MEASURING AND CHARACTERIZING MORAL INJURY IN VULNERABLE POPULATIONS

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By

SOPHIA L. ROTH, B.A.

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                    Populations

AUTHOR: Sophia L. Roth

                    B.A. (Criminology),
                    Carleton University

                    B.A. (Honours Psychology),
                    Carleton University

SUPERVISOR: Margaret C. McKinnon, Ph.D., C.Psych.
                    Bruno J. Losier, Ph.D., C.Psych.

COMMITTEE: Heather M. Moulden, Ph.D., C.Psych.
                    Louis A. Schmidt, Ph.D.

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Lay Abstract

Moral injury is a new psychological syndrome developed to understand an individual's response to a moral trauma. As with other traumatic stress disorders, some people may develop a moral injury after experiencing a situation or event that violates deeply held moral standards. These morally injurious events may be moral violations perpetrated by the individual and result in deep feelings of shame and guilt, or may be moral betrayals by a trusted other and result in feelings of anger and loss of trust. To better understand the causes, symptoms, and consequences of moral injury, we must first develop tools to measure and assess it. This thesis outlines the key steps involved in developing new moral injury assessments in two groups who have an elevated risk of experiencing morally injurious events and so may be more likely to develop a moral injury: justice-involved individuals found Not Criminally Responsible and Public Safety Personnel.

Abstract

Moral injury is a relatively new psychological syndrome characterized by profound emotional, cognitive, and social pain following perceived moral violations. Though often overlapping, moral violations can involve either the perpetration of a moral transgression (via action or inaction) or the experience of a moral betrayal by a trusted other. In each case, symptoms of moral injury may include guilt, shame, anger, loss of trust and meaning, and social withdrawal.

To date, the study of moral injury has remained nearly exclusive to the military arena. In turn, the aim of this thesis is to highlight the relevance of moral injury to other populations vulnerable to its effects. These include: 1) justice-involved individuals found Not Criminally Responsible on Account of Mental Disorder who may experience moral injury after regaining insight into their offending behaviour; and 2) Public Safety Personnel who are often exposed to morally ambiguous situations while under high levels of social responsibility.

To appreciate the impact of moral injury for these populations, adequate tools must first be developed to measure and assess it. The three studies included in this dissertation outline the key steps to instrument development using a mixed-method approach: first, a qualitative investigation with justice-involved individuals explores the unique emotional consequences following a criminal offence that will inform subsequent phases of instrument development; second, quantitative inquiries are taken to construct, evaluate, and employ a new moral injury assessment for Public Safety Personnel to uncover important causes and consequences of moral injury in this group. This dissertation serves

as a strong indicator that moral injury is a unique and costly health outcome relevant

across societal groups.

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and my family –
thank you.

Sophia L. Roth,
McMaster University,
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List of Abbreviations and Symbols

MI: Moral Injury

PMIES: Potentially Morally Injurious Events

PTSD: Post-traumatic Stress Disorder

DSM: Diagnostic and Statistics Manual

PSP: Public Safety Personnel

NCR: Not Criminally Responsible

MIA-PSP: Moral Injury Assessment – Public Safety Personnel

MDD: Major Depressive Disorder

SUD: Substance Use Disorder

ADHD: Attention Deficit Hyperactivity Disorder

TRSI: Trauma-related Shame Inventory

TRGI: Trauma-related Guilt Inventory

PCL-5: PTSD Check List

DASS: Depression Anxiety Stress Scale

MDI: Multiscale Dissociation Inventory

WHODAS: World Health Organization Disability Assessment Schedule

WHO: World Health Organization

MIES: Moral Injury Events Scale

SES: Socio-economic Status

ACE: Adverse Childhood Experiences

DERS: Difficulties with Emotion Regulation Scale

ER: Emotion Regulation

KMO: Kaiser–Meyer–Olkin Test

MCAR: Missing Completely at Random

EFA: Exploratory Factor Analysis

Declaration of Academic Achievement

This dissertation is comprised of three studies, each of which were led in full or in part by the student. The conceptualization and design of Study 1 was led by the student including the development of the qualitative interview guide. Recruitment and data collection were conducted by the student in addition to transcription of all qualitative audio recordings. The student led coding and analysis of Study 1 qualitative data and prepared the written manuscript. For Studies 2 and 3, the student conceptualized the analyses, carried out data cleaning, analysis, and interpretation, and prepared the manuscripts for publication. The student made all revisions to manuscripts based on advice and feedback from co-authors and journal editors. This dissertation research was completed between September 2018 and August 2022. To meet the requirements of the "sandwich thesis", the contributions of co-authors are described as follows.

The first dissertation study was co-authored by Aamna Qureshi, Dr. Heather Moulden, Dr. Gary Chaimowitz, Dr. Ruth Lanius, Dr. Bruno Losier, and Dr. Margaret McKinnon who each critically reviewed the manuscript prior to publication. Drs. Moulden, Losier, and McKinnon provided conceptual and clinical supervision and support over the development of the study. Drs. Chaimowitz and Lanius additionally contributed clinical advice and support. Aamna Qureshi assisted in data collection and analysis.

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to publication. Drs. McKinnon, Losier, and Lanius provided supervision and support around study design and analysis. Alina Protopopescu and Dr. Lloyd led data collection with support from Charlene O'Connor. Writing support was provided by Dr. Andrews.

The third dissertation study was co-authored by Dr. Krysta Andrews, Alina Protopopescu, Dr. Chantelle Lloyd, Charlene O'Connor, Dr. Bruno Losier, Dr. Ruth Lanius, and Dr. Margaret McKinnon who each critically reviewed the manuscript prior to publication. Drs. McKinnon, Losier, and Lanius provided supervision and support around study design and analysis. Alina Protopopescu and Dr. Lloyd led data collection with support from Charlene O'Connor. Writing support was provided by Dr. Andrews.

Chapter 1 | General Introduction

Morality is a concept unique to humans and functions as a guide to human behaviour. Specifically, moral values help us identify and enact prosocial behaviour while navigating and suppressing antisocial impulses that may benefit an individual but harm others within their social group (Haidt, 2003; Litz et al., 2009). While the study of morality is not new to the field of psychology, the multifactorial mechanisms underlying moral behaviour are still far from understood and have proved challenging to measure psychometrically.

Research on moral influencers has historically concentrated on *extrinsic* motivation resulting from familial or societal pressure. The study of moral motivation via *intrinsic* pathways is less researched and has primarily focused on the development of cognitive mechanisms implicated in moral behaviour, such as moral reasoning (Haidt, 2003; Nelissen et al., 2013). More recently, research has begun to acknowledge the important role of moral emotions in the development and maintenance of social behaviour and has ventured to develop instruments for their measurement.

Moral emotions are those that are concerned with well-being and justice and typically arise in an individual after evaluating a situation or specific behaviour as either good or bad, right or wrong (Haidt, 2003; Malti & Latzko, 2010; Tangney, Stuewig, & Mashek, 2007). Existing research on moral emotions has primarily considered each emotion in isolation to explore their unique implications for emotional and psychological adjustment (Barón et al., 2018; Stuewig et al., 2015; Stuewig & McCloskey, 2005). In contrast, much less is known about how moral emotions influence and interact with moral behaviour (Teper et al., 2015). Additionally, there is a paucity of research exploring how

constellations of moral emotions group together into functional responses to moral behaviour, or what happens when moral emotional pain moves beyond the realm of functionally adaptive and into clinical or sub-clinical territory. The following chapters will outline the current literature on the moral emotions most relevant to moral pain and moral behaviour and present a set of studies designed to explore and measure a novel psychological syndrome, moral injury, intended to characterize the cluster of symptoms that often follow the most extreme moral violations. Collectively, the three studies comprising this dissertation will illustrate the phases of instrument development necessary for measuring a new construct: formative qualitative work, item development and testing, and instrument implementation and modeling.

1.1 Morality

Morality represents a fundamental assumption regarding how humans should behave in the world. Morals consist of rules for social conduct, both formal (i.e., law) and informal (e.g., culturally driven codes of conduct), that result from shared societal and universal beliefs about right and wrong (Haidt, 2003; Litz et al., 2009). Adherence to, and violation of, moral codes of conduct have consequences at both the individual and social level (M. Lewis, 1995; Tangney et al., 2007). Succeeding or failing to meet the moral standards endorsed by an individual and/or their social group will influence how well the individual forms and maintains relationships with other members of the group, as well as impact their own personal sense of self and standards of success or failure (M. Lewis, 1995).

