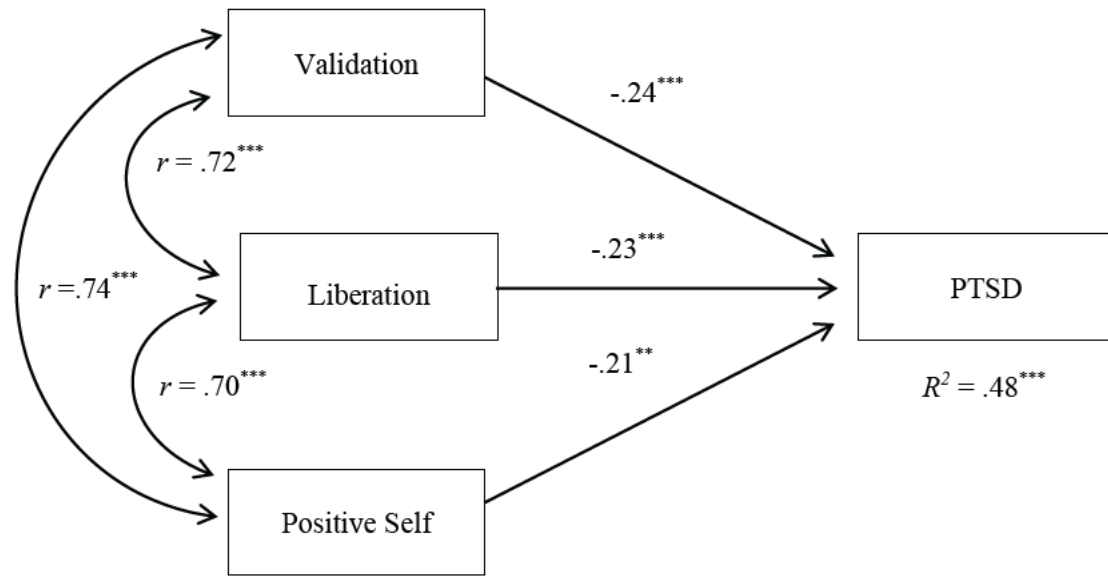


Note: $^{***} p < .001$; $^{**} p < .01$

A regression analysis was conducted to examine the predictive capacity of the individual subscales of the TRM upon PTSD symptom expression. In combination, the three subscales of Validation, Liberation, and Positive Self accounted for a statistically significant 48.1% of the variability in PTSD scores, $R^2 = 0.48$, $F(3, 440) = 135.76$, $p < .001$ (see Figure 16). Using Cohen's (1988) conventions, the effect size can be considered large ($f^2 = 0.93$).

Figure 16

Regression analysis for the Three-Factor TRM and PTSD (N=444)



Note: $^{***} p < .001$; $^{**} p < .05$

Discussion

The overall aim of the current study was two-fold, to develop a measurement tool to assess Trauma Recovery and to evaluate its utility and psychometric properties for a heterogeneous sample of interpersonal trauma survivors. To meet the first aim of this study, the TRM was designed as an assessment tool for evaluating Trauma Recovery following exposure to interpersonal trauma. The TRM is comprised of 15-items across the three domains of Validation, Liberation, and Positive Self. The validity and utility of the TRM were evaluated on a community population of self-identified interpersonal trauma survivors and demonstrated to be a valid measure of Trauma Recovery.

An examination of the descriptive data identified a significant proportion of the population sample (71.40%) to be currently experiencing clinically significant PTSD symptomatology following the experience of traumatic events. These results are consistent with previous research that has demonstrated the reported experience of PTSD following

trauma exposure to occur at rates between 31 to 84.4 percent across measured population samples (Black et al., 2011, Iverson et al., 2011; Koenen et al., 2017; Rees et al., 2011; Stein et al., 2001). Within the current study, a significant proportion of participants identified as female (91.67%). Despite the low numbers of male (7.21%) and non-binary (0.90%) participants, there were no observed differences between the genders on the reported experience of PTSD symptom expression or upon Trauma Recovery. These findings are consistent with the data obtained in the previous study (see chapters four and five) and previously published research (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000), which has demonstrated non-significant differences between the genders following exposure to interpersonal violence upon the experience and expression of PTSD symptomatology. This finding is also suggestive that the experience of recovery following exposure to interpersonal trauma is experienced similarly for survivors, regardless of their gender.

The age of participants was not identified as a significant determinant of PTSD symptom expression or recovery for survivors of interpersonal trauma. Participants' relationship status was also a non-significant determinant of PTSD symptom expression or recovery within this population sample. This outcome appears to be inconsistent with aspects of both the proposed Thriving Model of Recovery (O'Leary & Ickovics, 1995) and the Ecological Model of Trauma Recovery (Harvey, 1996), which propose PTSD symptom mitigation and Trauma Recovery to be supported and/or enhanced through the mobilisation of social resources and an increase in safe attachment and social support. Within these models, participants currently involved in a non-violent, committed relationship (i.e., partnered, engaged, married) would be expected to exhibit lower rates of PTSD symptomatology and higher scores on recovery measures. As this outcome was not observed within this participant sample, the effectiveness of social supports in facilitating recovery has not been demonstrated

within this study. However, as social attachment and resource utilisation were not measured directly, further examination of the relationships between Trauma Recovery, relational attachments, and social support is needed to evaluate the validity of these proposed recovery models.

The sexual orientation of participants was identified to differentiate between the experience of PTSD symptomatology and Trauma Recovery. Individuals identifying as heterosexual reported significantly fewer PTSD symptoms following trauma exposure than participants identifying within other sexuality groups. Participants identifying as either heterosexual or bisexual scored significantly higher on Trauma Recovery than participants within the other assessed sexual orientation groups. This outcome is consistent with the results of the previous study (see chapter five) and previous research that has identified marginalised population groups to report higher rates of discrimination, prejudice, and adverse mental health outcomes following the experience of trauma (Lorenzetti et al., 2015; O'Halloran, 2015; Roch et al., 2010). In a survey of lesbian, gay, bisexual, and transgender individuals (Pew Research Centre, 2013) participants identifying as bisexual were less likely to experience discrimination and more likely to feel a sense of social acceptance, than homosexual or transgender respondents. The outcomes of this current study are consistent with the data obtained in this survey, as no significant differences were observed between heterosexual and bisexual identifying participants.

It is proposed that the differences in PTSD symptom expression and Trauma Recovery exhibited by participants of minority sexualities within this study (i.e., homosexual, asexual, pansexual, and not aligned) is likely reflective of continuing social prejudices, additional psychosocial stressors experienced due to these social prejudices, and the current unavailability and inaccessibility of services and supports for non-heterosexual survivors of interpersonal violence (Balsam et al., 2005; Borgogna et al., 2018; Jacomb et al., 2002; Kerr

et al., 2013; King et al., 2008; Meyer, 2003; Roch et al., 2010; Ross et al., 2018; Turell, 2000; Wadsworth & Hayes-Skelton, 2015). The outcomes from this study highlight the differential attainment of Trauma Recovery for individuals across sexual identity groups and the need for further research examining the unique needs and mental health outcomes for individuals within these minority groups.

Consistent with the results of the previous study (see chapter five), a significant difference was observed between Australian and North American (i.e., United States of America and Canada) participants on both the expression of PTSD symptomatology and of Trauma Recovery; with Australian nationals reporting significantly less PTSD symptomatology and higher scores for Trauma Recovery. Participants from the United Kingdom were also identified to experience higher rates of PTSD symptom expression than Australian nationals however, no significant differences were observed for Trauma Recovery within these two nationality groups. New Zealand nationals were identified to achieve higher scores on Trauma Recovery compared to Canadian nationals despite no significant differences being observed within scores for PTSD within these two nationality groups. Higher prevalence rates of PTSD following interpersonal trauma exposure for North American samples have been consistently documented within the literature (Creamer et al., 2001; Koenen et al., 2017; Sareen, 2020; Stein et al., 2007) with differences proposed to be resultant from individual and societal factors (Sareen, 2020).

At the time of data collection for this study, a global health emergency resulting from the human-to-human transmission of the coronavirus disease had been enacted, with Asia, Europe, and North America identified as the most affected pandemic outbreak areas (Zhu et al., 2020). Coronavirus has been identified as a global pandemic resulting in negative impacts upon physical health, mental health, and sociocultural wellbeing (Vigo et al., 2020; Zhu et al., 2020). At the time of writing (22nd of February 2021), there were 110.75 million confirmed

cases and 2.46 million confirmed deaths from coronavirus globally, with approximately 25.01% of cases and 20.04% of deaths occurring in the United States of America (Johns Hopkins University & Medicine, 2021). It is hypothesised that the ongoing impacts of the coronavirus may have further contributed to the already increased prevalence of trauma exposure and PTSD within the North American population sample and resulted in the observed differences between participants within this sample. Similarly, the higher prevalence rates of coronavirus in Europe may have contributed to the observation of higher PTSD scores for individuals residing in the United Kingdom. Emerging research is documenting and examining the impact of the coronavirus pandemic globally and is likely to provide increased knowledge and understanding relating to the impact of this pandemic upon individuals and their experience of trauma and PTSD during these unprecedented times.

Psychometric Properties of the TRM

Consistent with hypothesis one, the TRM demonstrated an acceptable factor structure and adequate overall model fit, with the 15-items loading onto the three factors of Validation, Liberation, and Positive Self. The internal consistency of the TRM total and subscale domains were demonstrated to meet the requirements for adequate reporting. These outcomes provide support for hypothesis two and the underlying factor structure of the TRM, indicating the TRM to be a consistent measure Trauma Recovery. The construct validity of the TRM (total and subscale domains) was demonstrated through the attainment of large negative relationships between obtained scores on the TRM and validated measures of trauma-related psychopathology. As described in hypothesis three, Trauma Recovery was inversely related to PTSD symptom expression, posttrauma shame cognitions, posttrauma blame cognitions, posttrauma negative cognitions, and psychological distress. A small positive relationship between the TRM and self-compassion was also identified, demonstrating a convergence between Trauma Recovery and self-compassion, supporting hypothesis four.

Significant negative relationships were demonstrated between the subscale domains of Validation, Liberation, and Positive Self, and the three subscales from which they were derived. The results obtained from this study demonstrated the subscales of Validation, Liberation, and Positive Self to account for a significant proportion of the variance in obtained scores for Shame, Blame, and Negative Self respectively, indicating the items of the TRM to be reflective of the definitions and criteria from which they were developed. The outcomes from the validity analysis provide support for hypothesis five and demonstrate the TRM to be a valid measure of Trauma Recovery across the three domains of Validation, Liberation, and Positive Self.

The TRM was demonstrated to exhibit a capacity to differentiate between exposure to non-personal and interpersonal forms of trauma exposure. Individuals with previous exposure to each of the assessed interpersonal trauma typologies (i.e., IPV, physical assault, assault with a weapon, sexual assault, unwanted sexual experiences, and severe human suffering) were identified to score significantly lower on the TRM than participants without previous exposure to interpersonal trauma. Significant differences were also identified between participants with previous exposure to interpersonal trauma compared to participants exposed to non-personal trauma typologies upon the attainment of Trauma Recovery. Consistent with hypothesis six, the specificity of the TRM to differentiate between participants with and without clinically significant PTSD symptomatology was also demonstrated, with total, subscale, and individual item scores all demonstrated to be independent predictors of PTSD.

Consistent with hypothesis six, the specificity of the TRM to differentiate between participants with and without clinically significant PTSD symptomatology was also demonstrated, with total, subscale, and individual item scores all demonstrated to be independent predictors of PTSD. Overall, the TRM was demonstrated to be a significant predictor of both psychological distress and PTSD, with the three domains and the individual

items of the TRM accounting for a significant proportion of the variance in reported symptomology for each condition.

Limitations and Implications for Future Research

The current study extends the literature by examining the TRM and its validity for assessing Trauma Recovery within a heterogeneous population of trauma survivors. There are however, several limitations worth noting that are a direct result of the research aims and methodology. Whilst the data for this study was obtained from a varied population sample, it is acknowledged that there was a low response rate for non-female identifying individuals and minority and marginalised gender and sexuality groups. The small number of participant responses obtained within individual groups restricts the generalisability of research outcomes across all gender and sexuality domains. Similarly, participant representation was largely obtained from western countries. As such, generalisability is limited to individuals within these nations. As this is one of the first known studies to examine Trauma Recovery across varying trauma typologies and population groups, the results obtained in this study provide a foundation from which further research can be conducted. A widening of the geographical scope of participation may provide an enhanced understanding of interpersonal trauma survivors' needs and provide further support for the TRM and its utility across an inclusive population sample.

As discussed in the previous chapter, the use of an online sampling method contributes to the identified study limitations. Due to the absence of face-to-face contact and the anonymity of participation, there is no way to assess the validity of participant responses on the provided standardised measurement tools. Online data collection methodology relies on participant self-identification as a survivor of trauma, the identification and quantification of psychosocial symptomatology, and the accurate understanding and interpretation of questionnaire items. These factors inherent to online data collection may potentially result in

the provision of biased responses, participant error, or over/under-reporting of symptomatology. Despite these limitations, online survey methods have been identified to be a cost-effective time-limited means of data collection with the capacity to reach a wide range of participation from samples across geographical locations and to minimise participant desirability bias when compared to other means of data collection (i.e., paper-based or clinician-administered; Evans & Mathur, 2005; Fricker & Schonlau, 2002; Nayak & Narayan, 2019).

The questionnaire itself comprised standardised measurement tools that contained items with the potential to elicit participant distress. Items assessing previously experienced traumatic events were placed at the commencement of the questionnaire, which may have contributed to the early participant discontinuation identified within this study. As the research aim was to examine Trauma Recovery, it was important that participants were able to identify and quantify their experiences of traumatic events and psychological sequelae. However, due to the nature of the participant population being examined (i.e., survivors of trauma) it was equally, if not more important, to minimise the potential for harm and/or distress and empower respondents to withdraw from participation at any time. Previous research examining participant burden within populations of trauma survivors has identified that whilst a subset of participant samples typically reports unanticipated distress or strong negative emotions, the majority of respondents do not negatively evaluate their experience or regret research participation (Newman & Kaloupek, 2004).

The ongoing participation and completion of the full online questionnaire by a significant majority (79%) of individuals who accessed the questionnaire is largely consistent with these research outcomes. As such, it was not deemed appropriate to alter the order of item presentation as a means of minimising participant attrition, nor was it likely to enhance questionnaire completion. Participants engaged in this study were directed to publicly

accessible support groups and contacts should distress be elicited by their participation in this project. Access to direct follow up and support by researchers and ongoing collection of data related to the factors contributing to the experience of distress and/or drop out (i.e., specific items) would likely provide enhanced insight into the factors that contribute to participant attrition and research burden and provide practical steps to obtain much-needed data whilst supporting the needs and wellbeing of participants.