Moral behaviours are those concerning the welfare of others, particularly in instances where actions or inactions may have negative consequences on another's well-being and for which there exists a general agreement that those behaviours are wrong (e.g., lying, stealing, violence, or other criminal behaviour; Tangney et al., 2007). Being moral is a day-to-day process beginning with an individual's internalized moral standards (i.e., what one thinks they should do), moving through decision making and moral intentions (i.e., what one decides and plans to do), and ending with moral behaviour (i.e., what one does). Indeed, there is a strong link between one's moral standards, their intention to act, and their actual behaviour; yet, these elements of the moral chain do not always align to produce moral behaviour. Though most individuals have strong moral standards, there are several factors that influence moral decision making and thus, moral behaviour, including situational context or the influence of others (Litz et al., 2009; Tangney et al., 2007).

Recently, researchers studying morality have turned to internal mechanisms of control, such as emotional processes, to help explain the link between moral standards and behavioural outcomes, including why an intact moral system does not always result in altruistic behaviour and what the consequences of such a conflict may be for the individual whose moral standards were not upheld.

1.2 Moral Emotions

One consequence of an individual's moral successes and failures is the experience of moral emotions. Moral emotions differ from basic emotions in their eliciting events and motivated action tendencies: the more an emotion is elicited by concern for others and the more the emotion motivates prosocial behaviour, the more it can be considered a moral

emotion (Haidt, 2003). Unlike basic emotions such as happiness and sadness, typical

moral emotions like anger and shame arise out of concern for the well-being of someone

other than the self (though oneself may be of concern, as well) and motivate actions that

benefit others or uphold justice.

Broadly, moral emotions can be grouped into two families based on shared features:

other-focused moral emotions and self-conscious moral emotions (Haidt, 2003; Tangney

et al., 2007; Teper et al., 2015). Other-focused moral emotions are those that are

experienced when observing either admirable or abhorrent acts of others, and which then

motivate the observers to engage (or avoid) in similar behaviour (Haidt, 2003; Tangney et

al., 2007). Other-focused moral emotions can be subdivided into positively valanced

emotions (elevation and gratitude) and negatively valanced emotions (righteous anger,

contempt, and disgust).

In contrast, self-conscious moral emotions are those that involve an individual's

reaction to their own characteristics and behaviours (Tracy & Robins, 2006). Like other-

focused emotions, the self-conscious emotions can be subdivided into the negatively and

positively valanced emotions guilt, shame, and pride (Haidt, 2003; Tangney et al., 2007).

Emotions from both families arise in interpersonal situations where moral norms have

been either upheld or violated; additionally, moral emotions (the self-conscious moral

emotions, in particular) necessitate processes of self-reflection and self-evaluation

regarding one's responsibility in the situation (Tangney, 1999; Teper et al., 2015; Tracy

& Robins, 2006). This self-evaluation may be conscious and explicit or below conscious

awareness, but the heightened sense of self-awareness allows an individual to compare

their behaviour or that of others to their own moral standards and elicits an emotional response depending on the congruency of these two factors (Tracy & Robins, 2006). For example, when an individual credits a morally relevant outcome to their own positive or negative attributions, they may experience a self-conscious emotion such as pride or shame.

1.3 Moral Behaviour

Moral emotions, like all emotions, help to organize and prioritize ongoing behaviour to respond to the environment in the most adaptive way (Muris & Meesters, 2014). Similar to how basic emotions drive behaviour (e.g., fear signaling a physical threat which motivates escape behaviour), moral emotions respond specifically to moral events and provide the motivational power to promote 'doing good' and discourage 'doing bad' (Muris & Meesters, 2014; Tangney, 1990; Tangney et al., 2007).

Moral emotions have the potential to motivate behaviour in two ways. First, emotions evoked directly following a moral event provide immediate feedback in the form of affective punishment or reinforcement (Tangney et al 2007). Here, moral emotions motivate action to reduce the negative affect (or increase the positive affect) and encourage inhibition (or repetition) of the same behaviour in the future (Krettenauer, Colasante, Buchmann, & Malti, 2014; Tangney et al., 2007). Second, an individual's emotion expectancies (the emotions they anticipate experiencing in a situation) provide critical information about the desirability of future actions (Tangney et al., 2007). This informs moral decision making and allows one to orient their behaviour in such a way as to avoid anticipated negative emotions and achieve anticipated positive emotions (Haidt,

2003; Krettenauer, Jia, & Mosleh, 2011; Teper et al., 2015). In these two ways, moral emotions can motivate behaviour both in anticipation of a moral decision and as a consequence that influences future decision making.

1.3.1. Guilt, Shame, and Anger.

For the purposes of this dissertation, the negatively valanced moral emotions guilt, shame, and anger are of particular interest given their strong propensity to motivate moral behaviour and their connection to moral pain more broadly. The current section will review existing literature on these three core elements of the moral compass with an emphasis on their implications for pro- and anti-social behaviour.

Guilt and shame are closely related emotions that are often and incorrectly used interchangeably and confounded in moral emotion research (Brem, Shorey, Anderson, & Stuart, 2018; Stuewig et al., 2015; Tangney, Miller, Flicker, & Barlow, 1996; Tibbetts, 2003). While both are self-conscious emotions that alert an individual to their own wrongdoing and need for corrective action, they have distinct features, action tendencies, and implications for behaviour, and can occur in tandem or independently as well as publicly or in private (Haidt, 2003; Tangney, Miller, et al., 1996).

Guilt is evoked in situations where an individual judges their behaviour to be wrong or immoral (either through action or inaction), anticipates that it will cause harm to another, and feels responsible for that harm (Ausubel, 1955; Haidt, 2003; Lindsey, 2005). Specific to guilt is the focus on the behaviour; a guilty individual will evaluate a specific act as a moral failure rather than generalize this moral failing to the entire self (H. B. Lewis, 1971; M. Lewis, 1995; Tangney, 1999). Guilt is associated with feelings of tension,

remorse, and regret over the moral violation, as well as time spent ruminating over the

perceived immoral act and feeling concern for the victim of the moral failure (M. Lewis,

1995; Tangney, 1999).

Multiple studies have found that guilt-expectancies decrease the likelihood of

engaging in antisocial behaviour (Barón et al., 2018; Furukawa et al., 2012; Menesini &

Camodeca, 2008; Olthof, 2012; van Tijen, Stegge, Terwogt, & van Panhuis, 2004).

Individuals who endorse a propensity to feel guilty following moral violations are less

likely to engage in antisocial behaviour such as anger outbursts, violence, or aggressive

bullying (Stuewig et al., 2010; Tangney et al., 1996, 1992). These relations hold true for

more extreme forms of antisocial behaviour including criminal activities. In community

samples, guilt-proneness measured in childhood is negatively associated with criminality

in adolescence and adulthood, including incidences of early drinking and drug use, being

arrested, or spending time in jail (Krettenauer & Eichler, 2006; Stuewig & McCloskey,

2005; Stuewig et al., 2015; Svensson, Weerman, Pauwels, Bruinsma, & Bernasco, 2013;

Tibbetts, 2003). In offending populations, as well, studies have found guilt to be

consistently negatively associated with measures of criminal risk including psychopathy,

anger and violence, levels of antisocial personality, criminogenic cognitions, and risk of

recidivism (Tangney et al., 2014; Tangney, Stuewig, Mashek, & Hastings, 2011).

Additionally, experiences of guilt following a moral transgression have unique

implications for the moral violator. Though experiences of guilt are unpleasant and

uncomfortable, the focus on specific behavioural shortcomings rather than shortcomings

of the self makes guilt the less painful of the self-conscious emotions and allows for

guilty individuals to focus on a specific moral transgression, the harm done to others, and one's own responsibility. In turn, guilt tends to be associated with a subsequent increase in prosocial behaviour. In several studies across childhood, adolescence, and adulthood, both state- and trait-guilt were consistently and positively predictive of prosocial behaviours following a guilt-inducing task such as standing up for a bullied peer, helping repair broken items, sharing, or signing up to donate blood (Barón et al., 2018; Lindsey, 2005; Menesini & Camodeca, 2008).

Additionally, as guilt responds to specific and controllable behavioural transgressions, it tends to be less threatening to an individual's sense of self. In turn, guilty individuals are more likely to accept responsibility for their actions and demonstrate reduced tendencies toward unproductive, defensive means of coping such as externalizing blame (Furukawa et al., 2012; Tangney, Miller, et al., 1996; Tangney, Stuewig, & Hafez, 2012; Tangney et al., 1992). Instead, guilt has been shown to be predictive of approach-oriented, constructive means of reparation following moral wrongdoings, including confessing, apologizing, and attempts to undo harm (Barrett, Zahn-Waxler, & Cole, 1993; M. Lewis, 1995; Tangney et al., 2007; Tangney, Miller, et al., 1996; Tangney, 1999; Tracy & Robins, 2006). Though evidence suggests that guilt tends to be positively associated with proactive means of reparation and self-forgiveness and negatively associated with unconstructive reparative action like self-harm, high levels of guilt combined with an unforgiving victim or no method of atonement can lead to more mild forms of self-punishment as a means of reducing negative affect (Griffin et al., 2016; Nelissen & Zeelenberg, 2009).

In contrast to guilt, shame is the more intense and painful of the self-conscious moral emotions. Like guilt, shame results when an individual appraises their actions as morally wrong and having caused harm to others (Ausubel, 1955; Haidt, 2003). Instead of focusing on the immoral behaviour, however, an individual experiencing shame focuses on an immoral self and concern over how others will perceive them (H. B. Lewis, 1971; M. Lewis, 1995). Because the individual feels bad not only about their behaviour but also about their global self, shame is more associated with intensely negative feelings of worthlessness, powerlessness, and self-depreciation (Haidt, 2003; Muris & Meesters, 2014; Tangney, 1999).

Though universally accepted as belonging to the family of moral emotions, the adaptive morally relevant action tendencies of shame are less clear than those of guilt. Shame, with its focus on a flawed self and feelings of exposure, is less likely to result in prosocial behaviour and more likely to motivate defensive and avoidant behaviour including the desire to disappear, hide or conceal oneself, and escape (Barón et al., 2018; Menesini & Camodeca, 2008; Muris & Meesters, 2014; Tangney, Miller, et al., 1996). Shamed individuals attribute their wrongdoing to a stable and uncontrollable defect of the self, making them less likely to want to accept responsibility for their actions and instead resort to avoidant and defensive means of coping with moral pain, such as externalizing blame (Furukawa, Tangney, & Higashibara, 2012; Stuewig, Tangney, Heigel, Harty, & McCloskey, 2010; Tangney, 1990; Tangney, Wagner, Fletcher, & Gramzow, 1992; Tracy & Robins, 2006). Externalizing blame may minimize a shamed individual's moral distress by excusing themselves from responsibility and placing fault on someone else

(Griffin et al., 2016), but is in turn linked to overt aggressive behaviours such as verbal, physical, and destructive aggression following a moral violation (Stuewig & McCloskey, 2005; Stuewig et al., 2010; Tangney, 1990, 1999).

When defensive or avoidant strategies to cope with negative affect are unavailable, shamed individuals often resort to unconstructive means of reparation such as self-punishment to reduce their negative affect (Tangney et al., 2007; Tracy & Robins, 2006). Punishing oneself by abstaining from pleasurable activities or through active punishment communicates to the victim and social group that the wrongdoer shares group values and recognizes that their actions were violating (Griffin et al., 2016). Shame has been positively associated with various forms of self-punishment; for example, a study by VanDerhei and colleagues found that feelings of shame were predictive of engagement in non-suicidal self-injury as a means to self-punish and reduce bad feelings in a sample of young adults (Vanderhei, Rojahn, Stuewig, & McKnight, 2013). Though limited, studies examining feelings of shame and self-forgiveness suggest that shame is negatively associated with a willingness to forgive oneself following a moral wrongdoing (Griffin et al., 2016).

Studies examining the link between shame and criminal behaviour suggest that shame may be positively predictive of criminal behaviour (at worst) or not predictive of criminal behaviour (at best). Stuewig and colleagues (2015) found that childhood proneness to shame predicted earlier and more frequent engagement in criminal behaviour such as underage drinking, drug use, and driving under the influence. Similarly, a study conducted with adults found that shame-proneness had a positive association with

offending behaviours such as drug use, stealing, illegal entering, and assault (Tibbetts, 2003). In research conducted with offending populations including perpetrators of white-collar crimes, forensic inpatients, and first-time incarcerated youth, shame was found to be positively or negligibly associated with measures of criminal risk including psychopathy, anger and violence, levels of antisocial personality, criminogenic cognitions, and risk of recidivism (Hosser et al., 2008; Murphy & Harris, 2007; Wright et al., 2008). Taken together, while guilt and shame are often elicited by similar events and can be experienced simultaneously, the adaptive functions of guilt lend themselves much more readily to prosociality.

Finally, unlike the self-conscious moral emotions that typically respond to one's own behaviour, anger is classified as an other-focused moral emotion that most often responds to another's immoral behaviour (Tangney 2008). Anger is most often felt when an individual appraises an event as personally relevant, inconsistent with their goals, and caused (often intentionally) by a responsible other (Lazarus, 1991; Tangney et al., 2007). Anger can be considered morally relevant 'righteous' anger when responding to events where the perpetrator's behaviour represents a violation of some moral standard. An individual may experience righteous anger in response to a situation where they were personally harmed, or additionally may experience such anger when witnessing morally violating behaviours toward a third party (Tangney 2008).

As such, anger functions as a 'guardian' of moral order and to promote fairness and justice via its varied action tendencies (Haidt, 2003). When the self is perceived as a victim of injustice, anger is most associated with destructive or antisocial behaviour

including attacking or humiliating in an effort to seek revenge. In contrast, when anger is experienced as a result of a perceived injustice against someone other than the self, anger is more likely to be associated with constructive or prosocial behaviour, including standing up for the perceived victim and attempts to right a wrong or correct for the injustice. For example, instances of racism, exploitation, and oppression can lead individuals with no ties to the victimized group to demand retaliatory or compensatory action and justice (Haidt, 2003). Indeed, anger is the other-focused moral emotion most similar to self-conscious emotions like guilt and shame in that anger motivates direct action aimed at eliciting reparation and repentance of the moral violator.

Beyond its independent function and action tendencies, anger has been differentially linked to experiences of guilt and shame and has varying implications for subsequent behaviour. This growing body of literature suggests that shame, but not guilt, is linked to anger in such a way that they promote and perpetuate each other. When measured independent from guilt, shame is often positively correlated with expressions of anger, hostility, and direct or indirect measures of aggression (Stuewig et al., 2010; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996; Tangney et al., 1992).This is not unsurprising given the higher tendency for shame-prone individuals to externalize blame for a wrongdoing as a way to avoid the threat to one's self; it follows reasonably, then, that deep feelings of shame may give rise to anger – and anger-related action tendencies such as hostility and aggression – when external factors are blamed for one's own moral violations (Andrews et al. 2000, Bennett, et al. 2005, Harper & Arias 2004, Paulhus et al. 2004, Tangney & Dearing 2002) .

In contrast, guilt-proneness has been shown to moderate the relation between anger and potential destructive tendencies such as aggression (Colasante, Zuffianò, & Malti, 2015). Indeed, guilt-proneness is associated with more constructive attempts to manage anger, including nonhostile discussion and direct corrective action. Compared with their nonguilt-prone peers, guilt-prone individuals are less likely to engage in direct, indirect, and displaced aggression when angered (Tangney et al. 1996a)

Given the implications for emotional, psychological, and social functioning, moral emotions should be considered a prime target when considering general mental health and well-being. As evidenced, moral emotions (experienced independently and simultaneously) have the potential to both enhance and impair our sense of self and goodness and social connectedness. As with all emotions, though, it stands to question what consequences befall those whose moral emotional experiences fall beyond the realm of typical or adaptive. As prolonged experiences of sadness may constitute depression or extreme fear may be characterized as anxiety, it must be asked: when moral emotions are experienced in an extreme, prolonged, or over-generalized nature, what is the impact on one's mental health?