Due to the absence of current validated means of assessment for Trauma Recovery, validation of the TRM within this study has its limitations. The validity of the TRM was determined through an evaluation of its relationship to trauma-related psychopathology. This program of research has defined Trauma Recovery as an individual process of cognitive, emotional, and behavioural adaptation and change resulting in the attainment of intrapersonal mastery, empowerment, and hope for oneself and the future. Within this context, recovery from trauma does not imply a return to premorbid functioning levels or the eradication of trauma-related psychopathology, but rather proposes a process of intrapersonal development and understanding that promotes hope and personal wellbeing through adaptive changes within identified domains. As such, the assessment of trauma-related psychopathology as a means of evaluating the TRM provides an approximation of its validity, and additional research is required to further validate the TRM.

Conclusion

The findings of the current study provide preliminary evidence demonstrating the TRM to be a reliable and valid instrument for the assessment of Trauma Recovery for survivors of interpersonal trauma. Overall, the TRM demonstrated an adequate factor structure and overall model fit, excellent internal consistency, and adequate construct, content, and criterion validity. Given the high rates of interpersonal trauma exposure and PTSD symptom expression identified within the population sample, the need for a validated

and evidence-based measurement tool to assess and support recovery is vital. Not only does the TRM provide an opportunity to assess Trauma Recovery, but its strong inverse relationship to trauma-related psychopathology also demonstrates the capacity of the TRM to measure a change in response to treatment, without the need for directly assessing trauma-related psychopathology. Finally, ongoing application and utilisation of the TRM within research and clinical settings may encourage a unified research approach to the assessment and evaluation of Trauma Recovery.

Chapter Six

Psychometric Examination of the Cognitive Model of Trauma Recovery

For Survivors of Interpersonal Trauma

Chapter Overview

The results from the empirical studies presented in chapters three and four identified the significant role of posttrauma cognitions in the maintenance of PTSD for survivors of interpersonal trauma. The role of these posttrauma cognitions as an impediment to Trauma Recovery has also been proposed. The literature review provided in chapter two identified the limitations of current models and theories in their conceptualisation of Trauma Recovery. It also highlighted the absence of a psychometrically validated Trauma Recovery model that identifies and describes the significant role of posttrauma cognitions in Trauma Recovery. This chapter defines Trauma Recovery and describes the Cognitive Model of Trauma Recovery (CMTR) that was developed utilising the obtained outcomes from previous studies within this program of research. The methodology and results of the psychometric evaluation undertaken for a community sample of interpersonal trauma survivors are then provided. Finally, the outcomes of this study and implications for clinical practice and the overall research project are discussed.

Introduction

Epidemiological research has demonstrated exposure to traumatic events to be a common human experience, with most individuals experiencing at least one traumatic event throughout their lifetime (Breslau & Kessler, 2001; Kessler et al., 1995; McLaughlin et al., 2013). For most individuals, posttraumatic reactions including, intrusive cognitions and autonomic arousal are experienced within hours to days of event exposure and spontaneously remit as the individual processes and develops an understanding of their experience (APA, 2017; Nugent et al., 2009; Rothbaum et al., 1992). For some individuals, these trauma

reactions persist and develop into clinical symptoms, eliciting psychological distress, the adoption of maladaptive coping strategies, and creating impairment across various areas of functioning (APA, 2013). Individuals with the persistent experience of these symptoms typically attract a clinical diagnosis of PTSD and require clinical treatment to assist with symptom management and to support Trauma Recovery (APA, 2013).

Exposure to interpersonal trauma is proposed to result in unique cognitive changes that are not typically observed for other non-personal forms of trauma exposure. These cognitive changes have been demonstrated to contribute to the development and maintenance of PTSD symptomatology and identified as an impediment to recovery (Dutton, 1992; Ehlers & Clark, 2000). Exposure to interpersonal trauma has been identified to contribute to deficits in assertiveness, self-efficacy, and self-advocacy and to maintain the activation of the negative posttrauma cognitions of Shame, Blame, and Negative Self (Dutton, 1992; Kubany et al., 2004; Ozer & Bandura, 1990). These cognitive changes have been identified to result in immeasurable impacts upon recovery through alterations to the survivors, perception of themselves, others, and the future (Beck, 1979; Dutton, 1992; Fugate et al., 2005; Janoff-Bulman, 1989; Stark, 2007). The unique experience of the Shame, Blame, and Negative Self cognitions for survivors of interpersonal trauma have been identified within this program of research to maintain the expression of PTSD symptomatology and thus hinder Trauma Recovery.

There is a consensus within the literature that recovery from trauma does not imply a return to premorbid levels of functioning or the eradication of all experienced trauma-related psychopathology, but rather exists as a process of intrapersonal development and understanding that promotes hope and personal wellbeing through adaptive cognitive change (Brewin et al., 1996; Bolton & Hill, 1996; Brewin, 2008; Ehlers & Clark, 2000; Foa et al., 1989; Foa & McLean, 2016; Foa & Rothbaum, 1998; Horowitz, 1976; Janoff-Bulman, 1992;

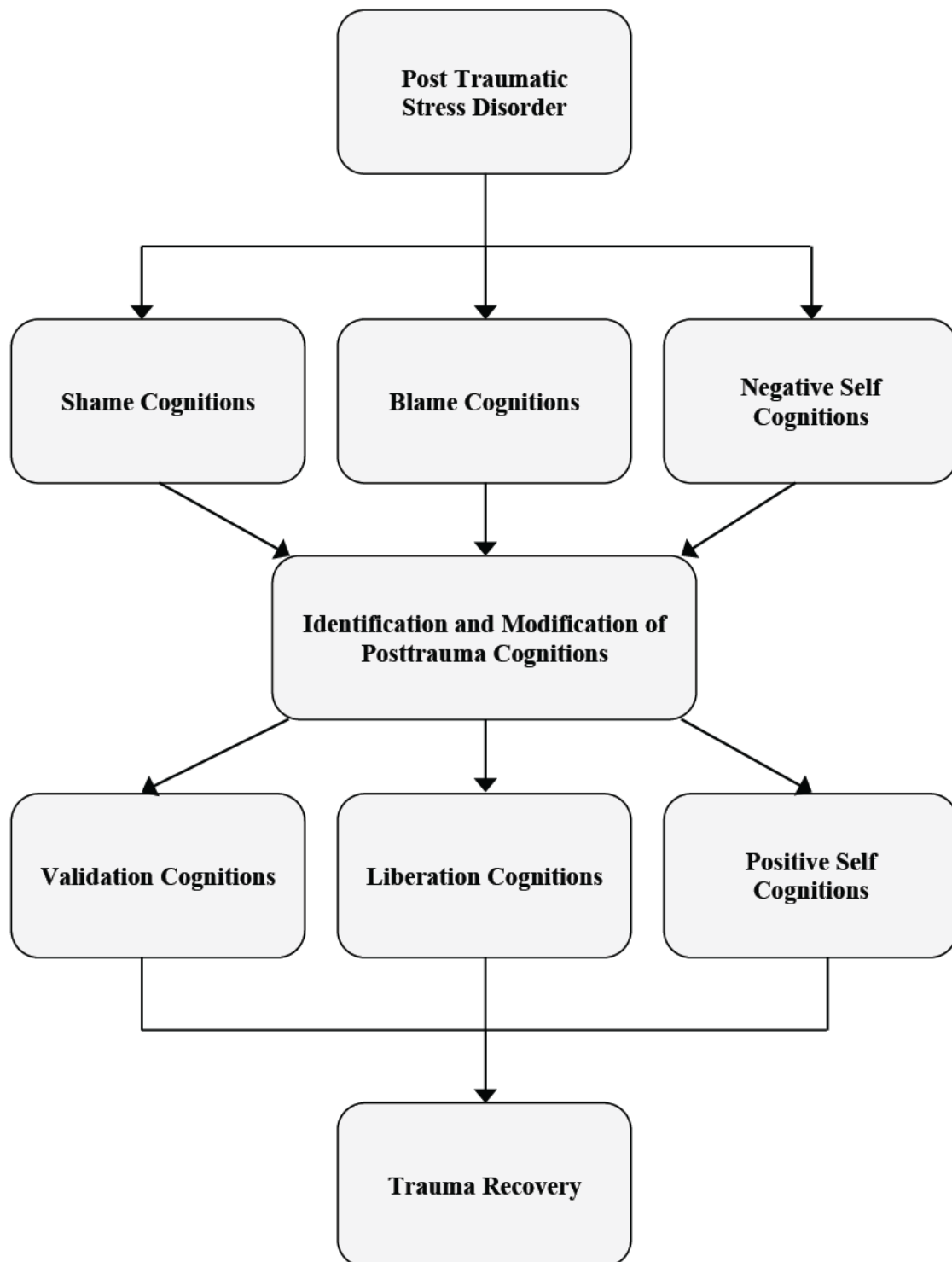
Keane et al., 1985; Lang, 1979; Mowrer, 1960). For survivors of interpersonal trauma, the journey to recovery indicates that the individual is transforming, that they are developing control and mastery over themselves, and feel empowered to engage in their life and their future. As such, Trauma Recovery has been defined within this program of research as an individual process of cognitive change leading to enhanced emotional and behavioural control and the attainment of intrapersonal mastery, empowerment, and hope for oneself and the future.

The Cognitive Model of Trauma Recovery

The Cognitive Model of Trauma Recovery (CMTR) was derived from a positive inversion of the Trauma Cognition Model (TCM) described and evaluated within in chapter four. The CMTR proposes that recovery from interpersonal trauma is achieved through the development, reinforcement, and gradual attainment of three specific positive cognitions related to the individuals' sense of intrapersonal safety, security, and self-identity. The CMTR postulated that Trauma Recovery exists along a continuum as the survivor moves away from self-loathing, blaming others, and self-condemnation, towards a sense of acceptance, empowerment, and self-compassion. The journey to recovery is proposed to result in a cognitive shift from negative posttrauma cognitions of self-condemnation (Shame) to positive cognitions of self-acceptance and worthiness (Validation), from blaming others (Blame) to cognitions centred upon empowerment and control (Liberation), and from self-loathing (Negative Self) to self-compassion and self-love (Positive Self; see Figure 17). These cognitive shifts support a move away from a predominance of negative, deficit-driven posttrauma cognitions that precipitate and maintain maladaptive behavioural and emotional reactions, towards a mastery of safe, secure, strengths-based cognitions that reinforce the individuals' sense of autonomy, safety, and self-control (see Figure 17).

Figure 17

The Clinical Process of Achieving Recovery Following Exposure to Interpersonal Trauma

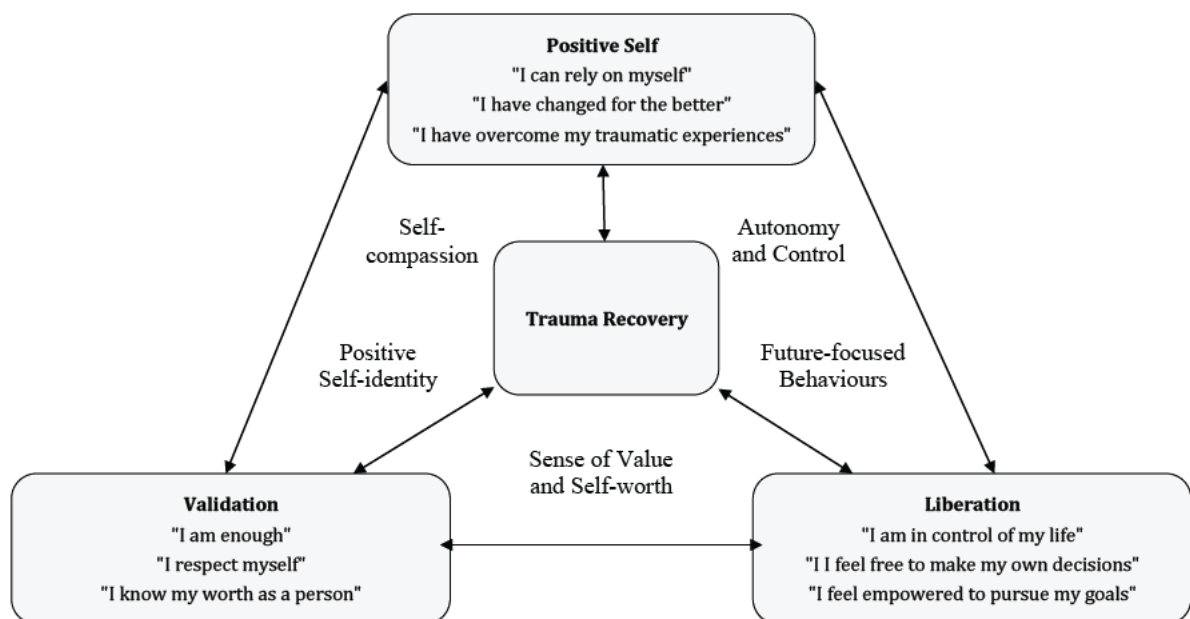


Within the CMTR, Validation has been defined as a survivor's approval and acceptance of themselves as they are. The enhancement of Validation cognitions allows the

survivor to develop an understanding and acceptance of their thoughts, emotions, and behaviours and to experience feelings of internal value and worthiness. Liberation cognitions have been defined as an ability to release or set oneself free from previous experiences. The enhancement of Liberation cognitions allows the survivor to live a life in which they feel empowered, capable, and confident to make positive decisions for themselves, others, and the future. Positive Self cognitions are defined as the survivors' experience of constructive and affirmative thoughts of the self that generate internal care and compassion and promote the development and/or enhancement of self-esteem and self-efficacy (see Figure 18). It is proposed that the identification, development, and predominance of the Validation, Liberation, and Positive Self cognitions contribute to Trauma Recovery through the development and maintenance of a positive and cohesive sense of self.

Figure 18

Cognitive Model of Trauma Recovery



Summary and Research Aims

There is a consensus within the literature that recovery from trauma does not imply a return to premorbid levels of functioning or the eradication of all experienced trauma-related psychopathology, but rather exists as a process of intrapersonal development that promotes hope and personal wellbeing through adaptive cognitive change (Brewin et al., 1996; Bolton & Hill, 1996; Brewin, 2008; Ehlers & Clark, 2000; Foa et al., 1989; Foa & McLean, 2016; Foa & Rothbaum, 1998; Horowitz, 1976; Janoff-Bulman, 1992; Keane et al., 1985; Lang, 1979; Mowrer, 1960). Despite this understanding, there is no current consensual definition of Trauma Recovery in the known nomenclature nor any previously validated means of assessment for Trauma Recovery. This study aimed to address these limitations through the development and psychometric evaluation of the CMTR for survivors of interpersonal trauma.