1.4 Moral Injury

To answer this question, we must consider guilt, shame, and anger (collectively referred to as moral pain) beyond their behavioural influence during a moral stressor. Moral stressors exist on a continuum with typical moral challenges and resulting moral frustration at one end. In these circumstances, the moral pain felt by the moral violator may fall within a threshold that promotes adaptive, pro-social responses as discussed

above. To characterize the extreme end of the continuum, scholars have coined the term *moral injury* to describe the intense moral pain following the most impairing of moral stressors, termed morally injurious events. As with other stress-related disorders like PTSD, when an individual's capacity to tolerate, make sense of, or respond adaptively to a stressor is exceeded – for example when the stressor is severe, prolonged, inescapable, or uncontrollable – a moral injury may result.

Moral injury (MI) is a relatively new syndrome characterized by profound psychological, spiritual, and behavioural suffering experienced by individuals following perceived moral transgressions (Drescher et al., 2011; Jinkerson, 2016; Litz et al., 2009). The experience of MI most often follows the perpetration of a moral violation (e.g., by committing or failing to prevent an immoral act) or after being betrayed in a morally violating way by a trusted individual or organization in power. Consequently, MI leads to a sequela of psychosocial consequences including negative moral affect (e.g., shame and anger) and behavioural and interpersonal challenges (Jinkerson, 2016).

Emerging from the military literature, MI was developed as a construct to understand the complex experiences of psychologically wounded soldiers that could not be explained by the more established stress disorder, Post-Traumatic Stress Disorder (PTSD). Like PTSD, MI can be understood as resulting from an impaired recovery process following a subjective traumatic experience. Although emerging research points to distinct neural underpinnings of MI and PTSD (Barnes et al., 2019; Sun et al., 2019), they are often co-occurring with MI shown to be predictive of PTSD in military populations (Hall, 2022). As such, there remains debate in the field over whether MI should be considered a unique

construct. Both MI and PTSD are stressor-linked problems for which exposure to a triggering event is a necessary but insufficient determinant of outcome (Litz & Kerig, 2019). PTSD has historically been characterized as a danger- and fear-based disorder and it was not until the most recent edition of the DSM (DSM-5) that moral challenges following trauma exposure, such as painful moral emotions, were recognized as PTSD symptoms (Barnes et al., 2019; Frankfurt & Frazier, 2016; Litz et al., 2009). Even still, such symptoms only count towards a PTSD diagnosis if they are experienced as a result of a Criterion A trauma (exposure to actual or threatened death, serious injury, or sexual violence). MI, in contrast, has been proposed to capture the psychological suffering experienced after moral transgressions that are not necessarily captured by the PTSD A Criterion, including committing or failing to prevent an immoral act, witnessing or falling victim to behaviours that violate deeply help moral standards, and other potentially morally injurious events (PMIES).

Unlike Criterion A traumas, there is no current consensus on what constitutes a PMIE beyond the subjective experiences of a perceived moral transgression, nor is there universally agreed upon criteria for MI or its symptom profile (Griffin et al., 2019; Litz & Kerig, 2019). Nevertheless, MI is consistently associated with adverse emotional (e.g., shame, guilt, anger, etc.), cognitive (e.g., loss of trust in self/others, decreased meaning-making, etc.), and social/behavioural (e.g., withdrawal, self-harm, etc.) symptoms (Jinkerson, 2016; Hall, 2022).

Importantly, in recent years there has been a growing body of literature examining the impact of MI on the mental health of vulnerable groups beyond military members,

including refugees, public safety personnel, and healthcare workers during the Covid-19

Pandemic (Hall, 2022). Across groups, meta analyses have shown MI to be associated

with adverse mental health outcomes including higher rates of PTSD, depression, anxiety,

self-harm/suicidality, and substance use (Hall, 2022).

Indeed, exploring the psychosocial impacts of MI is relevant to any group where

exposure to morally challenging events is more likely and so vulnerability to MI may be

higher. An emerging body of research has considered the impact of moral pain on

individuals who, by nature of their occupation, hold increased social responsibility.

Individuals employed as firefighters, police, paramedics, and emergency dispatchers,

collectively referred to as public safety personnel (PSP), belong to one such group. PSP

are routinely asked to take responsibility for morally ambiguous life-and-death decisions,

including when to apply lethal force or when to abandon a dangerous rescue attempt

(Chopko et al., 2015; Papazoglou et al., 2020; Papazoglou & Chopko, 2017; Regehr et al.,

2003; Weiss et al., 2010). Moreover, despite occupational aspirations to protect and serve,

PSP are often bound by institutional limitations that may impede the provision of high

quality or best-practice service, such as limited access to necessary resources or

insufficient training and support (Jafari et al., 2019; Qashu Lim, 2017; Raganella et al.,

2004). As such, PSP represent a group disproportionately exposed to events that might

violate deeply held moral standards which may put them at increased risk for

experiencing stress-related outcomes not captured by other established fear-based stress

disorders.

While much of this research has justifiably focused on populations for whom engaging in morally ambiguous situations is an occupational requirement (e.g., military, public safety personnel, healthcare workers), one group largely unconsidered is those who experience morally distressing situations without such institutional pressure (or protection). One such group includes justice-involved individuals who may experience moral pain as a consequence of committing a criminal offence. Of particular interest to the study of MI are individuals found Not Criminally Responsible (NCR) following commission of an offence on account of mental disorder. Under provisions made by the Criminal Code of Canada, NCR verdicts are reserved for those who commit criminal offenses while experiencing symptoms of a major mental disorder that render the individual incapable of appreciating the nature and quality of the act or omission, or knowing that it was wrong (Criminal Code, R.S.C., 1985, c. C-46). In such cases, the incongruence between an individual's typical moral standards and demeanour relative to their offending behaviour and its consequences may leave them particularly susceptible to MI.

As will be discussed throughout the following chapters, MI is a construct relevant to our understanding of stress, trauma, and mental health across populations. In turn, not only is it necessary to unify our definition of MI and potentially morally injurious events, but equally important are our efforts to measure and assess MI across populations. The following section will explore current efforts to measure MI and psychometric considerations that must be made when developing tools to measure new psychological constructs.

1.5 Assessing Moral Injury

With its origins in the military arena, most assessments of MI have been developed as self-administered questionnaires uniquely designed for combat populations. This is largely due to the phenomenological approach MI scale development has taken wherein respondents are queried around their *exposure* to combat-related PMIES. In essence, many instruments developed to measure MI assess for exposure to common military-related moral challenges, for example causing the death of a civilian or non-enemy combatant or being betrayed by a trusted leader (Yeterian et al., 2019). As with PTSD and the need to query exposure to a Criterion A trauma, this approach to assess MI is useful as morally injured individuals must necessarily endorse exposure to a PMIE. Moreover, the population-specific content queried by these assessments is useful in that such an approach ensures those completing the questionnaire are responding to personalized, relevant experiences which would reasonably vary greatly in other populations.

However, using an exclusively phenomenological approach has several drawbacks. First, such an approach confounds the *exposure* to a potentially morally injurious event with the *experience* of a moral wound. Indeed, existing MI measures have been critiqued for this reason (Yeterian et al., 2019). Extending the PTSD analogy initiated above, one would not make a diagnosis of PTSD solely based off of exposure to a traumatic event. While many individuals may experience Criterion A traumas, only some will go on to develop PTSD; similarly, while many individuals may experience a PMIE, we would reasonably expect that only some would go on to develop symptoms of MI. As such, exposure to a PMIE is a necessary but insufficient measure to assess MI.

Second, while it is important that instruments are sensitive to the unique PMIEs experienced across diverse populations, an exclusively phenomenological approach to scale development will inherently, then, be limited to the population for which it was developed. In other words, an instrument querying PMIEs unique to military service will only be useful to assessing MI in military members. While this approach has practical utility as discussed above, it will limit the theoretical understanding and study of MI as a relevant, valid construct across populations.

As such, the work presented in subsequent chapters will advocate for a combined phenomenological and syndromal approach to the assessment of MI. A syndromal approach aims to identify the symptom profile of MI and, beyond querying the necessary exposure to PMIEs, seeks to identify the core features of MI expected to present across populations. As outlined throughout the following chapters, using a combined approach takes advantage of the strengths of each method while compensating for their individual shortcomings. Notably, an MI assessment that uses both phenomenological and syndromal perspectives can capture a generalizable symptom profile of MI through nuanced query of population-specific moral challenges.

1.6 Instrument Development Using Mixed-Method Research

The work presented here will outline several phases of instrument development that rely heavily on the incorporation of both phenomenological and syndromal perspectives. To achieve this goal, a mixed-method, multi-phased approach was used for reasons described below.