The aim of this current study was to validate the CMTR through an examination of the relationships between the three theoretically derived positive cognitions of Validation, Liberation, and Positive Self within the CMTR, and the experience of maladaptive symptom expression (i.e., psychological distress and PTSD) for a heterogeneous sample of interpersonal trauma survivors. This study utilised a quantitative research methodology to examine the relationships between the Validation, Liberation, and Positive Self cognitions and Trauma Recovery through an evaluation of psychological distress and PTSD symptom expression following exposure to interpersonal trauma. To achieve this research aim, several hypotheses were developed:

Hypothesis One. No significant differences between participants of differing genders upon the experience of PTSD symptomatology or on Trauma Recovery following the experience of interpersonal trauma will be observed.

Hypothesis Two. A significant difference between individuals exposed to

interpersonal trauma and those without interpersonal trauma exposure upon PTSD symptom expression and Trauma Recovery will be observed. Specifically, individuals exposed to interpersonal trauma will score significantly higher than non-trauma exposed individuals on PTSD symptom expression and significantly lower on Trauma Recovery.

Hypothesis Three. The three cognitions of Validation, Liberation, and Positive Self, described within the CMTR, will demonstrate significant negative relationships with psychological distress following exposure to interpersonal trauma, and will account for a significant proportion of the variance in psychological distress scores for survivors of interpersonal trauma.

Hypothesis Three. The three cognitions of Validation, Liberation, and Positive Self, described within the CMTR, will demonstrate significant negative relationships with PTSD symptom expression following exposure to interpersonal trauma and will account for a significant proportion of the variance in PTSD symptom scores for survivors of interpersonal trauma.

Method

Design

Online survey methods provide an easily accessible means for providing and collecting data from a wide population sample. Participants were recruited through social media using a chain sampling method; a nonprobability sampling method using participants to recruit future participants from among their acquaintances (i.e., sharing the survey link with friends or on social media pages), as well as convenience sampling (i.e., researcher dissemination within personal and professional forums). An information statement was provided to the owner/administrator of social media pages that offer information and support to individuals self-identified to have experienced trauma and gatekeeper approval before disseminating online questionnaire. Participants were provided with an explanatory statement

at the commencement of the study. This document outlined the nature and purpose of the study, inclusion criteria, possible risks, and benefits to participation, the intended use and storage of data, the requirement for voluntary participation and option to withdraw, and the provision of support services and crisis contact details.

Due to the participation of minors within earlier studies of this program of research, additional steps were taken to specify that participation was sought from individuals over 18 years of age. These included bolding the font used to describe inclusion criteria and adding an additional statement to the research link to advise age requirements. Despite these steps, one participant aged 15 years elected to participate in the research study and completed the full online questionnaire. The National Statement of Ethical Conduct in Human Research (2007) has outlined that mature minors (adolescents who have decision-making capacity) can provide consent without additional parental or guardian consent when the young person has the capacity to understand what the research entails. Given this individual assessed the online questionnaire of their own accord, was able to understand the content of the survey, was able to provide valid responses to posed questions and was providing their individual account of trauma exposure, it was deemed appropriate to include their responses in the final data set. Following the provision of the information statement, participants were asked to acknowledge their understanding of the statement, their knowledge of voluntary participation and freedom to withdraw, and their consent to participate in the study. Access to the online survey portal was provided for a duration of six months.

Participants

Adult respondents with access to a computer, mobile phone, or tablet device were sought for participation in the study. The focus of this investigation was upon prior exposure to trauma and participants were asked, through the provision of demographic questions and the inclusion of the Life Events Checklist (LEC; Weathers et al., 2013), to self-report the

previous experience of stressful/traumatic events.

Participation was obtained from a total of 444 individuals with self-reported experience of stressful/traumatic life events. A significant proportion of the participant sample (71.30%) reported the experience of clinically significant PTSD symptomatology, obtaining scores on the PCL-5 equal to or greater than the identified criterion cut-off (total score ≥ 31 ; Weathers et al., 2013). Of the 444 participants, 407 (91.67%) were female, 32 (7.21%) were male, and four (0.90%) identified as non-binary. Participants ranged in age from 15 to 78 years ($M = 41.04$, $SD = 12.17$). Respondents current relationship status was reported with 146 (32.88%) married, 127 (28.60%) single, 97 (21.85%) partnered, 49 (11.03%) divorced, 19 (4.48%) separated, and five (1.13%) reporting themselves to be widowed. Participants were recruited from different nationalities, including Australia, the United States of America, Canada, New Zealand, and the United Kingdom (see Table 35).

Materials

Participants were provided with access to an online self-report questionnaire composed of demographic questions, measures of trauma exposure, PTSD, and psychological distress, and the developed TRM. The online questionnaire contained a total of 165 items and took on average 22 minutes to complete. Participants were asked to provide information regarding their age, gender, sexual orientation, and nationality. To ensure the specified inclusion criteria were met, participants were asked to indicate their prior experience of stressful/traumatic life events using the Life Events Checklist (LEC; Weathers et al., 2013).

Table 35*Participant Demographics and obtained scores on the PCL-5 and TRM (N = 444)*

	<i>n</i>	<i>%</i>	<i>PCL-5 Total</i>		<i>TRM Total</i>	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age						
15-24 years	46	10.36	46.41	21.15	38.07	11.45
25-34 years	84	18.92	44.98	17.09	36.46	11.13
35-44 years	138	31.08	41.78	20.37	38.26	11.55
45-54 years	116	26.13	39.71	19.41	39.88	11.89
55-64 years	43	9.68	38.37	17.69	41.14	10.27
65-74 years	11	2.48	33.63	18.24	41.92	12.58
75 and older	2	0.45	9.00	12.73	48.00	8.49
Sexual Orientation						
Heterosexual	358	80.63	39.63	19.61	39.55	11.46
Homosexual	17	3.83	45.12	18.99	33.53	12.96
Bisexual	47	10.59	49.96	16.35	37.72	10.91
Asexual	8	1.80	53.50	10.46	32.35	9.88
Pansexual	6	1.35	58.33	13.22	34.83	10.50
Not Aligned	7	1.58	53.14	15.14	32.29	11.41
Nationality						
Australia	138	31.08	34.03	18.83	41.50	10.35
USA	161	36.26	46.71	16.76	37.65	11.23
Canada	24	5.41	48.67	19.95	31.71	12.61
United Kingdom	51	11.49	44.82	19.59	37.80	11.58
New Zealand	12	2.70	32.33	21.72	44.50	12.34
Other	56	12.61	42.68	20.58	38.02	12.41

Note: n = number of participants; M = Mean score; SD = Standard deviation;

The Life Events Checklist for DSM-5. The Life Events Checklist for DSM-5 (LEC-5; Weathers et al., 2013) is a 17-item self-report measure designed to screen for potentially traumatic events in an individuals' lifetime. The LEC-5 was originally developed concurrently with the Clinician-Administered PTSD scale for DSM-IV (CAPS; Weathers et al., 2013) for administration prior to the CAPS and was demonstrated to have adequate psychometric properties as a stand-alone measure for the assessment of traumatic exposure. The LEC-5 assesses exposure to 16 events known to potentially result in PTSD or distress and includes one additional item assessing any other extraordinarily stressful event not captured in the first 16 items. The LEC-5 provides an evaluation of single-incident trauma exposure (e.g., "*natural disaster, fire/explosion, transportation accident, serious accident*") and varying forms of interpersonal trauma exposure (e.g., "*sexual assault, assault with a weapon, captivity, severe human suffering*"). Event exposure was assessed across multiple levels and participants are asked to indicate their experience of the 16 events as either having the event "*happen to me,*" "*witnessed it,*" "*learned about it,*" "*part of my job,*" "*not sure,*" and "*doesn't apply.*" Due to the often-cumulative nature of trauma exposure, participants can select multiple exposure levels for each of the identified items.

The psychometric properties of the LEC-5 have been examined in community and clinical populations and have been demonstrated to be good (Grey et al., 2004). The LEC-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Grey et al., 2004). For the purposes of this study, the LEC was used to quantify the experience of interpersonal and other non-personal forms of trauma exposure to assist with categorisation and classification of trauma groups within the participant population. In the current study, a reliability analysis of the scale demonstrated the LEC-5 to have acceptable internal consistency ($\alpha = .76$).

The Posttraumatic Stress Disorder Checklist for DSM-5. The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013) is a 20-item self-report measure for assessing experiences and symptomatology consistent with the diagnostic criteria provided by the DSM-5 (APA, 2013). The PCL-5 asks individuals to indicate the frequency of experiences (e.g., “*repeated, disturbing, and unwanted memories of the stressful experience*”) and symptoms (e.g., “*having difficulty concentrating*”) of posttraumatic stress over the previous one-month period. The PCL-5 has been demonstrated to have moderate diagnostic accuracy and moderate correlations with the Clinician-Administered PTSD Scale (Weathers et al., 2013), which is considered the gold standard for diagnosing PTSD (Forbes et al., 2001). The PCL-5 is not a diagnostic tool however, has been validated as a means for screening individuals, contributing to the formulation of provisional PTSD diagnoses, and for monitoring PTSD symptom expression in response to treatment. The PCL-5 provides a total symptom severity score and four DSM-5 symptom cluster scores. Research suggests using the total PCL-5 severity cut-off score of 31 as indicative of clinically significant PTSD symptomatology (Blevins et al., 2015).

The psychometric properties of the PCL-5 have been examined in community and clinical populations and have been demonstrated to be good (Blevins et al., 2015). The PCL-5 has a strong evidential basis for good test-retest reliability and convergent and discriminate validity (Blevins et al., 2015; Bovin et al., 2016). The PCL-5 has demonstrated good internal consistency with a Chronbach’s alpha coefficient reported of .95 (Wortmann, et al., 2016). In the current study, a reliability analysis of the scale demonstrated the PCL-5 to have excellent internal consistency ($\alpha = .95$).

The Kessler Psychological Distress Scale (K10; Kessler et al., 2002). The K10 is a 10-item self-report measure of global psychological distress. Items are derived from commonly experienced anxiety (e.g., “*during the last 30 days, about how often did you feel so*

restless you could no sit still?”) and depression (e.g., *“during the last 30 days, about how often did you feel so sad that nothing could cheer you up?”*) symptomatology and participants are asked to indicate their level of concern related to their experience of the 10 identified symptoms over the previous 30 day period. Concern is scored on a five-point Likert-type scale from *“none of the time”* to *“all of the time.”* Total scores provide an indication of psychological functioning, with scores over 25 indicating a moderate mental disorder (Andrews & Slade, 2001; Kessler et al., 2002). The K10 is not a diagnostic tool however, has been validated as a means for screening individuals for psychological distress, assisting with the formulation of provisional diagnoses, and as a tool to monitor psychological functioning and symptom experience in response to treatment (Andrews & Slade, 2001; Kessler et al., 2002). The K10 has demonstrated strong convergent validity with clinician-diagnosed anxiety and mood disorders, and significant correlations between total scores on the K10 and the presence of any mental health disorder have been demonstrated (Andrews & Slade 2001). In the current study, a reliability analysis of the scale demonstrated the K10 to have excellent internal consistency ($\alpha = .96$).

The Trauma Recovery Measure (TRM; Smith, 2021; see Appendix A). The TRM is a 15-item self-report measure developed within this program of research to measure recovery following exposure to interpersonal trauma. The TRM consists of three subscales measuring an individuals’ cognitions following the experience of traumatic events. These cognitions include Validation (e.g., *“I accept all parts of myself”*), Liberation (e.g., *“I am in control of myself”*), and Positive Self (e.g., *“I have hope for my future”*). The cognitions of Validation, Liberation, and Positive Self are identified as adaptive cognitive processes that support the survivors’ recovery journey. Total scores on the TRM provide an evaluation of the individuals’ current recovery stage, with low scores indicating the individual to be in the early stage of recovery and high scores indicating engagement in the late stage of recovery.

The previous study (described in chapter five) demonstrated the TRM to have an acceptable factor structure and an adequate overall model fit. The TRM demonstrated excellent internal consistency ($\alpha = .95$) for the total scale and adequate internal consistency for the subscales of Validation ($\alpha = .93$), Liberation ($\alpha = .83$), and Positive Self ($\alpha = .88$). The TRM demonstrated strong divergent validity with measures of PTSD, psychological distress, and posttrauma cognitions and convergent validity with a measure of self-compassion. Overall, the TRM was demonstrated to be a valid and reliable measure of Trauma Recovery for survivors of interpersonal trauma. In the current study, a reliability analysis of the scale demonstrated the TRM to have excellent internal consistency ($\alpha = .95$).

Results

Data Diagnostics and Assumptions Analyses

Prior to commencing data analysis, several data diagnostics and assumptions were evaluated. A visual review of the data and examination of frequency statistics was conducted to identify missing data, data entry errors, and any assumption violations for the 562 participant responses collected. Missing data analysis identified 118 participants who did not complete the included standardised measurement tools following completion of the demographic questionnaire. This missing data represents a response rate of 79%. This study's response rate is defined as the number of individuals achieving full survey completion divided by the number of respondents who did not achieve completion of any presented standardised measurement tools (Draugalis et al., 2008). The response rate for this study was identified to fall within the minimum acceptable response rate documented in the literature (Babbie, 1990; Bailey, 1987; Draugalis et al., 2008; Schutt, 1999). Listwise deletion of the 118 respondents with missing data for the presented standardised measurement tools was used with a resulting population sample size of 444. Power analysis using G*Power 3.1 indicated that the minimum sample size required for a Goodness of fit analysis with a $df = 24$ was 365 (Faul et al., 2007).

Given the obtained participant sample contained 444 responses, this data was deemed appropriate for the planned analyses.

Table 36

Mean Scores, Standard Deviations, Range, and Normality statistics for Participant Scores on the TRM, PCL-5, K-10 (N = 444)

	<i>M</i>	<i>SD</i>	Min.	Max.	Skewness	Kurtosis
TRM	38.85	11.52	11.00	55.00	-.42	-0.86
PCL-5	41.55	19.51	0.00	79.00	-.29	-0.86
K-10	16.95	11.52	0.00	40.00	-.02	-1.11

Note: *M* = Mean score, *SD* = Standard deviation, Min. = Minimum score, Max. = Maximum score.

Table 36 provides a summation of the distribution data for variables included in the data screening process. Visual examination of stem and leaf displays and box plots demonstrated the data to be roughly symmetrical and bell-shaped, indicating univariate normality within the data set (Tabachnick & Fidell, 2013). Overall evaluation of the skewness for assessed variables indicates the data to be approximately symmetrical and normally distributed (Hair et al., 2017; George & Mallery, 2010; Tabachnick & Fidell, 2013). The obtained scores for Kurtosis are considered acceptable and support the assumption of normal univariate distribution (George & Mallery, 2010; Hair et al., 2017; Tabachnick & Fidell, 2013). There was no evidence of univariate outliers within the sample data and as the Mahalanobis distance ($MD = 2.99$) did not exceed the critical value ($\chi^2 = 16.27$; $df = 3$; $\alpha = .001$), multivariate outliers were not identified to be of concern (Howell, 2010).

Table 37*Correlation Matrices for Predictor and Criterion Variables*

	PCL-5	K-10	Validation	Liberation	Positive Self
PCL-5	-				
K-10	.63***	-			
Validation	-.66***	-.55***	-		
Liberation	-.59***	-.53***	.72***	-	
Positive Self	-.60***	-.53***	.74***	.70***	-

Note: *** $p < .001$.

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between predictor variables (Validation, Liberation, Positive Self) and the criterion variables (PCL-5, K-10; see Table 37). Correlations between variables did not exceed $r = .80$, demonstrating that multicollinearity was not of concern within this data sample (Field, 2009; Tabachnick & Fidell, 2013). All assessed predictor variables were identified to correlate significantly with the criterion variable and were retained for further analysis. Overall, the results obtained from the completion of data diagnostics and assumption analyses indicated that the data obtained from the 444 participants met assumption requirements and was adequate for the planned data analyses. All analysis was run at $\alpha = .05$.

Participants

No statistically significant differences were observed for participants across genders upon the experience of psychological distress, $F(2, 440) = 0.45, p = 0.452$, PTSD symptomatology, $F(2, 440) = 1.08, p = 0.338$, or on scores for the three cognitions of Validation, $F(2, 440) = 0.96, p = 0.385$, Liberation, $F(2, 440) = 1.57, p = 0.210$, and Positive Self, $F(2, 440) = 0.49, p = 0.614$.

Participants ranged in age from 15 to 78 years ($M = 41.04$, $SD = 12.17$). No statistically significant differences were observed for participants across age groups on their experience of PTSD symptomatology, $F(6, 436) = 2.04$, $p = .059$ or on Trauma Recovery scores, $F(6, 436) = 1.65$, $p = 0.132$ (see Table 35). No statistically significant differences were observed for participants across their current relationship status upon their experience of PTSD symptomatology, $F(8, 434) = 1.75$, $p = .085$ or on Trauma Recovery scores, $F(8, 434) = 1.63$, $p = 0.115$.

An examination of sexual orientation identified a statistically significant difference for participants across areas of identified sexual orientation upon the experience of PTSD symptomatology, $F(5, 437) = 4.77$, $p < 0.001$, and on Trauma Recovery, $F(5, 437) = 2.24$, $p = 0.050$. Participants identifying as heterosexual scored significantly lower on PTSD symptom expression than participants identifying across any other identity groups (see Table 35). Heterosexual and Bisexual identifying participants scored significantly higher on Trauma Recovery than participants from the other identity groups. There were no statistically significant differences on the experience of PTSD symptomatology $F(8, 434) = 1.75$, $p = .09$ or Trauma Recovery, $F(8, 434) = 1.63$, $p = .12$, for participants based upon their current relationship status.

A statistically significant difference was observed between identified nationalities and PTSD symptom expression measured by the PCL-5, $F(5, 436) = 8.66$, $p < .001$. Australian nationals scored significantly lower than participants from the United States of American ($p < .001$), Canada ($p = .005$), and the United Kingdom ($p = .006$) on total PTSD symptom scores (see Table 35). A statistically significant difference was also observed between identified nationalities upon Trauma Recovery (as measured by the TRM), $F(5, 436) = 4.57$, $p < .001$. Australian nationals scored significantly lower than participants from the United States of American ($p = .039$) and Canada ($p = .001$) on total TRM scores. New Zealand nationals also

scored significantly lower than Canadian participants ($p = .018$; see Table 35).

Experience of Traumatic Events

Participants' experiences of interpersonal and non-personal forms of stressful/traumatic life events were measured using the LEC-5. Statistically significant differences in PTSD symptomatology were observed for participants reporting the experience of five forms of non-personal trauma exposure and participants without previous exposure to these forms of trauma (see Table 38). Of the 444 participants, 373 (84.00%) indicated previous exposure to at least one form of non-personal trauma, with transportation accidents (54.73%), sudden accidental death of a loved one (53.38%), and life-threatening illness of self or a family member (31.08%) identified to be the most frequently reported non-personal trauma typologies within this population sample (see Table 38).

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between the number of different types of experienced traumatic events and total scores on the TRM. Significant negative correlations were observed between total scores on the TRM and both the number of interpersonal trauma types experienced, ($r = -0.25, p < .001$), and the total number of trauma typologies experienced ($r = -0.17, p < .001$). No significant relationship was observed between total scores on the TRM and the total number of different non-personal trauma typologies experienced ($r = -0.04, p = .410$).

There were statistically significant differences observed between participants with the experience of interpersonal trauma and those without upon total scores for the PCL-5, $F(1, 442) = 4.41, p = .036$. Participants with the reported experience of interpersonal trauma scored significantly higher on the PCL-5 ($M = 47.40, SD = 19.11$) than participants with non-personal trauma exposure ($M = 37.11, SD = 21.12$; see Table 39).

Table 38

Information about Experienced Non-personal Forms of Traumatic Events and Obtained Total Scores on the PCL-5 (N = 444)

	<i>n</i>	<i>%</i>	<i>PCL-5 Total Scores</i>			<i>TRM Total Scores</i>		
			<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>F</i>
Natural Disaster								
Not Experienced	315	70.95	41.88	19.03	0.31	83.40	24.41	2.07
Experienced	129	29.05	40.51	20.71		87.07	24.44	
Fire and Explosion								
Not Experienced	373	84.01	41.05	19.60	1.57	84.51	24.54	0.01
Experienced	71	15.99	44.21	18.98		84.23	24.14	
Transport Accident								
Not Experienced	201	45.27	39.55	20.51	3.89*	86.10	24.85	1.65
Experienced	243	54.73	43.21	18.53		83.11	24.08	
Serious Accident								
Not Experienced	384	86.49	41.65	19.24	0.07	84.15	24.25	0.46
Experienced	60	13.51	40.92	21.37		86.45	25.78	
Exposure to Toxins								
Not Experienced	412	92.79	41.17	19.55	2.25	84.49	24.39	0.00
Experienced	32	7.21	46.53	18.71		84.19	25.62	
Combat or War								
Not Experienced	432	97.30	41.34	19.52	1.92	84.25	24.53	1.20
Experienced	12	2.70	49.25	18.36		92.08	20.83	

Table 38 (continued).

Captivity								
Not Experienced	391	88.06	40.42	19.54	11.38**	85.20	24.44	2.98
Experienced	53	11.94	49.94	17.31		79.04	24.04	
Life-threatening Illness								
Not Experienced	306	68.92	39.94	19.59	6.81**	85.43	23.95	1.55
Experienced	138	31.08	45.13	18.93		82.31	25.47	
Sudden Violent Death								
Not Experienced	403	90.77	41.44	19.45	0.138	84.46	24.42	0.00
Experienced	41	9.23	42.63	20.37		84.51	25.01	
Sudden Accidental								
Death	207	46.62	39.56	19.85	4.08*	85.06	23.90	0.23
Not Experienced	237	53.38	43.30	19.09		83.95	24.96	
Experienced								
Serious Harm Caused								
Not Experienced	412	92.79	40.88	19.32	6.89**	85.01	24.39	2.84
Experienced	32	7.21	50.22	20.29		77.47	24.48	

Note: *n* = Number of participants; % = percentage of participant sample, *M* = Mean score; *SD*

= Standard deviation, *** $p < .001$, ** $p < .01$, * $p < .05$

Higher scores and expression of PTSD symptomatology was reported for participants exposed to transportation accidents ($F(1, 442) = 3.89, p = .049$), captivity ($F(1, 442) = 11.38, p = .001$), life-threatening illness/injury to self ($F(1, 442) = 6.81, p = .009$), sudden accidental death of someone close ($F(1, 442) = 4.08, p = .044$), and severe harm/injury/death caused by you to someone else ($F(1, 442) = 6.89, p = .009$). No other significant differences were observed upon PTSD symptom expression and non-personal forms of trauma exposure. Participants with exposure to the ten assessed non-personal forms of trauma exposure scored lower on the TRM than participants without reported exposure to these forms of non-personal trauma however, no statistically significant differences were observed (see Table 38).

Of the 444 participants, 427 (96.17%) indicated previous exposure to interpersonal trauma, with unwanted sexual experiences (76.35%), physical assault (70.27%), and IPV (65.09%) identified to be the most frequently reported interpersonal traumas within this population sample (see Table 39). A moderate positive relationship between the number of reported interpersonal traumatic events and the experience of PTSD symptomatology was observed for the population sampled ($r = .39, p < .001$; Cohen, 1988). A small negative correlation was observed between the number of reported interpersonal traumatic events and obtained Trauma Recovery scores ($r = -.17, p < .001$; Cohen, 1988).

A statistically significant difference was observed between participants and their genders upon their experience of four forms of interpersonal trauma exposure. Female participants were significantly more likely than males or non-binary participants to report the previous experience of IPV ($F(2, 440) = 4.94, p = .008$), sexual assault ($F(2, 440) = 7.12, p = .001$), unwanted sexual experiences ($F(2, 440) = 13.55, p < .001$), and other non-defined interpersonal traumas ($F(2, 440) = 3.04, p = .049$). Despite the differences in trauma typology exposure, no significant differences between the genders was observed on PTSD, $F(2, 440) = 1.09, p = .0338$, or Trauma Recovery scores, $F(2, 440) = 1.08, p = .34$, (see Table 39).

Table 39*Information about Experienced Interpersonal Traumas (N = 444)*

	Total Sample		Female		Male		Non-Binary		<i>F</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
IPT	427	96.20	393	96.60	30	93.80	4	100.00	0.41
IPV	289	65.10	274	67.30	13	40.60	2	50.00	4.94**
PA	312	70.30	291	71.50	18	56.30	3	75.00	1.68
AwW	152	34.20	141	34.60	10	31.30	1	25.00	0.15
SA	274	61.70	261	64.10	10	31.30	2	50.00	7.12***
USE	339	76.40	322	79.10	13	40.60	4	100.00	13.55***
SHS	12	2.70	10	2.50	2	6.30	4	100.00	0.86
Other	294	66.20	274	67.30	16	50.0	4	100.00	3.04*

Note: *n* = Number of participants; % = percentage of participant sample; * $p < .05$; ** $p < .01$;

*** $p < .001$; IPT = Interpersonal Trauma; IPV = Intimate Partner Violence; PA = Physical

Assault; AwW = Assault with a Weapon; USE = Unwanted Sexual Experience; SHS = Severe Human Suffering

There were statistically significant differences observed between participants with experience of interpersonal trauma and those without upon total scores for the PCL-5 ($F(1, 442) = 19.62, p < .001$). Participants with the reported experience of interpersonal trauma scored significantly higher on the PCL-5 ($M = 42.36, SD = 19.18$) than participants without interpersonal trauma exposure ($M = 21.41, SD = 17.35$) and across all the assessed typologies of interpersonal trauma (see Table 40).

Table 40*Experienced Traumatic Events and Total Scores on the PCL-5 and the TRM (N = 444)*

	<i>n</i>	<i>%</i>	<i>PCL-5 Total Scores</i>			<i>TRM Total Scores</i>		
			<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>F</i>
IPT								
Not Experienced	17	3.83	21.41	17.35	19.62***	98.94	16.85	6.272*
Experienced	427	96.17	42.36	19.18		83.89	24.54	
IPV								
Not Experienced	155	34.91	35.92	20.48	20.71***	86.53	24.42	1.70
Experienced	289	65.09	44.57	18.31		83.36	24.44	
Physical Assault								
Not Experienced	132	29.73	32.56	19.94	43.75***	87.85	24.17	3.61
Experienced	312	70.27	45.36	18.06		83.04	24.46	
Assault (Weapon)								
Not Experienced	292	65.77	38.44	19.44	22.81***	86.80	24.18	7.94**
Experienced	152	34.23	47.54	18.28		79.97	24.41	
Sexual Assault								
Not Experienced	170	38.29	34.08	19.08	44.41***	90.35	23.20	16.51***
Experienced	274	61.71	46.19	18.34		80.81	24.53	
Unwanted Sex. Ex.								
Not Experienced	105	23.65	32.03	19.35	35.30***	92.67	22.98	16.01***
Experienced	339	76.35	44.50	18.63		81.92	24.36	
Severe Suffering								
Not Experienced	330	74.32	38.68	19.59	29.71***	86.72	23.73	11.15**
Experienced	114	25.68	49.88	16.78		77.95	25.42	
Other								
Not Experienced	294	66.22	35.41	20.56	23.63***	89.31	24.47	9.05**
Experienced	150	33.78	44.69	18.21		81.99	24.10	

Note: IPT = Interpersonal Trauma; *n* = Number of participants; % = percentage of participant

sample, *M* = Mean score; *SD* = Standard deviation, *** $p < .001$

Participants with exposure to interpersonal trauma were also identified to score significantly lower on the TRM ($M = 83.89$, $SD = 24.54$) than participants who did not report previous exposure to interpersonal violence ($M = 98.94$, $SD = 16.85$; $F(1, 442) = 6.27$, $p = .013$; see Table 40).

Lower Trauma Recovery scores were observed for participants across all assessed interpersonal trauma typologies, with statistically significant differences identified between individuals with and without event exposure within the typologies of assault with a weapon, $F(1, 442) = 7.94$, $p = .005$), sexual assault $F(1, 442) = 16.51$, $p < .001$), unwanted sexual experiences $F(1, 442) = 16.01$, $p < .001$), severe human suffering $F(1, 442) = 11.15$, $p = .001$), and other non-classified typologies $F(1, 442) = 9.05$, $p = .003$; see Table 40).

Cognitions

Bivariate Pearson product-movement correlation coefficients were calculated to examine the relationship between the cognitions of Validation, Liberation, and Positive self with total scores on PTSD and psychological distress (see Table 41).

Table 41

Correlation Matrices for Total Scores on the Cognitions of Validation, Liberation, and Positive Self and Total Scores on the PCL-5 and K-10 (N = 444).

	Validation	Liberation	Positive Self	PCL-5	K-10
Validation	-				
Liberation	.72***	-			
Positive Self	.74***	.70***	-		
PCL-5	-.66***	-.59***	-.60***	-	
K-10	-.55***	-.53***	-.53***	.63***	-

Note: *** $p < .001$

The cognitions of Validation, Liberation, and Positive Self demonstrated significant large correlations with total psychological distress and PTSD symptom ratings (Cohen, 1988).

To further examine the relationship between the cognitions of Validation, Liberation, and Positive Self upon PTSD symptom expression, the participant population was divided into two subgroups based on their obtained scores for the PCL-5. Participants who met criteria consistent with clinically significant symptoms of PTSD as measured by the PCL-5 (total score ≥ 31 ; $n = 439$) were identified as the “*Criteria met*” subgroup and participants who did not identify the experience of clinically significant PTSD symptomatology (total score < 31 ; $n = 196$) were identified as the “*Criteria not met*” subgroup.