An important phase of instrument development that often gets overlooked is the initial inquiry into the construct to be measured. Often, researchers make the mistaken assumption that the construct is understood sufficiently enough to begin construction at item development. In contrast, best practices to scale development would encourage taking the opposite approach; assuming ignorance and starting from the ground up via qualitative inquiry.

Indeed, prior to the development of candidate items, individuals from the population of interest should be consulted regarding the construct under study. This is particularly important when exploring a novel construct, an established construct in a new population, and most certainly when exploring a novel construct with a new population. In this initial phase, participants are queried around their experience of the phenomena of interest – most often using in-depth interviewing techniques – to uncover the causes, consequences, and unique manifestations of the construct in the population under study. In essence, the goal of this initial phase of instrument development is to answer the question "If one wanted to build a scale to measure x construct in y population, what kinds of questions should I be asking to truly capture it?" This approach necessitates acknowledging that though similar tools may exist in other populations, the construct of interest may not present identically – and so should not be assessed identically – in a new population. Only after conducting this foundational phase of instrument development should researchers move on to the more widely taken quantitative steps, including item development and testing using results gathered from the qualitative phase, scale piloting and refining, exploratory and confirmatory factor analyses, and testing for psychometric properties.

1.7 Dissertation Objectives

To this end, the following chapters will outline the steps undertaken to design, develop, test, and implement two tools to measure MI in novel populations. Chapter 2 includes the foundational qualitative work conducted to inform future phases of instrument development. Qualitative analysis is used to investigate the kinds of emotions experienced by individuals found NCR following their offence. As described throughout this chapter, we first positioned ourselves to better understand the morally-relevant emotional experiences of individuals found NCR prior to initiating subsequent phases to measure MI in this population.

Chapter 3 describes the subsequent phase of instrument development in a group of Public Safety Personnel. Picking up where Chapter 1 leaves off, this chapter outlines the steps of item development, exploratory factor analysis and other item reduction techniques, and preliminary evaluation of the Moral Injury Assessment for Public Safety Personnel (MIA-PSP).

Finally, Chapter 4 describes the use of the MIA-PSP to elucidate meaningful characteristics of the population under study. Presented herein is a path analysis modeling the relations between MI and hypothesized antecedents and consequences. This final chapter proposes important considerations not only for the assessment of MI in PSP, but for the treatment of MI across populations.

Chapter 2 | Study One

General Purpose

To date, moral injury has not been considered in contexts where the moral violation was not legally sanctioned, for example following the commission of a criminal offence. As such, very little is known about the morally-relevant emotional experiences of justice-involved individuals, nor how these experiences may promote or impede risk, recidivism, or recovery/rehabilitation. This may be particularly true for individuals found Not Criminally Responsible on account of Mental Disorder for whom the incongruence between typical demeanour and offence-related behaviour may serve as a particularly painful moral conflict.

To better understand the experience of individuals found NCR as they progress through treatment and recovery within the forensic psychiatry system, there must first be an established symptom profile of MI symptomology within this population. To this end, Study One seeks to qualitatively investigate the moral emotional experiences of individuals found NCR via in-depth interviews, thus representing the initial phase of instrument development.

Here, individuals found NCR and their care providers are queried around their experience with several known symptoms of MI to better understand the nuanced antecedents, manifestations, and consequences of moral pain in this population.

Title and Authorship

Title: Trapped in their shame: A qualitative investigation of moral injury in forensic psychiatry patients

Authors: Sophia L. Roth, Aamna Qureshi, Heather M. Moulden, Gary A. Chaimowitz, Ruth A. Lanius, Bruno J. Losier, Margaret C. McKinnon

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2.1 Abstract

Individuals who engage in criminal behavior for which they are found not criminally responsible (NCR) may be at increased vulnerability to experience moral pain and, in extreme circumstances, moral injury after regaining insight into the consequences of their behavior. Yet, almost no research exists characterizing the nature, severity, or impact of moral pain in this population. Semi-structured interviews were conducted with nine forensic psychiatric patients and 21 of their care providers. Narratives were explored using thematic analysis. Findings demonstrate that NCR patients endorse symptoms consistent with moral injury, including feelings of guilt toward victims, shame for one's behavior, and a loss of trust in one's morality. Moral pain is a strong driver of behavior and must be understood as part of a constellation of factors influencing criminality, risk, and recovery. Future research must develop adequate tools to measure and characterize offense-related moral injury to understand its impact on this population.

2.2 Background

Moral pain involving the experience of negative moral emotions like guilt, shame, and anger provides immediate feedback as a consequence (or in anticipation) of our own behavior or that of others and can influence future behavioral decision-making (Tangney et al., 2007). When an individual behaves in a way that violates their moral code (committing interpersonal violence, engaging in criminal behavior, cheating, stealing, etc.), moral pain serves as punishment that deters reengaging in similar behavior in the future.

Mild experiences of moral pain are likely socially adaptive, discouraging immoral behavior that may harm the social group (Haidt, 2003; Teper et al., 2015). More recently, however, researchers have become interested in examining the psychological impact of more extreme and prolonged experiences of moral pain. Here, the term *moral injury* (MI) has emerged to describe a syndrome characterized by psychological distress and impairment following the perpetration or witnessing of morally violating behavior (Drescher et al., 2011; Litz et al., 2009). To date, MI has been studied primarily in military members following deployment (Hoffman et al., 2019) and has yet to be examined in contexts where the moral violation is not legally justified, for example, after committing a criminal offense. The current investigation qualitatively explored morally injurious symptomology in a sample of justice-involved individuals found not criminally responsible (NCR) on account of mental disorder to determine the emotional experiences of these individuals following their index offense.

2.2.1 Moral Injury

Emerging from the military trauma literature, moral injury was first defined as an emotional, spiritual, and psychological wound resulting from acts of commission or omissions that violate one's sense of morality and give rise to profound inner moral conflict (Drescher et al., 2011; Litz et al., 2009). Initial measures of MI assessed for the experience of potentially morally injurious events that fell under one of two categories: perpetration via commission or omission of morally violating acts (e.g., killing non-enemy combatants in the line of duty, failing to save a life), or morally violating betrayals (e.g., receiving orders from superiors to stand down and be complicit in the suffering of others). These early characterizations of moral injury were phenomenological in nature and were criticized for their focus on population-specific *exposure* to potentially morally injurious events rather than the *experience* of a moral wound (Frankfurt & Frazier, 2016; Litz & Kerig, 2019; Yeterian et al., 2019).

More recently, work has been done to expand both the definition of MI as well as the populations in which it is studied. For example, syndromal definitions of MI have been put forward in an effort to offer a clear and cohesive description that can be used to identify MI symptomology regardless of the population being studied. One such perspective comes from Jinkerson (2016), who described moral injury as *"a particular trauma syndrome including psychological, existential, behavioral, and interpersonal issues that emerge following perceived violations of deep moral beliefs by oneself or trusted individuals"* (p.126). Here, four core symptoms of MI are identified: guilt, shame, spiritual/existential conflict, and a loss of trust in oneself, others, or higher beings.

Secondary symptoms are then noted to result from core symptoms, including feelings of depression, anxiety, and anger, re-experiencing the moral conflict, self-harm, and social problems (Jinkerson, 2016). While this syndromal definition does not preclude incorporating traditional understandings of MI development (i.e., most often following moral perpetrations or moral betrayals), it offers a way to explore and characterize MI across populations by focusing on its consequences rather than its determinants.

Research examining MI outside of the military context has only recently begun to consider its relevance to populations including youth and teachers exposed to violence (Chaplo et al., 2019; Currier, Holland, Rojas-Flores, et al., 2015), refugees (Hoffman et al., 2019; Nickerson et al., 2018), as well as healthcare providers and public safety personnel (Førde & Aasland, 2008; Fourie, 2015; Huffman & Rittenmeyer, 2012; Papazoglou et al., 2020; Papazoglou & Chopko, 2017; Roth et al., 2021a, 2021b). For example, individuals in public health and safety positions are often faced with morally conflicting, high-stakes decision-making in which they must take responsibility for life-or-death choices and outcomes (e.g., lethal use of force, allocating life-saving resources to one patient at the expense of another). Chronic and repeated exposure to these events may increase experiences of moral pain and the likelihood of developing MI (Papazoglou et al., 2020; Papazoglou & Chopko, 2017).