A statistically significant difference between the two participant subgroups was observed for obtained scores on the cognitions of Validation $F(1, 441) = 186.89, p < .001$, Liberation, $F(1, 441) = 142.81, p < .001$, and Positive Self, $F(1, 441) = 124.92, p < .001$ (see Table 42).

Table 42

Subscale Scores for Participants who Met and Did Not Meet Cut-off Criteria on the PCL-5 (N = 444).

	<i>Criteria met</i>			<i>Criteria not met</i>			<i>F</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
Validation	15.10	5.63	316	22.28	2.86	127	186.89***
Liberation	9.49	3.23	316	13.18	2.04	127	142.81***
Positive Self	10.10	3.35	316	13.59	1.72	127	124.92***

Note: n = Number of participants; M = Mean score; SD = Standard deviation; *** $p < .001$

The Cognitive Model of Trauma Recovery

The CMTR was evaluated using regression analysis. As the regression analyses were conducted to evaluate the relationship between the three cognitions of Validation, Liberation, and Positive Self described within the CMTR and psychopathology for survivors of interpersonal trauma, the 17 participants who did not report the previous experience of interpersonal trauma were removed from the data set. Two separate regression analyses were conducted to evaluate the relationships between Validation, Liberation, and Positive Self on psychological distress and PTSD symptomatology for the remaining 427 participant sample.

Psychological Distress. The results of the regression analysis demonstrated the cognitions of Validation ($\beta = -.24, p < .001$), Liberation ($\beta = -.22, p < .001$), and Positive Self ($\beta = -.19, p = .002$) to be significantly negatively related to the expression of psychological distress following exposure to interpersonal trauma (see Table 43).

These findings indicate that higher scores on the cognitions of Validation, Liberation, and Positive Self predicted a significant reduction in reported psychological distress for interpersonal trauma survivors. Each cognition (Validation, Liberation, and Positive Self) was identified to be a significant independent predictor of psychological distress and was demonstrated to be significantly correlated with one another (see Figure 19). In combination, the three cognitions of Validation, Liberation, and Positive Self accounted for a statistically significant 35% of the variability in psychological distress symptomatology for survivors of interpersonal trauma, $R^2 = 0.35, F(3,423) = 74.86, p < .001$ (see Table 43). Using Cohen's (1988) conventions, the effect size can be considered large ($f^2 = 0.54$).

Table 43

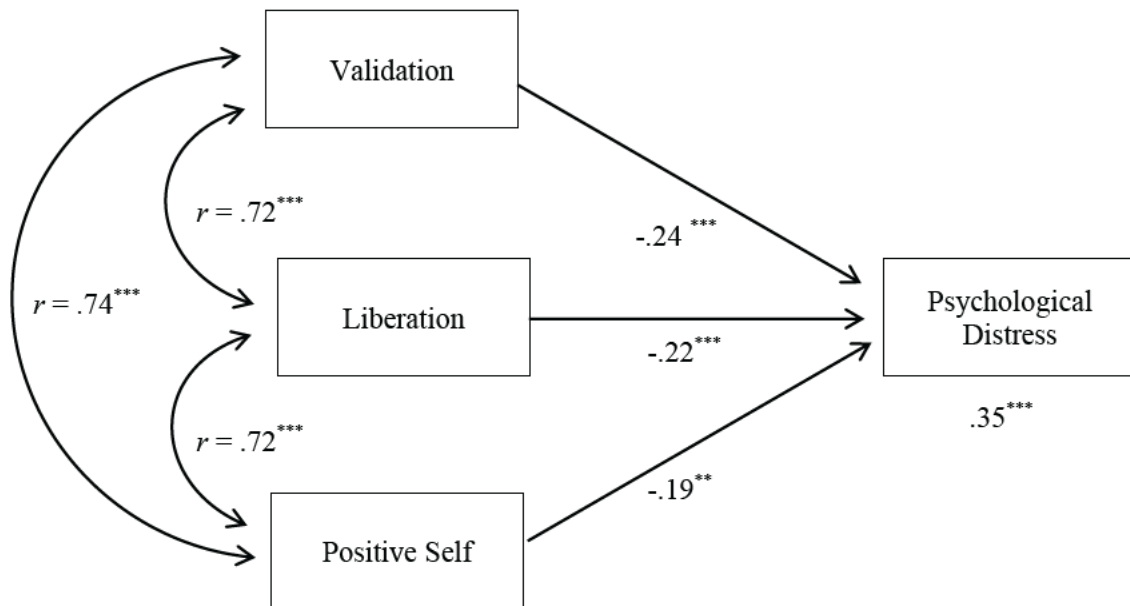
Regression Coefficients for the Three Cognitions of the CMTR and Psychological Distress (N = 427)

	<i>Unstandardised Coefficients</i>		<i>Standardised Coefficients β</i> (95% CI β)
	<i>B</i>	<i>Std. Error</i>	
Validation	-46***	.12	-.24 [-.70 – -.21]
Liberation	-75***	.20	-.22 [-1.15 – -.35]
Positive Self	-.66**	.22	-.19[-1.09 – -.24]

Note: ** = $p < .01$, *** = $p < .001$

Figure 19

Regression Weights and Correlation Coefficients for the Three Cognitions of the CMTR and Psychological Distress for Survivors of Interpersonal Trauma (N = 427)



Note: *** $p < .001$; ** $p < .01$; r = correlation coefficient

PTSD Symptomatology. The results of the regression analysis demonstrated the cognitions of Validation ($\beta = -.41, p < .001$), Liberation ($\beta = -.16, p = .004$), and Positive Self ($\beta = -.19, p = .001$) to be significantly negatively related to the expression of PTSD symptomatology following exposure to interpersonal trauma (see Table 44). These findings indicate that higher scores on the cognitions of Validation, Liberation, and Positive Self predicted a significant reduction in reported PTSD symptomatology for interpersonal trauma survivors. Each cognition (Validation, Liberation, and Positive Self) was identified to be a significant independent predictor of PTSD symptom expression and was demonstrated to be significantly correlated with one another (see Figure 20). In combination, the three cognitions of Validation, Liberation, and Positive Self accounted for a statistically significant 47% of the variability in PTSD symptomatology for interpersonal trauma survivors, $R^2 = 0.47, F(3,423) = 126.95, p < .001$. Using Cohen's (1988) conventions, the effect size can be considered large ($f^2 = 0.89$).

Table 44

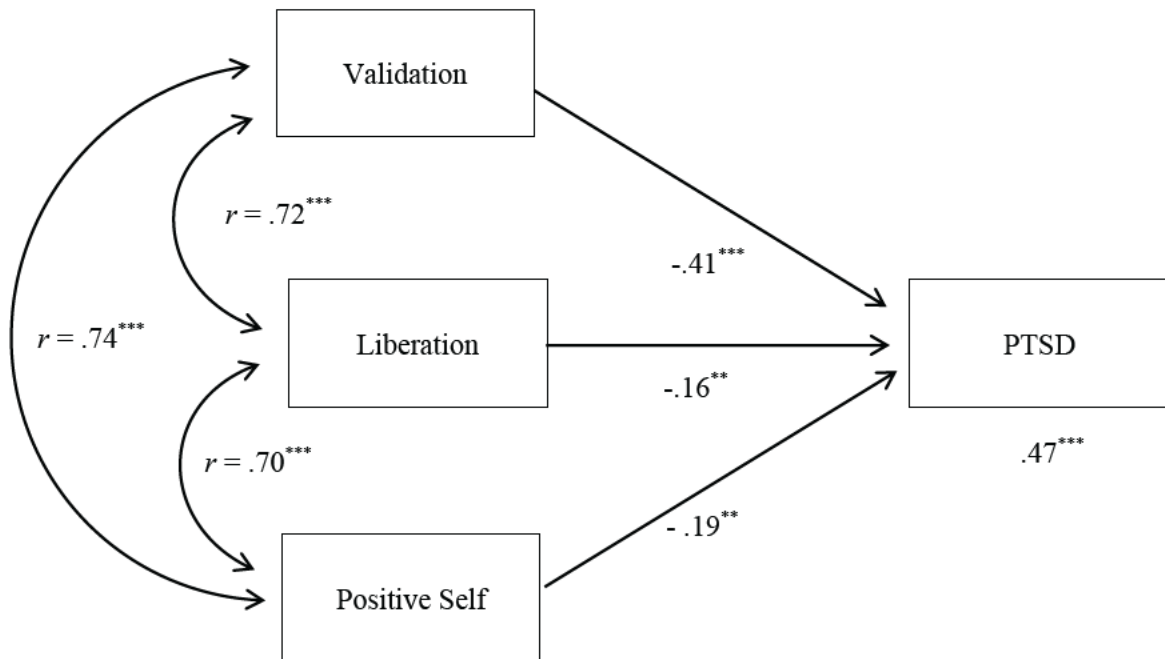
Regression Coefficients for the Three Cognitions of the CMTR and PTSD Symptomatology
($N = 427$)

	<i>Unstandardised</i>		<i>Standardised Coefficients β</i> (95% CI β)
	<i>Coefficients</i>		
	<i>B</i>	<i>Std. Error</i>	
Validation	-1.30***	.19	-.41 [-1.66 – -.94]
Liberation	-.88**	.31	-.16 [-1.48 – -.29]
Positive Self	-1.08**	.32	-.19[-1.71 – -.45]

Note: ** = $p < .01$, *** = $p < .001$

Figure 20

Regression Weights and Correlation Coefficients for the Three Cognitions of the CMTR and PTSD Symptomatology for Survivors of Interpersonal Trauma (N = 427)



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

Discussion

The overall aim of this current study was to examine the relationships between the three cognitions of the CMTR and the experience of psychological distress and PTSD symptomatology for a heterogeneous sample of interpersonal trauma survivors.

Trauma Exposure and Typology

Eleven forms of non-personal trauma exposure were examined within this study, with most participants (84%) reporting the experience of at least one form of non-personal trauma exposure. The experience of transportation accidents (54.73%), sudden accidental death of a loved one (53.38%), and life-threatening illness of self or a family member (31.08%) were

identified to be the most commonly reported non-personal traumas within this population sample. The reported prevalence of non-personal trauma exposure within this study is consistent with previous research examining traumatic event exposure (Kessler et al., 1995; Kilpatrick et al., 2013; Lewis et al., 2019). Participants reporting exposure to non-personal traumas were identified to experience significantly greater PTSD symptom expression than individuals without previous non-personal trauma exposure. Participants with previous exposure to transportation accidents, captivity, life-threatening illness/injury, the sudden accidental death of a loved one, and severe harm/injury/death caused by self or others reported higher rates of PTSD symptom expression than participants without exposure to these forms of trauma typologies. These findings are consistent with previous research that has demonstrated higher prevalence rates of PTSD for individuals exposed to multiple incidences, greater severity, and interpersonal trauma typologies (Dutton, 1992; Houskamp & Foy, 1991; Jones et al., 2001). The forms of trauma identified to result in greater PTSD symptom expression are associated with life threat (to self or others), death of a loved one, and human suffering (caused by self or others). As such, it is proposed that the perceived severity of these trauma typologies has contributed to the exacerbation of PTSD symptomatology for participants within this study.

A significant majority (96%) of the sampled population reported previous exposure to at least one form of interpersonal trauma. The experience of unwanted sexual experiences (76.35%), physical assault (70.27%), and IPV (65.09%) were identified to be the most frequently reported interpersonal traumas. The prevalence of interpersonal trauma exposure within this population sample is consistent with other studies that have identified interpersonal violence to be experienced in at least one form across the lifetime for both men and women within community, clinical, and nationally representative samples (Benjet et al., 2016; Black et al., 2011; Kessler et al., 1995; Kessler et al., 2017; Resnick et al., 1993;

Rees et al., 2011; Turell, 2000; WHO, 2013a).

A significant positive relationship was observed between the number of reported interpersonal traumatic events experienced and the expression of PTSD symptomatology, with a greater frequency of experienced PTSD symptoms related to a greater incidence of interpersonal trauma exposure. Similarly, a significant negative relationship between experienced interpersonal trauma exposure and Trauma Recovery was observed, with exposure to a greater number of interpersonal traumatic events significantly impacting on Trauma Recovery. These findings are consistent with the literature that has identified higher prevalence rates of PTSD symptom expression and diagnosis for individuals exposed to multiple incidences of trauma exposure and a greater severity of experienced abuse (Dutton, 1992; Houskamp & Foy, 1991; Jones et al., 2001).

The prevalence of exposure to trauma typologies reported within this study is generally consistent with previous research that has demonstrated a higher incidence of IPV, sexual abuse, and unwanted sexual experiences reported by women (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000; Widom et al., 2008). A significant difference between IPV, sexual assault, and unwanted sexual experiences was observed between the gender groups, with female and non-binary participants reporting significantly greater exposure to these three trauma typologies than male participants. Whilst there were some identified differences in the types of trauma exposure experienced across the genders, a participant's gender was not identified to significantly differentiate between PTSD symptomatology or Trauma Recovery following exposure to interpersonal trauma. These outcomes are consistent with previous research (Iverson et al., 2013; Kessler et al., 1995; Tolin & Foa, 2006; Turell, 2000) and support hypothesis one.

Participant Characteristics

The sexual orientation of the population sample was identified to differentiate between

participants' experience of PTSD symptomatology and Trauma Recovery. Participants identifying as heterosexual scored significantly lower on PTSD symptom expression than participants identifying within any of the other sexual orientation groups. Participants' recovery experience was also identified to significantly differ, with heterosexual and bisexual identifying participants scoring significantly higher than participants from any other sexual identity groups on Trauma Recovery. This finding is partially consistent with previous research that has identified marginalised population groups to report higher rates of adverse mental health outcomes following trauma exposure (Lorenzetti et al., 2015; O'Halloran, 2015; Roch et al., 2010).

Previous population-based studies have examined the minority stress hypothesis upon sexual orientation and identified a higher prevalence of mental health disorders and interpersonal trauma for non-heterosexual individuals (King et al., 2008; Meyer, 2003; Roch et al., 2010; Turell, 2000). This theory proposes that disparities in experience for sexual minorities can be grossly explained by stressors induced by the existence of a homophobic society that fosters and maintains a culture of harassment, discrimination, maltreatment, and victimisation (Meyer, 2003). A survey of attitudes, experiences, and values of lesbian, gay, bisexual, and transgender individuals (LGBT; Pew Research Centre, 2013) identified a growing feeling of acceptance for the LGBT community. Specifically, one-third of all LGBT adults surveyed reported a high degree of social acceptance for bisexual women (Pew Research Centre, 2013). Participants identifying as homosexual were perceived to experience some degree of acceptance, whilst transgender individuals were reported by to experience little to no acceptance (Pew Research Centre, 2013). It is therefore proposed that the differences in PTSD symptom expression and Trauma Recovery exhibited by participants of minority sexualities within this study (i.e., asexual, pansexual, and other/non-specified orientations) are likely reflective of low social acceptance, continuing social prejudices, and

the current unavailability and inaccessibility of services and supports for non-heterosexual survivors of interpersonal trauma.

The results obtained in this study are consistent with previous research examining the mental health status of individuals across differing sexual identities. These studies have demonstrated that individuals identifying within the emerging identity categories (i.e., pansexual, asexual, sexually fluid) experience significantly higher rates of mental health symptomatology and diagnosis (including anxiety, depression, and suicidal ideation) than individuals identifying as heterosexual or bisexual (Balsam et al., 2005; Borgogna et al., 2018; Jorm et al., 2002; Kerr et al., 2013; Ross et al., 2018; Wadsworth & Hayes-Skelton, 2015). The differential attainment of Trauma Recovery observed within this study is therefore consistent with previous research and highlights the additional needs of non-heterosexual survivors of interpersonal trauma.

A significant difference was observed between Australian and North American (i.e., United States of America and Canada) participants on the expression of PTSD symptomatology and the attainment of Trauma Recovery, with Australian nationals reporting significantly less PTSD symptoms and higher Trauma Recovery scores than participants from North America. Participants from New Zealand also reported higher recovery scores than participants from Canada. Higher prevalence rates of PTSD following interpersonal trauma exposure for North American samples have been consistently documented within the literature (Creamer et al., 2001; Koenen et al., 2017; Sareen, 2020; Stein et al., 2007). At the time of data collection for this study, a global health emergency resulting from the human-to-human transmission of the coronavirus disease had been enacted, with Asia, Europe, and North America identified as the most affected pandemic outbreak areas (Zhu et al., 2020). Coronavirus has been identified as a global pandemic resulting in negative impacts upon physical health, mental health, and sociocultural wellbeing (Vigo et al., 2020; Zhu et al.,

2020). At the time of writing (22nd of February 2021), there were 110.75 million confirmed cases and 2.46 million confirmed deaths from coronavirus globally, with approximately 25.01% of cases and 20.04% of deaths occurring in the United States of America (Johns Hopkins University & Medicine, 2021). It is hypothesised that the ongoing impacts of the coronavirus may have further contributed to the already increased prevalence of trauma exposure and PTSD within the North American population sample and resulted in the observed differences between participants within this sample. Emerging research is documenting and examining the impact of the coronavirus pandemic globally and is likely to provide increased knowledge and understanding relating to the impact of this pandemic upon individuals and their experience of and exposure to interpersonal violence and PTSD during these unprecedented times.

Interpersonal Trauma Exposure

A significant difference between individuals exposed to interpersonal trauma and those without interpersonal trauma exposure was observed across PTSD symptom expression and Trauma Recovery. Consistent with hypothesis two, the experience of interpersonal trauma was observed to differentiate between individuals who met the criteria for clinically significant PTSD symptomatology and those who did not. Specifically, participants who reported the experience of any form of interpersonal trauma were more likely to report the presence of clinically significant PTSD symptomatology than participants who did not experience interpersonal forms of trauma exposure. Participants exposed to interpersonal trauma were identified to score lower on Trauma Recovery across all interpersonal trauma typologies than participants without interpersonal trauma exposure. Significant differences were also observed on Trauma Recovery for the interpersonal trauma typologies of assault with a weapon, sexual assault, unwanted sexual experiences, and severe human suffering. These outcomes indicate that exposure to these forms of interpersonal trauma results in

greater impediments to recovery when compared to individuals without exposure to these forms of interpersonal trauma. The identified delineation between PTSD symptom expression for individuals exposed to interpersonal versus non-personal forms of trauma exposure highlights the unique and varied impact of interpersonal trauma upon an individuals' symptom expression following trauma exposure.

The Cognitive Model of Trauma Recovery

The three cognitions within the CMTR demonstrated significant negative relationships with psychological distress for survivors of interpersonal trauma. These findings indicate that the expression and predominance of the Validation, Liberation, and Positive Self cognitions contribute to a significant reduction in psychological distress for survivors of interpersonal trauma. Together the three cognitions of Validation, Liberation, and Positive Self within the CMTR accounted for a significant proportion of the variance in psychological distress reported by interpersonal trauma survivors. The outcomes from this study provide support for hypothesis three and demonstrated the significant role of the Validation, Liberation, and Positive Self cognitions in the mitigation of psychological distress following trauma exposure.

The three cognitions of Validation, Liberation, and Positive Self within the CMTR were also demonstrated to have a significant negative relationship to the expression of PTSD symptomatology for survivors of interpersonal trauma. These findings indicate that the expression and predominance of the Validation, Liberation, and Positive Self cognitions contribute to a significant reduction in PTSD for survivors of interpersonal trauma. Together the three cognitions of the CMTR accounted for a significant proportion of the variance in reported PTSD symptomatology for interpersonal trauma survivors. The outcomes from this study provide support for hypothesis four and demonstrate the significant role of the Validation, Liberation, and Positive Self cognitions in the mitigation of PTSD symptomatology and the facilitation of Trauma Recovery following trauma exposure.

Limitations and Implications for Future Research

The current study extends the literature by examining the CMTR and the relationships between the cognitions of Validation, Liberation, and Positive Self upon psychological distress, PTSD symptom expression, and Trauma Recovery for a heterogeneous population of interpersonal trauma survivors however, there are several limitations worth noting. Whilst the data for this study was obtained from a large population sample it is acknowledged that the participant numbers for minority and marginalised groups were lower than expected. The small number of participant responses obtained within minority gender and sexual identity groups restricts the generalisability of research outcomes across all currently recognised identities and genders. Similarly, participant representation was largely obtained from within western countries. As such, generalisability is limited to individuals within these nations. As this is one of the first known studies to examine the experience of interpersonal violence and PTSD across varying trauma typologies and population groups, the results obtained in this study provide a foundation from which further research can be conducted. An expansion of the population sample to obtain increased participation from marginalised and minority gender and sexual orientation groups and a widening the geographical scope of participation may provide enhanced understanding into the needs and outcomes for these individuals and provide further support for the CMTR and its utility across a wide population sample.

As discussed in the previous chapter, the utilisation of an online sampling method contributes to the identified study limitations. Due to the absence of face-to-face contact and the anonymity of participation, there is no way to assess the validity of participant responses on the provided standardised measurement tools. Online data collection methodology relies on participant self-identification as a survivor of trauma, the identification and quantification of psychosocial symptomatology, and the accurate understanding and interpretation of questionnaire items. These factors inherent in online data collection may potentially result in

biased responses, participant error, or over/under-reporting of symptomatology. Despite these limitations, online survey methods have been identified to be a cost-effective, time-limited means of data collection with the capacity to reach a wide range of participation from samples across geographical locations and to minimise participant desirability bias when compared to other means of data collection (i.e., paper-based or clinician-administered; Evans & Mathur, 2005; Fricker & Schonlau, 2002; Nayak & Narayan, 2019).

The questionnaire itself comprised standardised measurement tools that contained items with the potential to elicit participant distress. Items assessing previously experienced traumatic events were placed at the commencement of the questionnaire, which may have contributed to the early participant discontinuation identified within this study. As the research aim was to examine trauma responses, it was important that participants were able to identify and quantify their experiences of traumatic events and psychological sequela. However, due to the nature of the participant population being examined (i.e., survivors of trauma) it was equally, if not more important, to minimise the potential for harm and/or distress and empower respondents to withdraw from participation any time. Previous research examining participant burden within populations of trauma survivors has identified that whilst a subset of participant samples typically reports unanticipated distress or strong negative emotions, the majority of respondents do not negatively evaluate their experience or regret research participation (Newman & Kaloupek, 2004).

The ongoing participation and completion of the full online questionnaire by a significant majority (81%) of individuals who accessed the questionnaire is largely consistent with these research outcomes. As such, it was not deemed appropriate to alter the order of item presentation as a means of minimising participant attrition, nor was it likely to enhance questionnaire completion. Participants engaged in this study were directed to publicly accessible support groups and provided contact information for support services should

distress be elicited through participation in this project. Access to direct follow up and support by researchers and ongoing collection of data related to the factors contributing to the experience of distress and/or drop out (i.e., specific items) would likely provide enhanced insight into the factors that contribute to participant attrition and research burden and provide practical steps to obtain much-needed data whilst supporting the needs and wellbeing of participants.

Additionally, in the absence of any validated means of assessment for Trauma Recovery, the validity of the CMTR was evaluated against maladaptive symptom expression. Trauma Recovery is theorised to occur through a process of cognitive change leading to enhanced emotional and behavioural control and the attainment of intrapersonal mastery, empowerment, and hope for oneself and the future. Within this conceptualisation recovery has been theorised to occur concurrently with symptom abatement however, this relationship is not theorised to be linear, and an absence of psychopathology is not essential for the attainment of recovery. The use of psychopathology as indicators of recovery thus, only provides an approximation and does not directly measure recovery. Despite these limitations, identifying significant negative relationships between Validation, Liberation, and Positive Self with psychological distress and PTSD, provides a foundation from which further research can be conducted.

Conclusion

The CMTR proposes that recovery from interpersonal trauma is achieved through the development, reinforcement, and gradual attainment of three specific positive cognitions related to the survivor's sense of intrapersonal safety, security, and self-identity. The outcomes from this study have demonstrated the predominance of Validation, Liberation, and Positive Self cognitions to significantly predict a reduction in the experience of psychological distress and PTSD symptomatology following exposure to interpersonal trauma. Overall, the

three cognitions of the CMTR were demonstrated to account for a significant proportion of the variance in psychological distress and PTSD symptomatology for interpersonal trauma survivors.

The unique psychological outcomes and needs of interpersonal trauma survivors have been highlighted within this study. The significant differences observed between individuals exposed to interpersonal trauma compared to individuals without interpersonal trauma exposure demonstrate the negative impact of interpersonal trauma upon the survivors' cognitive processes. Similarly, the experience of concurrent social/environmental stressors for participants within this study has been identified to negatively impact Trauma Recovery and to contribute to the maintenance of psychological distress and PTSD symptom expression. The ongoing impacts of social oppression for minority gender and sexuality groups and the unique pressures of a global health pandemic have been identified to negatively impact Trauma Recovery and to contribute to the maintenance of psychological distress and PTSD symptom expression. Overall, the presence and enhancement of the Validation, Liberation, and Positive Self cognitions have been demonstrated to predict a reduction in experienced psychopathology for survivors of interpersonal trauma, providing support for the CMTR.

These outcomes highlight the need for cognitive-based psychological interventions to be specifically tailored to develop and strengthen the positive cognitions of Validation, Liberation, and Positive Self. The empirical evidence obtained within this study indicates that clinical interventions centred upon the identification and enhancement of the positive cognitions of Validation, Liberation, and Positive Self would contribute to a significant reduction in experienced psychopathology and facilitate Trauma Recovery for survivors of interpersonal trauma.

Chapter Seven

Discussion

Chapter Overview

The overarching aim of this program of research was to enhance our knowledge and understanding of Trauma Recovery for survivors of interpersonal violence. To achieve this aim, this program of research presented four empirical studies designed to identify the posttrauma cognitions associated with interpersonal trauma exposure and to systematically develop and examine an evidence-based model and psychometrically sound means of measuring Trauma Recovery. This final chapter summarises the key findings from these studies, identifying the empirical and clinical implications resulting from this program of research, and providing recommendations for future research examining Trauma Recovery.

Research Synopsis

This program of research provides a significant contribution to the literature examining interpersonal trauma and its sequelae for a diverse population of survivors. The role of social and environmental stressors upon the expression of PTSD symptomatology and the facilitation of Trauma Recovery following interpersonal trauma exposure were identified. The acuity of the survivor's environment, exposure to concurrent stressors, the experience of multiple incidences of traumatic events, and a survivors' identification within minority sexual identity groups, were identified as factors likely to contribute to poorer mental health and recovery outcomes following interpersonal trauma exposure. Interpersonal trauma exposure was demonstrated to impose unique psychological burdens upon survivors and was identified to contribute to the development of posttrauma cognitions and the expression of PTSD symptomatology at greater rates than non-personal forms of trauma exposure. Interpersonal trauma exposure was also identified to confer impairments to Trauma Recovery that were not experienced by survivors of non-personal trauma exposure. These empirical findings extend

the literature on individual, social, and environmental differences, highlight the unique needs and outcomes for interpersonal trauma survivors, and provided key areas for clinical interventions to support Trauma Recovery.

This program of research contributes to the body of knowledge on interpersonal trauma and Trauma Recovery by providing empirical support for the role of posttrauma cognitions in maintaining PTSD and facilitating Trauma Recovery for interpersonal trauma survivors. Study one contributes to the interpersonal trauma literature through the identification of the Shame, Blame, and Negative Self posttrauma cognitions and their role in the maintenance of PTSD symptom expression following the experience of IPV. Study two makes an original contribution through the attainment of empirical support for the Trauma Cognition Model (TCM) of PTSD for interpersonal trauma survivors and the identification of specific differences in posttrauma cognitive sequelae for survivors of interpersonal trauma. Study three provides a unique and important contribution to the Trauma Recovery literature through the attainment of empirical support for the Trauma Recovery Measure (TRM). The clinical and empirical implications of the positive, strengths based TRM for survivors of interpersonal violence have been identified and support the assessment and monitoring of Trauma Recovery within clinical and empirical settings. Study four provides an original contribution to the interpersonal trauma and Trauma Recovery literature through the preliminary validation of the Cognitive Model of Trauma Recovery (CMTR) and the identification of the Validation, Liberation, and Positive Self cognitions and their role in the mitigation of trauma-related psychological sequelae and the facilitation of Trauma Recovery.

Overall, this program of research provides an empirically supported reconceptualisation of Trauma Recovery, focusing on positive strength-based cognitive change. The empirical support obtained throughout this program of research suggests that an adoption of this approach will facilitate Trauma Recovery through the development of

positive cognitions and the enhancement of autonomy, safety, and a positive sense of self.

Clinical and Empirical Implications and Recommendations for Future Research

Epidemiology of Interpersonal Trauma within the Populations Sampled

A review of the data obtained in this program of research has identified rates of interpersonal trauma exposure that are consistent with those documented in published research (Kessler et al., 1995; Resnick et al., 1993; Rees et al., 2011; Turell, 2000). Between 95 and 96 percent of participants across the included studies identified previous exposure to interpersonal trauma. The rates of clinically significant PTSD symptom expression for participants within this program of research were also demonstrated to be consistent with previous research. Between 69 and 78 percent of participants reported clinically significant PTSD symptomatology across the sampled populations (Anderson, 2002; Black et al., 2011; Coker et al., 2002; Coker et al., 2006; Golding, 1999; Jones et al., 2001; Woods et al., 2008).