Increasingly, MI has been associated with several adverse social, psychological, and spiritual outcomes. This is due, in part, to the profound experiences of guilt and shame known to be associated with MI. Both guilt and shame are negative moral emotions that have been independently implicated in the development and maintenance of depression,

anxiety, and Post-Traumatic Stress Disorder (PTSD; Leskela et al., 2002; Marx et al., 2010; Nazarov et al., 2015). Though often incorrectly synonymized and confounded in moral emotion research, guilt and shame are distinct affective experiences with unique psychological and behavioural implications (Lewis, 1971; Tangney, 1999). Shame is a painful self-conscious emotion associated with self-depreciation, defensive avoidance, and a desire to hide or externalize blame (Tangney et al., 2007). By contrast, guilt is typically behaviour focused, less painful than shame, associated with remorse and worry about the consequences of one's actions, and more likely to motivate reparative actions (Tangney et al., 2007). To date, no studies have attempted to disentangle the unique contributions of shame, guilt, and other morally relevant emotions in the experience of moral injury (Yeterian et al., 2019). This may be particularly relevant for justice-involved populations where these emotions – experienced individually or as part of a syndrome like MI – may hold distinct implications for risk and recidivism.

Above and beyond the established impact of emotions like guilt and shame on psychological health, more recent work has linked MI directly to adverse mental health outcomes. Across populations, MI has been associated with depression, anxiety, and PTSD, as well as other adverse psychiatric and psychological sequelae including suicidality and self-harm, self-handicapping and risk-taking, anger and hostility, and social withdrawal (Bryan et al., 2014; Currier, Holland, & Malott, 2015; Currier, Holland, Rojas-Flores, et al., 2015; Hoffman et al., 2018, 2019; McEwen et al., 2020; Nash et al., 2013; Nazarov et al., 2018; Nickerson et al., 2015, 2018; Papazoglou et al., 2020; Worthington & Langberg, 2012). In addition, meta-analyses have shown moral pain and

MI to be negatively related to resilience, social adjustment, positive affect, and occupational functioning (Crane et al., 2015; Williamson et al., 2018). Though still in its infancy, the existing MI literature points towards common psychosocial sequelae associated with MI across contexts, suggesting that adopting a syndromal perspective of MI would be most useful to expand its research to new populations.

2.2.2 Moral Pain in Forensic Psychiatry

To date, no studies have explored MI in perpetrators of non-legally justified moral violations, for example, following the commission of a criminal offence. Here, it is possible that many justice-involved individuals will be susceptible to moral pain and subsequent MI. For example, an individual may experience guilt or shame if their offence involved behaviour that violates their own moral code (i.e., a moral perpetration), or feelings of anger and injustice if they felt compelled to offend by necessity due to a perceived failure of an institutional safety net (i.e., a moral betrayal).

Moral pain resulting from a discrepancy between an individual's moral code and their criminal offence may be particularly salient for individuals in forensic psychiatry who were found Not Criminally Responsible for their offence on account of mental disorder. Under provisions made by The Canadian Criminal Code, NCR verdicts are reserved for those who commit criminal offences while experiencing symptoms of a major mental disorder which renders the individual incapable of appreciating the nature and quality of the act or omission, or knowing that it was wrong (Criminal Code, R.S.C., 1985, c. C-46). Here, individuals undergo a thorough psychiatric assessment that provides a recommendation to the Court regarding the question of Not Criminally Responsible on

account of mental disorder. While specific conditions for NCR eligibility are not delineated in the Criminal Code of Canada, typical psychiatric diagnoses examined for this purpose include schizophrenia, delusional disorder, bipolar disorder, and organic mental disorders. Less typical diagnoses include PTSD, personality disorders, and paraphilias. While only a relatively small proportion of those who come into contact with the law in Canada meet the threshold of NCR (~ 1% of annual criminal court cases; Latimer & Lawrence, 2006; Miladinovic & Lukassen, 2014), the incongruence between one's offence related behaviour and their typical demeanour may leave individuals found NCR particularly vulnerable to symptoms of moral injury. This may be most notably relevant for individuals who experience a reduction in psychiatric symptoms as they progress through treatment and recovery, thereby (re)gaining insight into their offence and the consequences of their actions.

Surprisingly, very few studies have explored the relation between offending and moral emotions more broadly, and those that have are limited in several ways. These studies tend to examine trait levels of independent emotions and their relation to antisocial activity rather than moral pain as a complex construct resulting from a specific offence (Barón et al., 2018; Tangney et al., 2007). This body of research has also been critiqued for producing inconsistent results surrounding the presence and impact of certain moral emotions, particularly guilt and shame (likely due to the tendency to confound the two emotions; Stuewig et al., 2015; Tibbetts, 2003). Moreover, most research concerning offending behaviour and moral emotions has been conducted in non-clinical samples and

in situations involving minor law violations where profound moral pain is less likely (Tangney et al., 2007).

Nonetheless, a small body of psychological and criminological research suggests that the perpetration of a criminal offence may precipitate more profound levels of distress. Research exploring PTSD in mentally disordered offenders reveals that the perpetration of a crime, especially when violent in nature, may lead to offence-related guilt and the development of PTSD, a stress disorder related but distinct from MI (Crisford et al., 2008; Gray et al., 2003; Papanastassiou et al., 2004; Pollock, 1999). Although preliminary, these findings are important in identifying a relation between committing an offence while mentally ill and the subsequent development of psychological distress and suggest that individuals found NCR may be particularly vulnerable to the development of MI.

2.2.3. The Current Study

Relative to others who engage in morally violating behaviour, individuals found NCR may be more susceptible to moral pain following an offence due to their diminished access to morally relevant information and decision-making related to the presence of acute psychiatric symptoms. To date, however, MI in NCR populations remains unexamined. The current investigation is the first stage of a multi-phased, mixed-methods project aimed at exploring, measuring, and characterizing the morally injurious experiences of individuals found NCR. The study presented here has the following aims:

1. To preliminarily and qualitatively explore the presence of symptoms consistent with MI in justice-involved individuals found NCR.

2. To provisionally determine the utility of including staff perspectives of patient experiences by exploring the relation between patient and staff accounts.

With these aims in mind, the current study is a pilot investigation into the moral emotional experiences of individuals found NCR that will serve to inform later phases of the current project and future research in the area more broadly. This study was not conducted to provide an in-depth model that explains why or how MI occurs in forensic psychiatric patients (e.g., grounded theory analysis). Instead, utilizing accounts from both patients and their care providers, we employed descriptive thematic analytic procedures to provide an initial survey of the emotions experienced after committing a crime that might be indicative of MI in this population and provide justification for future work in this area.

We hypothesized that while many of the characteristic symptoms of MI would be endorsed by individuals found NCR, distinct presentations with unique catalysts would also be present. In light of these aims, the syndromal definition of MI formulated by Jinkerson (2016) was used to guide the query of known MI symptoms while also allowing for novel symptom manifestations to emerge under careful and structured examination, given the unique experiences of this population.

2.3 Method

2.3.1. Design

A qualitative descriptive approach using thematic analysis was used to explore the moral affective experiences of forensic psychiatric patients. Thematic analysis is a qualitative research method that allows for respondents to present their experiences and perceptions in interview format and provides a framework for identifying, analyzing, and reporting patterns within data (Braun & Clarke, 2006). This approach was deemed most suitable given its flexibility in allowing for both deductive and inductive approaches. A top-down, theoretical approach was necessary to conceptualize and interpret the data in light of our current understanding of moral injury; however, a bottom-up, data-driven approach was also necessary to avoid overlooking any themes of moral injury that might be uniquely relevant or present in a forensic psychiatric population.

2.3.2 Materials

With the intent to increase patient-participants' sense of agency, openness, and trust, we chose not to request consent to conduct a medical chart review and instead collected demographic information (e.g., psychiatric diagnosis, length of time as an in-patient, etc.) via an optional demographics questionnaire. Study materials also included an Interview Guide (see Appendix A) that was generated through discussions with experts in trauma, MI, and forensics research and that queried four broad domains: 1) the kinds of emotions experienced before, during, and after the offence; 2) the experiences of negative moral affect like guilt and shame around the index offence; 3) general feelings around morality

and 'right and wrong'; 4) general feelings towards the forensic system (i.e., the criminal justice system and the mental healthcare system).