This program of research identified the impact of social and environmental stressors upon the expression of PTSD symptomatology and the attainment of Trauma Recovery. Across the included studies, the additional stressors conferred by a trauma survivor's environment upon the expression of PTSD symptomatology and Trauma Recovery were identified as factors likely to contribute to poorer mental health and recovery outcomes. The current and unique psychosocial impact of the coronavirus pandemic has been proposed to elicit fear, insecurity, and life threat (to self and others), which in itself has been demonstrated to result in the development of PTSD and to contribute to an exacerbation of symptomatology for individuals already living with PTSD (Bright et al., 2020; Neil, 2020; Sacco et al., 2020; Sharma & Borah, 2020; Vigo et al., 2020; Zhu et al., 2020). The worldwide living restrictions enforced to manage the coronavirus outbreak (i.e., curfew, quarantine, and isolation) have also been proposed to confer additional stressors for individuals with current or previous experience of interpersonal trauma (Bright et al., 2020; Neil, 2020; Sacco et al., 2020; Sharma

& Borah, 2020; Vigo et al., 2020; Zhu et al., 2020). It is thus proposed that the experience of concurrent social and environmental stressors are likely to exacerbate the expression of PTSD symptoms, further impairing survivors' capacity for Trauma Recovery. Further research examining the role and impact of these social and environmental factors would provide an enhanced understanding of their role in the attainment of Trauma Recovery and identify additional areas for clinical intervention.

The stressors induced by the existence of a homophobic society that has been proposed to foster and maintain a culture of harassment, discrimination, maltreatment, and victimisation (Meyer, 2003) are proposed to account for the differences in PTSD symptom expression and Trauma Recovery identified for participants of minority sexualities (i.e., asexual, pansexual, and other/non-specified orientations). Whilst there were some discrepancies in obtained outcomes for homosexual and bisexual identifying individuals across the studies, overall the results obtained within this program of research highlight the attainment of poorer mental health and Trauma Recovery outcomes for non-heterosexual survivors of interpersonal trauma. The identified differences for individuals of minority sexuality groups and those experiencing concurrent social stressors following the experience of interpersonal trauma, highlight the unique assessment and treatment needs for these individuals. Further evaluation of these differences and the unique needs for individuals identifying within minority sexuality groups to support Trauma Recovery is needed.

Significant differences between the experience of psychological sequelae following exposure to interpersonal trauma and non-personal trauma typologies were documented within this program of research. Interpersonal trauma exposure was identified to result in poorer mental health and Trauma Recovery outcomes than non-personal forms of trauma exposure. These findings were demonstrated to be consistent across participants from all assessed ages, genders, sexualities, and nationalities. These outcomes are consistent with

previous research that has identified interpersonal trauma typologies to be more strongly related to the expression of PTSD symptomatology than other non-personal forms of trauma exposure (Black et al., 2011; Dutton, 1992; Houskamp & Foy, 1991; Iverson et al., 2013; Jones et al., 2001; Stark, 2012; WHO, 2013a). The identified delineation between PTSD symptom expression and Trauma Recovery for individuals exposed to interpersonal versus non-personal forms of trauma exposure highlights the unique and varied impact of interpersonal trauma upon an individuals' symptom expression and recovery. The relational nature of interpersonal trauma has been demonstrated to impose unique psychological burdens upon survivors, contributing to the development of posttrauma cognitions, the maintenance of PTSD symptom expression, and impediments to Trauma Recovery. These posttrauma cognitions have been identified within this program of research and are described within the empirically supported Trauma Cognition Model (TCM).

The Trauma Cognition Model

The results obtained within this program of research provide empirical support for the TCM. The significant relationship between the frequency and severity of the Shame, Blame, and Negative Self posttrauma cognitions and clinically significant PTSD symptomatology were identified for all survivors of interpersonal trauma regardless of their individual differences. The TCM proposes that the posttrauma cognitions of Shame, Blame, and Negative Self interact with the maladaptive affective and behavioural symptoms of PTSD (i.e., avoidance, hyperarousal, negative alterations to mood, intrusion symptoms) in a bidirectional manner to maintain the experience of PTSD symptomatology following exposure to interpersonal trauma. The empirical findings obtained within this program of research highlight the significant role of these cognitions in the development and maintenance of PTSD following exposure to interpersonal trauma and explain the differential experience of PTSD symptom expression across trauma typologies.

The obtained empirical support for the TCM and the interactive process of posttrauma cognitions in maintaining PTSD for survivors of interpersonal trauma has significant clinical implications. The results obtained within this program of research provides preliminary empirical support indicating that therapeutic interventions designed to identify and modify the posttrauma cognitions of Shame, Blame, and Negative Self would likely contribute to a significant reduction in experienced PTSD symptomatology and support Trauma Recovery for survivors of interpersonal trauma. Adoption of the TCM by clinicians would provide a framework for understanding the development and maintenance of PTSD following exposure to interpersonal trauma and provide a guide for the targeted modification of cognitions that maintain PTSD symptomatology and impair Trauma Recovery. Empirically, the identification of Shame, Blame, and Negative Self cognitions and their role in the development and maintenance of PTSD symptomatology, provide a foundation for further research to be conducted. Further evaluation of the TCM within clinical settings and across varying trauma typologies and survivorship populations would provide further validation of the TCM and its utility for survivors of interpersonal trauma.

Within this program of research, the empirical validation of the TCM and the identification of the Shame, Blame, and Negative Self cognitions and their significant role in PTSD symptom expression informed the development of the Cognitive Model of Trauma Recovery (CMTR) and the creation of the Trauma Recovery measure (TRM).

The Cognitive Model of Trauma Recovery

As defined within this program of research, Trauma Recovery is an individual process of cognitive change, that leads to enhanced emotional and behavioural control, and the attainment of intrapersonal mastery, empowerment, and hope for oneself and the future. The CMTR proposes that recovery from interpersonal trauma is achieved through the development, reinforcement, and gradual attainment of three specific positive cognitions

related to an individuals' sense of intrapersonal safety, security, and self-identity. Trauma Recovery is proposed to exist along a continuum as the survivor moves away from self-loathing, blaming others, and self-condemnation, towards a self-acceptance, empowerment, and self-compassion. The outcomes obtained within this program of research have provided preliminary empirical support for the CMTR and demonstrated the CMTR to account for a significant proportion of the variance in experienced PTSD and psychological distress symptomatology for individuals with previous exposure to interpersonal trauma. The three cognitions of Validation, Liberation, and Positive self within the CMTR were identified as significant independent predictors of PTSD symptom expression and psychological distress following interpersonal trauma exposure, providing empirical support for their utility as a means of assessment for posttrauma cognitive change. This empirical evidence was demonstrated to be consistent and equally valid for interpersonal trauma survivors irrespective of their age, gender, sexuality, or nationality. Empirical support for the CMTR provides preliminary evidence for a reconceptualisation of Trauma Recovery following exposure to interpersonal violence and identifies individual cognitions that account for the differential experience of psychopathology and Trauma Recovery for interpersonal trauma survivors.

Empirical support for the CMTR and the interactive process of positive, strengths-based cognitions in facilitating Trauma Recovery for survivors of interpersonal trauma obtained within this program of research has significant clinical implications. The outcomes obtained within this program of research indicate that therapeutic interventions centred upon the identification and development of the positive cognitions of Validation, Liberation, and Positive Self would support the mitigation of experienced psychopathology and facilitate Trauma Recovery for survivors of interpersonal violence. Adoption of the CMTR by clinicians would provide a framework for understanding Trauma Recovery following

exposure to interpersonal violence and provide a guide for the targeted modification of cognitions that support Trauma Recovery. Empirically, the identification of Validation, Liberation, and Positive Self cognitions and their role in Trauma Recovery provide a foundation for further research to be conducted. Further examination of the CMTR and the unique contributions of the Validation, Liberation, and Positive Self cognitions within clinical and research settings would provide an enhanced understanding of Trauma Recovery and further validation of the CMTR within survivorship populations.

The Trauma Recovery Measure

The Trauma Recovery Measure (TRM) was founded upon the TCM and the CMTR that were empirically supported within earlier stages of this program of research. The TRM was developed as a positive, strengths-based instrument to measure Trauma Recovery following exposure to interpersonal violence. The TRM is comprised of 15-items across the three domains of Validation, Liberation, and Positive Self (see Appendix A). Empirical support for the TRM was obtained within this program of research, with the TRM demonstrated to have an acceptable factor structure, adequate overall model fit, excellent internal consistency and adequate construct, content, and criterion validity. The outcomes obtained were demonstrated to be consistent and equally valid for interpersonal trauma survivors irrespective of age, gender, sexuality, or nationality. The TRM and the three cognitions of Validation, Liberation, and Positive Self were also identified to differentiate between individuals experiencing clinically significant PTSD symptomatology following interpersonal trauma exposure and those with no or sub-clinical symptoms.

The attainment of empirical support for the utility of the TRM within a diverse survivorship population has significant clinical implications. The TRM provides a valid and reliable means of measuring Trauma Recovery following exposure to interpersonal trauma that does not identify, monitor, or evaluate psychopathology. The TRM's strong inverse

relationship to trauma-related psychopathology demonstrates the capacity of the measure to evaluate change in response to treatment through a positive strengths-based framework. Implementation of the empirically supported CMTR and TRM within clinical settings provides an opportunity to shift the focus for assessment and treatment away from maladaptive symptoms and psychopathology towards a positive, strength-based, future-oriented assessment and treatment approach. Additionally, the adoption of the TRM within primary care settings may assist in identifying individuals requiring further assessment and treatment. Adopting the TRM as a screening tool would provide an effective means for identifying individuals at risk for developing psychopathology following exposure to interpersonal trauma and provide valuable information about the individuals' current psychological well-being and recovery stage. The identification of vulnerable survivors and the provision of early recovery-oriented intervention would likely minimise the global burden of disease currently resulting from exposure to interpersonal trauma.

The utilisation of the TRM in future research projects can address one of the significant limitations of trauma-related research. As discussed within previous chapters, the use of standardised measurement tools that examine negative trauma-related symptomatology has the potential to elicit participant distress and contribute to participant attrition. The TRM provides a reliable and valid means of assessment for trauma-related psychological sequelae without exposing participants to distressing content. The TRM's capacity to be utilised across trauma populations regardless of age, gender, sexuality, or nationality has also been identified as a strength of the measure.

Conclusion

This program of research proposes a theoretical and empirically supported shift towards a positive, strengths-based approach to Trauma Recovery for interpersonal trauma survivors. The empirically supported TCM, CMTR, and TRM propose an evidence-based

reconceptualisation of Trauma Recovery that redirects the focus of assessment and treatment away from distressing and functionally impairing trauma symptomatology, towards a positive, strength-based Trauma Recovery orientation. The adoption of this approach is proposed to facilitate Trauma Recovery through a focus on positive cognitions and the enhancement of the survivors' autonomy, safety, and sense of self. The TRM provides a reliable and empirically validated means of evaluating Trauma Recovery for a diverse population of interpersonal trauma survivors through an evaluation of these positive cognitions. Overall, the outcomes obtained within this program of research provide empirical support for the CMTR, the TRM, and the utilisation of a positive, strengths-based approach to the treatment and assessment of Trauma Recovery for survivors of interpersonal trauma.

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Appendices

Appendix A

Trauma Recovery Measure

Please consider how you have thought and felt about yourself over the last week and indicate the degree to which you believe the statements provided below are true for you.

5 = True of Me *4 = Somewhat True of Me* *3 = Neither True or Untrue of Me*
2 = Somewhat Untrue of Me *1 = Untrue of Me*

	5	4	3	2	1
1. I respect myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel free to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am in control of my life and my decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I accept all parts of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I know my worth as a person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel empowered to pursue my goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I have overcome my traumatic experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I like myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I have hope for my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am worthy of love	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I can rely on myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I choose to focus on myself and my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am enough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I have changed for the better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I can cope with life's ups and downs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Trauma Recovery Measure (With Domain Specifiers)

Please consider how you have thought and felt about yourself over the last week and indicate the degree to which you believe the statements provided below are true for you.

5 = *True of Me* 4 = *Somewhat True of Me* 3 = *Neither True or Untrue of Me*
 2 = *Somewhat Untrue of Me* 1 = *Untrue of Me*

	5	4	3	2	1
1. I respect myself (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel free to make my own decisions (L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am in control of my life (L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I accept all parts of myself (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I know my worth as a person (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel empowered to pursue my goals (L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I have overcome my traumatic experiences (PS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I like myself (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I have hope for my future (PS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am worthy of love (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I can rely on myself (PS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I choose to focus on myself and my future (PS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am enough (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I have changed for the better (PS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I can cope with life's ups and downs (PS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Trauma Recovery Measure Scoring Instructions

The TRM is a 15-item self-report measure to assess an individuals' attainment of recovery following the experience of trauma. Items on the TRM correspond to the three domains of Validation, Liberation, and Positive Self. The TRM is a self-report measure that can be completed in person, over the phone, or online. It can be read by the respondent or read to the respondent by an interviewer with verbal answers transcribed into text format by the interviewer. Completion time is approx. 5 minutes.

Scoring for the TRM

Respondents are asked to indicate the degree to which they believe the statements provided are reflective of how they typically think and feel about themselves on a 5-point likert scale ranging from five to one. The TRM provides a total scale score and three sub-scale scores. All 15 items of the TRM are scored from "5 = *True of me*" to "1 = *Untrue of me*" and are summed to provide a total scale score between 15 and 75, with higher scores indicative of greater progression towards Trauma Recovery (see stages of recovery table). Success in moving towards the sub-scale domains of Validation, Liberation, and Positive Self are calculated through the summation of subscale items, with higher scores indicative of greater progression towards each domain.

Validation Sub-scale – Items 1, 4, 5, 8, 10, & 13 are summed and divided by 6 to provide a total sub-scale score between 5 and 1.

Liberation – Items 2, 3, & 6 are summed and divided by 3 to provide a total sub-scale score between 5 and 1.

Positive Self – Items 7, 9, 11, 12, 14, & 15 are summed and divided by 6 to provide a total sub-scale score between 5 and 1.

Stages of Trauma Recovery with the TRM

Stages of Trauma Recovery			
	Early	Middle	Late
Validation	The individual is working towards an acceptance and approval of themselves and is developing an awareness of thoughts and feelings of internal value and worthiness.	The individual is developing an acceptance and approval of themselves and is able to experience thoughts and feelings of internal value and worthiness.	The individual possesses an acceptance and approval of themselves and frequently experiences thoughts and feelings of internal value and worthiness.
Liberation	The individual is working towards a personal sense of autonomy and control and is developing an awareness of thoughts and feelings relating to confidence, capability, and self-determination.	The individual is developing a personal sense of autonomy and control and is able to experience thoughts and feelings relating to confidence, capability, and self-determination.	The individual possesses a personal sense of autonomy and control and frequently experiences thoughts and feelings relating to confidence, capability, and self-determination.
Positive Self	The individual is working towards a strong positive self-identity and is developing an awareness of thoughts and feelings related to care and compassion for themselves.	The individual is developing a strong positive self-identity and is able to experience thoughts and feelings related to care and compassion for themselves.	The individual possesses a strong positive self-identity and frequently experiences thoughts and feelings related to care and compassion for themselves.

Appendix B

Gatekeeper Approval Request



Dear Administrator,

I am writing to request your permission to use your social media site to promote a research project entitled Examining the factors contributing to trauma recovery following exposure to intimate partner violence, which has been given ethical clearance under reference SS00181.

FACULTY OF SOCIETY & DESIGN
Bond University
Gold Coast, Queensland 4229
Australia
Toll free 1800 650 121
(within Australia)
Ph: +61 7 5595 2522
Fax: +61 7 5595 2545
(from overseas)
Email: fsd@bond.edu.au
ABN 88 010 694 121
CRICOS CODE 00078

This research is being conducted by Psychologist, Sharelle Smith and Clinical Psychologist and Ass/ Professor, Dr Aileen Pidgeon from Bond University as part of PhD Degree. The study has been approved by Bond University Human Research Ethics Committee and as part of that approval process, we are required to obtain gatekeeper permission from sites providing access to potential participants.

This study is exploring the impact of stressful life events and intimate partner violence on psychological well-being. It is anticipated that the data collected during this study will assist us in understanding the needs of individuals exposed to intimate partner violence, raise awareness about the impact of trauma on psychological well-being, and assist in the development of accessible psychological interventions for trauma recovery.

The project consists of an online survey than can typically be answered by participants within 30 minutes. Participants will also have to option to provide contact details to be considered for participation in individual and group intervention trials for a brief trauma-recovery program.

If you are willing to be involved please provide a written response by way of return email or message acknowledging that you have read the Participant Information Statement, you understand the nature of the study being conducted and the risks and likely benefits of participation in this study, and you give permission for the research to be advertised on your site.

Yours sincerely,



Dr Aileen Pidgeon
Principal Investigator
Email: apidgeon@bond.edu.au



Sharelle Smith
Registered Psychologist & PhD Scholar
Email: sharelle.smith@student.bond.edu.au

Appendix C

Participant Information Statement

Project Title: Examining the factors contributing to trauma recovery following exposure to intimate partner violence

Ethics Reference: SS00181

You are invited to participate in a research study examining the impact of traumatic life events and intimate partner violence, on psychological well-being. The research team consists of Psychologist and PhD scholar Sharelle Smith and Principal Investigator, Registered Clinical Psychologist, and Ass/Professor of Psychology, Dr Aileen Pidgeon.

As part of this study, you will be asked to complete an online questionnaire that will require approximately 30 minutes to complete. Participants will also have to option to provide contact details to be considered for participation in individual and group intervention trials for a brief trauma-recovery program.

The focus of this investigation is on previous exposure to intimate partner violence and/or stressful life events. As such, participants currently engaged in an intimate partner violence relationship will not be eligible to participate in this research.

Participation in this study is voluntary and you may withdraw at any time without consequence. Should contact information be provided, a request to withdraw personal information and survey responses will be facilitated up to three months post survey completion. The data collected in this study will be used as one component of a larger research study aiming to examine a brief trauma-recovery program for individuals exposed to intimate partner violence. As such, data may be shared with co-researchers within the university faculty. Data will be stored in a secured location at Bond University for a period of five years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

Your participation will assist us in understanding the needs of individuals exposed to intimate partner violence, raise awareness about the impact of trauma on psychological well-being, and assist in the development of accessible psychological interventions for trauma recovery.

In the event that recalling experiences of intimate partner violence and/or stressful life events causes you distress, we encourage you to withdraw from continued participation and to talk to a health care provider or trusted friend. Additional support can be obtained by contacting Lifeline 24 hour counselling service on 13 11 14, visiting the Black Dog Institute Website <http://www.blackdoginstitute.org.au> , or The National Domestic Violence Hotline online chat service <http://www.thehotline.org>

Should you have any complaints concerning the manner in which this research is being conducted please make contact with the Bond University Human Research Ethics Committee on +61 7 5595 4194 or via e-mail at ethics@bond.edu.au

We thank you for taking the time to assist us with this research.

Yours Sincerely,



Dr Aileen Pidgeon
Principal Investigator
Email: apidgeon@bond.edu.au



Sharelle Smith
Registered Psychologist & PhD Scholar
Email: sharelle.smith@student.bond.edu.au



FACULTY OF SOCIETY & DESIGN

Bond University
Gold Coast, Queensland 4229
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Toll free 1800 650 121
(within Australia)

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Fax: +61 7 5595 2545
(from overseas)

Email: fsd@bond.edu.au

ABN 88 000 694 121
CRICOS CODE 00079

Appendix D

Online Questionnaire

Ethics Reference Number: SS00181

Examining the Impact of Traumatic Life Events on Trauma Recovery

My name is Sharelle Smith and I am a Clinical Psychologist currently completing a Doctor of Philosophy degree at Bond University under the supervision of Dr Aileen Pidgeon.

This study explores the impact of traumatic life events, including intimate partner violence, on psychological well-being. I am specifically interested in the relationship between exposure to traumatic life events, the presence of post-traumatic stress symptoms, and the potential for trauma recovery.

As part of this study, I will invite you to complete an online questionnaire. Participation is sought from adults (aged 18 and over) who have experienced a stressful/traumatic event. Participation in this study is voluntary and you may withdraw at any time without consequence. Your provided responses will be completely anonymous, and no individual will be identified in our report of results. Information provided prior to withdrawal will be recorded and included in the study, as the anonymous collections of responses will make it impossible to identify and eliminate individual information. The data collected in this study will be treated with complete confidentiality and not made accessible to any person outside of the research team. Data will be stored in a secure location at Bond University for a period of five years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

It is anticipated that the data collected during this study will assist us in understanding the needs of individuals exposed to traumatic life events, raise awareness about the impact of trauma on psychological well-being, and assist in the development of available services to assist people affected by trauma.

Participation in this study is voluntary. In the event that recalling experiences of intimate partner violence and/or stressful life events causes you distress, we encourage you to withdraw from continued participation and to talk to a health care provider or trusted friend. Additional support can be obtained by contacting Lifeline 24 hour counselling service on 13 11 14, visiting the Black Dog Institute Website <http://www.blackdoginstitute.org.au>, or The National Domestic Violence Hotline online chat service <http://www.thehotline.org>

Should you have any complaints concerning the manner in which this research is being conducted, please make contact with the Bond University Human Research Ethics Committee, Bond University Office of Research Services. Bond University, Gold Coast, 4229, Australia. Tel: 07 5595 4194. Fax: 07 5595 1120 Email: ethics@bond.edu.au

Yours Sincerely,

Dr Aileen Pidgeon Sharelle Smith
Email: apidgeon@bond.edu.au Email: ssmith@bond.edu.au

I confirm that I have read and understood the Participant Information Statement and I agree to take part in the survey

- I agree
 I choose not to participate

What is your age (in years)?

What is your gender?

- Male
 Female

Other

In what country were you born?

What is your sexual orientation?

- Heterosexual (Straight)
 Homosexual (Gay)
 Bisexual
 Other - Please specify

What is your current relationship status?

- Single
 Married
 Divorced
 Partnered
 Other - Please specify

Have you experienced Intimate Partner Violence in a PREVIOUS relationship?

Intimate partner violence includes any behavior that causes physical, psychological (emotional), or sexual harm - also commonly referred to as domestic violence.

- Yes
 No

Listed below are a number of difficult or stressful events that sometimes happen to people. For each event check one or more of the boxes to the right to indicate your experience of the listed event.

Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

	Happened to me	Witnessed it	Learned about it	Part of my job	Not sure	Doesn't apply
Natural disaster (flood, hurricane, tornado, earthquake)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire or explosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transportation accident (car accident, boat accident, train wreck, plane crash)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Serious accident at work, home, or during recreational activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposure to toxic substance (dangerous chemicals, radiation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical assault (being attacked, hit, slapped, kicked, beaten up)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assault with a weapon (being shot, stabbed, threatened with a knife, gun, bomb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sexual assault (rape, made to perform any sexual act through force or threat of harm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other unwanted or uncomfortable sexual experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Combat or exposure to a war-zone (in the military or as a civilian)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Captivity (being kidnapped, abducted, held hostage, prisoner of war)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Life-threatening illness or injury	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Severe human suffering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sudden violent death (homicide, suicide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sudden, unexpected death of someone close to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Serious injury, harm, or death you caused to someone else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any other very stressful event or experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please consider how you have thought and felt about yourself over the last week and indicate the degree to which you believe the statements provided below are true for you.

	True of me	Somewhat true of me	Neither true or untrue	Somewhat untrue of me	Untrue of me
I respect myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel free to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel connected to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am in control of my life and my decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am a strong person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I accept all parts of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know my worth as a person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel empowered to pursue my goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am more than my trauma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am proud of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have overcome my traumatic experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am a worthy person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I see myself as a capable person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am responsible for my actions and my reactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a positive attitude towards myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have hope for my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am worthy of love	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel like an equal in the presence of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can rely on myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I choose to focus on myself and my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am enough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have changed for the better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can cope with life's up and downs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please indicate how much you have been bothered by that problem in the past month.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
Repeated, disturbing, and unwanted memories of the stressful experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Repeated, disturbing dreams of the stressful experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling very upset when something reminded you of the stressful experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having strong physical reactions when something reminded you of the stressful experience (e.g., heart pounding, trouble breathing, sweating)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoiding memories, thoughts, or feelings related to the stressful experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoiding external reminders of the stressful experience (e.g., people, places,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

conversations, or situations)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble remembering important parts of the stressful experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having strong negative beliefs about yourself, other people, or the world (e.g., having thoughts such as: I am bad, here is something wrong with me, no one can be trusted)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blaming yourself or someone else for the stressful experience or what happened after it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having strong negative feelings such as fear, horror, anger, guilt, or shame	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of interest in activities that you used to enjoy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling distant or cut off from other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble experiencing positive feelings (e.g., being unable to feel happiness or love)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable behavior, angry outbursts, or acting aggressively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking too many risks or doing things that could cause you harm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being "super alert" or watchful or on guard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling jumpy or easily startled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having difficulty concentrating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble falling or staying asleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

	Not true of me	Somewhat true of me	Mostly true of me	Completely true of me
As a result of my traumatic experience, I have lost respect for myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of what happened to me, others find me less desirable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am ashamed of myself because of what happened to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of my traumatic experience, others have seen parts of me that they want nothing to do with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of my traumatic experience, I cannot accept myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew what happened to me, they would view me as inferior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew what happened to me, they would be disgusted with me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am ashamed of the way I behaved during my traumatic experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am so ashamed of what happened to me that sometimes I want to escape from myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of my experience, I find myself less desirable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am ashamed of the way I felt during my traumatic experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew what had happened to me, they would look down on me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of my traumatic experience, there are parts of me I want to get rid of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew what happened to me, they would not like me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of my traumatic experience, I feel inferior to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew what happened to me, they would be ashamed of me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew what happened to me, they would find me unacceptable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of my traumatic experience, a part of me has been exposed that others find shameful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew how I behaved during my traumatic experience, they would be ashamed of me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My traumatic experience has revealed a part of me that I am ashamed of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of my traumatic experience, I don't like myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If others knew how I felt during my traumatic experience, they would be ashamed of me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of what happened to me, I am disgusted with myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am so ashamed of what happened to me that sometimes I want to become invisible to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We are interested in the kind of thoughts you may have had after a traumatic experience. Below are a number of statements that may or may not be representative of your thinking.

Please indicate how much you agree or disagree with each statement.

	Totally disagree	Disagree very much	Disagree slightly	Neutral	Agree slightly	Agree very much	Totally agree
The event happened because of the way I acted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't trust that I will do the right thing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am a weak person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will not be able to control my anger and will do something terrible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't deal with even the slightest upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to be a happy person but now I am always miserable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People can't be trusted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have to be on guard all the time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel dead inside	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You can never know who will harm you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have to be especially careful because you never know what can happen next	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am inadequate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I think about the event, I will not be able to handle it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The event happened to me because of the sort of person I am	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My reactions since the event mean that I am going crazy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will never be able to feel normal emotions again	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The world is a dangerous place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Somebody else would have stopped the event from happening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have permanently changed for the worse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like an object, not a person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Somebody else would not have gotten into this situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't rely on other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel isolated and set apart from others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have no future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't stop bad things from happening to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People are not what they seem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My life has been destroyed by the trauma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is something wrong with me as a person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My reactions since the event show that I'm a lousy copper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is something about me that made the event happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I don't know myself anymore	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't rely on myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nothing good can happen to me anymore	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please read the statements below and indicate how often you have the following thoughts in relation to your experience of the stressful event.

	Almost never	Sometimes	Regularly	Often	Almost always
I think that I have to accept that this has happened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often think about how I feel about what I have experienced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I can learn something from the situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel that I am the one who is responsible for what has happened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that I have to accept the situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am preoccupied with what I think and feel about what I have experienced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think of pleasant things that have nothing to do with it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that I can become a stronger person as a result of what has happened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I keep thinking about how terrible it is what I have experienced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that others are responsible for what has happened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think of something nice instead of what has happened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think about how to change the situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that it hasn't been too bad compared to other things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that basically the cause must lie within myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think about a plan of what I can do best	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that there are worse things in life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I continually think how horrible the situation has been	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that basically the cause lies with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please read each statement and indicate how often in the last 4 weeks you have experienced the following.

	None of the time	A little bit of the time	Some of the time	Most of the time	All of the time
Tired out for no good reason	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel so nervous that nothing could calm you down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel restless or fidgety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel so restless you could not sit still	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel that everything was an effort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel so sad that nothing could cheer you up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feel worthless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the statements below, please indicate how you typically act towards yourself in difficult times.

	Almost never	Sometimes	Regularly	Often	Almost always
When I fail at something important to me I become consumed by my feelings of inadequacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to be understanding and patient towards those aspects of my personality I don't like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When something painful happens, I try to take a balanced view of the situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm feeling down, I tend to feel like most other people are probably happier than I am	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to see my failings as part of the human condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm going through a very hard time, I give myself the caring and tenderness I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When something upsets me I try to keep my emotions in balance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I fail at something that's important to me, I tend to feel alone in my failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm feeling down I tend to obsess and fixate on everything that's wrong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm disapproving and judgmental about my own flaws and inadequacies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm intolerant and impatient towards those aspects of my personality I don't like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>