2.3.3. Participants

Following approval by the Hamilton Integrated Research Ethics Board, participants were recruited from a Forensic Psychiatry Program situated within a larger mental health and addictions facility in Canada. Participants ($N = 29$) included: 1) forensic psychiatry in-patients found NCR who were asked to reflect on their own emotional experiences, and 2) clinical care team staff members who were asked to reflect on the emotional experiences they have observed in their patients throughout their career in forensic psychiatry. The total in-patient census at the time of recruitment was 70. The eligible staff at the time of recruitment included 93 nurses, 11 psychiatrists, 4 social workers, and 3 occupational therapists.

Participating staff ($n = 20$) represented providers across all disciplines and 4 in-patient units and reported between 2 months to 30 years ($M = 7$ years, $SD = 8.4$) of specialized experience in forensic psychiatry. Eleven patients were identified by members of their care team as fitting our inclusion/exclusion criteria (fluent in English and not acutely psychotic); of those, 9 NCR individuals consented to participate in the study. While participation in our study was open to both male- and female-identifying individuals, our male-to-female ratio (8:1) is reflective of an over-representation of males in the Forensic Psychiatric System. Patient self-reported demographics of interest are presented in Table 1.

2.3.4. Procedures

Recruitment. As is commonplace in qualitative research, purposeful sampling was conducted in phases and included both convenience and snowball sampling methods. First, staff members were made aware of the study during regularly scheduled clinical team huddles that took place on each unit. At these meetings, the purpose and rationale of the study were briefly outlined and staff were made aware of the date, time, and location of six focus groups that were to take place in the coming weeks. One interested staff member was not able to attend focus group sessions and was offered an individual interview instead. At the end of each focus group, participating staff members were asked about current in-patients who might be interested in participating in an individual interview. Staff were asked to consider factors including the general disposition of their patients (i.e., patients who reported or were observed to express strong emotions would be most fitting) as well as the patient's general ability and willingness to engage in emotionally salient conversations. Once potential patients were identified, each unit's Charge Nurse made initial contact with patients to briefly describe the study and to obtain consent for a research team member to approach the patient with further study details. Interested patients were given an interview date within the following week.

Interviews. Prior to the start of focus groups and interviews, all participants were oriented to the purpose of the study via a formal letter of information that was read by the interviewer and participants together with opportunities for any questions. After all questions were addressed, written consent was obtained to move forward with interviews and audio-recording. Focus group interviews with staff were led by a moderator and co-

moderator and lasted between 30 minutes to 1 hour. Staff were instructed to reflect on

their general observations of their patients throughout their career in forensic psychiatry,

as well as to give specific examples (omitting any identifying information) where

possible. Staff members were thanked for their participation with token gifts of

consumable treats. Patients were interviewed individually in order to maintain privacy

and confidentiality; these interviews ranged in length from 16 minutes to 58 minutes with

an average length of 33 minutes. Patients were asked questions about their own emotional

experiences since the commission of the index offence. Patients were also asked to

complete the demographics questionnaire at this time. Importantly, patients were

informed prior to consent that participation did not require disclosing specific details

surrounding the index offence, but were encouraged to share any details they deemed

important in recounting their experiences. Of those patients who voluntarily disclosed

details about the type/severity of offence, index offences as described by patients ranged

from relatively minor offences (e.g., parole violations, dangerous possession of a weapon)

to more severe offences (e.g., assault, murder). Patients were compensated with a $10 gift

card for their time and informed that support resources would be made available to them

should they experience any psychological distress as a result of their participation.

Nursing staff were aware of all patient interviews taking place and were asked to be

mindful of any signs of distress that may occur to patients following participation.

2.3.5. Data Analysis

Data were collected and transcribed by one researcher. Upon completion of transcription, quality checking was conducted by a second researcher to ensure transcripts were accurate and anonymized.

To analyze the data, two members of the research team independently read, re-read, and coded each transcript using open coding (Strauss & Corbin, 1990). After three transcripts were independently coded, the researchers met to discuss preliminary patterns generated from the data and to assess their level of agreement and disagreement; anywhere that disagreements occurred, the researchers discussed the code under consideration until a consensus was reached. From these discussions, a codebook with a systematic coding scheme was generated that included a list of all codes and their definition, as well as examples and non-examples. This codebook was then used for the analysis of each subsequent interview transcript and was supplemented when new patterns arose.

The researchers met following the independent coding of every transcript to discuss and come to a consensus on any disagreements. An iterative approach was used in which the researchers revisited previously analyzed interviews when changes to the codebook were made in order to assure that the most up-to-date coding scheme was systematically applied to the entire data set. As open coding continued, axial coding (Lune & Berg, 2016) was simultaneously applied to account for higher-level themes being generated from the data. This allowed for the organization of lower-level codes into hierarchical categorical structures and themes, presented below.

2.4 Findings

Several themes generated from the data and presented below are consistent with a syndromal perspective of MI. Unique manifestations of both core and secondary symptoms identified by Jinkerson (2016) emerged as primary themes with the exception of existential/spiritual conflict. Regarding our secondary aim of preliminarily assessing the utility of including staff accounts of patient experiences, analyses revealed significant overlap between descriptions generated by patients and staff members. Moreover, relative to patient accounts, staff members were more likely to discuss contextual factors relating to MI, and it was primarily from staff data that the final primary theme, Factors Influencing Moral Injury, was generated. Given the shared themes identified from both staff and patient interviews, results are presented together below.

2.4.1. Core Symptoms

The core MI symptoms queried and endorsed in our investigation included guilt, shame, and loss of trust. While staff reported that witnessing expressions of guilt and shame was not overly common, remorse was often the first feeling discussed by patients. Notably, and consistent with a general understanding of moral emotions, words such as guilt, shame, regret, remorse, and 'feeling bad' were often used interchangeably. To delineate, guilt was coded when participants described remorse that was behaviour-focused, relating to the consequences of their actions, and/or motivating reparative action. Here, guilt was often associated with patients spending a lot of time thinking about their offence and the victims, feeling responsible for their actions, and wishing that they could have acted differently.

I [don't] forgive myself, I still carry that burden on me…Every day, I think about it every day. I wish I could turn back the hands of time… (Pt 7)

Not a day goes by where I'm glad I did what I did…The fact that I hurt another person so badly, and living with that is very hard. Knowing I've brought a lot of people suffering…I don't know, it makes me sad, and sometimes I cry because of what I've done and how I inflicted pain on people. (Pt 1)

I felt remorse and stuff, I felt upset, I felt I could have done something different… The thought never came to my head to go to [hospital]…That's what I kind of feel bad about. Because it could have been avoided. This whole situation could have been avoided. (Pt 8)

In contrast, shame was described as more self-focused, harder to cope with for patients, and harder to identify for staff. Participants described shame as resulting from both internal and external sources. Internal shame was coded when participants endorsed intense remorse that impacted their self-image, made them question their value, and was associated with painful rumination despite attempts to avoid thinking about it. External shame relating to embarrassment and stigma was described by patients and staff as involving fear and doubt about how others would perceive and evaluate their value and was associated with withdrawal and reluctance to discuss the offence with care providers, family, or co-patients.

When you think of people ashamed, they are trapped in their shame and it almost paralyzes them to even move forward at all, because they can't. They're trapped in their shame. (Staff member)

The regret is something that I think of when I wake up, when I go to bed, and all throughout the day, and it kind of eats at me, knowing I did something so heinous toward another person…Just living with the regret is probably one of the hardest parts because, for most of my life I thought I wouldn't be involved in violence…I guess I try to hide how I feel a lot of the time by um, just moving on and carrying on with my day, doing what I have to do to get through the day. Until the night, when I remember everything, all the time. So getting through the day is one of the toughest parts, and not just breaking down all of the time. (Pt 1)

Well, for the rest of my eternal existence I'm going down as basically, I killed a guy. I have that basically tattooed on me for the rest of my life. (Pt 9)

Index offence aside, I think the title 'forensic patient' is extremely stigmatizing and induces shame. It's a shameful title. And that affects a lot, like a lot of patients where we're at are trying to move forward and get a job, even [name] on our unit, he's one of our patients who's conflicted because he's not motivated and will be like "well I have a criminal record so I'll never get a job", so there's lots of obstacles that they have to go through before even getting out there which is a struggle. (Staff member)

Sometimes it's just like a hopelessness, or a "I did this horrible thing and now I am not a good person", like that kind of thing. (Pt 3)

Participants also discussed profound loss of trust following an index offence. These feelings were identified by patients and staff as being both self- and other-focused. For example, many participants described the loss of trust NCR individuals experience in themselves, including doubts about their own sanity, their morality or goodness, or their ability to refrain from reoffending in the future.

I guess, for a long time I had thought that I was just obviously insane for what I had done, which, is questionable, and I may be, I don't know. But I think I'm a good person…But I don't know, it just makes me question my own morality and my own judgement. (Pt 1)

Some people are sort of quite evidently traumatized by having done something that…they consider to be awful, and a few patients who seem really terrified of ever getting in that state again and doing something similar again…I sometimes have patients who do not want to make progress…they want to stay in hospital, they don't want to be given too many privileges and they're sort of fearful of going out into the community again or of having supports reduced. I just recently had a case where we…were asking for an absolute discharge from the forensic system and the patient was opposing it…and it was sort of driven by this fear that he might get sick again. (Staff member)

In contrast, participants also described the experience of loss of trust in others. These feelings were most frequently associated with perceptions of unjust behaviour and betrayal by systems or individuals meant to protect or support. For example, nearly all

participants described feelings of betrayal and loss of trust towards family members

involved in their arrest and/or towards the forensic system due to perceptions of poor care

and unjust confinement (e.g., unreasonably in length or severity) given their NCR verdict.

I'm overwhelmed with defeat. The police, the mental health care act, my family, every friend I've ever had has debilitated me with denial…Every person I've ever trusted…I don't feel that I deserve it…I'm overwhelmed with the prolonged stay in the system…I've received zero psychological benefit. (Pt 6)

[Patients] feel betrayed by the system, [they] feel that they've done 'this program' and 'this program' and they've done everything that the psychiatrist has recommend they do, but yet they find themselves here…So they sense "I've done all this stuff, I've had no positive urine, I've done some programs, I've done this, but yet still I am getting nothing in return"…"I've done it, it didn't get me anywhere, so what's the point?" (Staff member)

2.4.2 Secondary Symptoms

Secondary MI symptoms queried and described included both emotional and

behavioural sequelae resulting from one or more of the primary symptoms. Emotional

sequelae described by participants included righteous anger, anxiety, and depression.

Anger was most often discussed as resulting from feelings of betrayal and loss of trust for

reasons discussed above, for example, perceptions of not being believed and untruthful

re-tellings of index events by psychiatrists.

They're just psychiatrists that spin wild tails and try to spin everything out of proportion and make things worse…they can take anything they want, switch it around, make up things, fraud and everything, you know. And say "this never happened", you know, "I was delusional and crazy", this and that. (Pt 2)

[The patients] are just frustrated with the system mostly. And then they're just angry. And then by the time I'm trying to have a conversation, they just blow up, because they're already building inside that they shouldn't be here or "this is too much". (Staff member)

Participants also discussed the experience of chronic anxiety and depressive symptoms following index events. Many staff and patient participants described fears of psychiatric relapse, re-offending, and reincarceration relating to loss of trust in themselves, as well as worry of victim retaliation. Anxiety and depressive symptoms (e.g., intense feelings of sadness, worthlessness, rumination, etc.) were also frequently discussed by participants and attributed to uncertainty and hopelessness around the duration or severity of hospitalization, which was often exacerbated by the lack of trust and transparency within the forensic system.

> *By bringing violence to the table I made it worse… [I felt] a lot of anxiety after I had attacked him because I thought he might come back for revenge…That he'll take retribution on me or my family, for what I did to him…that brings fear, anxiety into the core of my soul. (Pt 1)*

> *My hope has been diminished. This institution has literally destroyed my hope for the future. And uh, I've come to a point where I've accepted the fact that I'm going to be associated with this institution for the rest of my life…I've lost all hope. (Pt 6)*

Participants also identified several behavioural sequelae consistent with MI and resulting from the emotional consequences of the index offence. Most notably, participants identified social problems relating to internal and external experiences of shame and a loss of trust in others. Here, participants identified problems initiating new social relationships as well as maintaining existing ones, often due to fear of judgement and feelings of distrust, betrayal, and anger.

> *…you can't tell somebody, just like "you killed your dad" …they're going to judge you before they even know you… It's very hard to have a relationship in this hospital. Because they just think 'why are you in the nuthouse?' (Pt 7)*

There's a lack of trust. I feel I have a hard time opening up or elaborating to new friends or, or, associating with new people or letting people into my life. And this goes as deep as my family who has left me in denial (Pt 6)

I think you see a decline in relationships they have prior to the index offence. Because they're not the person that they were when they committed the crime, so I think it might be the shame and embarrassment of facing these family members when you thought you could never do something like this and all of a sudden you did. So, I think pulling away from those relationships is, at the time, the only thing that they can really do. (Staff member)

Re-experiencing and self-harm were also identified as common behavioural sequelae resulting from moral pain. Patients described struggling with unwanted and intrusive thoughts, memories, and dreams precipitated by intense feelings of shame. As a result, participants described witnessing or engaging in suicidal ideation and self-harm behaviour – most notably substance abuse – as a strategy to cope with painful experiences of shame, rumination, sadness, and hopelessness.

Well, that's why I used for so long, used like the methamphetamine and the heroine and speedballing every day after the index offence because I couldn't deal with what I had done. So I tried to numb how I felt all the time, with using the speedball intravenously, that alleviated how I felt, and I felt numb, so I felt nothing, which was better than feeling what I had done. (Pt 1)

2.4.3 Factors Influencing MI Symptomology

Discussed primarily by staff, factors impacting the propensity to experience moral pain emerged as a final theme and included index offence severity, patient relation to victim, and patient level of insight. Here, patients who commit more serious offences involving violence – and particularly those involving loved ones – are more likely to demonstrate symptoms consistent with MI. Regarding insight, multiple staff noted that patients without insight into the events surrounding their index offence are more likely to demonstrate other-focused MI symptoms, for example, intense anger around the

discrepancy between a patient's account of their offence and formal police or medical

records. In contrast, staff described patients who experience a reduction in psychiatric

symptoms and regain insight into the index events as more likely to demonstrate the self-

conscious moral emotions associated with MI, such as guilt and shame.

> *I think as they begin to get well – because often they enter the hospital quite unwell – so, as they become medicated and realize the gravity of what has happened and why they're like this, there's a lot of guilt and shame and negativity around it. Emotional distress. (Staff member)*

> *The anger usually stems from their lack of understanding because of their lack of insight. They don't have an understanding of why they're here, why they're being held here, why they can't leave, and they don't understand that they need to be treated…But just the anger of them being kept here. (Staff member)*

Finally, staff noted that the experience of moral pain is dimensional and that not all

patients who endorse negative moral emotions are at risk for other symptoms of MI. Here,

staff noted that in some cases, expression of emotions like guilt and shame may be

indicators of recovery and intentionally targeted as a treatment objective. However,

numerous staff agreed that when moral pain is profound, persistent, and pervasive, and

when patients are not able to find healthy ways to cope with their emotions, moral pain

can become detrimental to healthy functioning and recovery and potentially be indicative

of MI.

> *I can think of another patient who I don't think this gentleman's dealing with his guilt and shame, and he's completely reclusive to his room, he doesn't go out, so I think that is impeding his recovery. So of course we want him to understand what we did is wrong, but when it gets to a point where these emotions are completely taking over and stopping him from being able to engage in the reason he's here, then that's really going to impede him from being able to recover and get back into the community. (Staff member)*

2.5 Reflective Statement

The staff members and patients who volunteered to be interviewed for the study were enthusiastic to participate and offer their opinions. Several patients, in particular, described feelings of catharsis while being able to speak freely and openly about their experiences without feeling judged or scrutinized. While patients were, at times, initially hesitant to speak in detail about their offence or some of the more painful moral emotions that arose in consequence, patients appeared to relax over time and were noted to elaborate increasingly with the realization that the interviewer was accepting their experiences as valid. A final reflective observation surrounds the overlap between patient experiences and staff members' understanding of those experiences. While almost all patients endorsed feelings of guilt and/or shame to some degree, some staff were initially hesitant to identify these emotions in their patients. However, as interviews with staff progressed and emotional presentations were reframed behaviourally (e.g., patients becoming withdrawn or angry when asked about their offence may be experiencing shame), staff were more readily able to reflect on and identify the potential impact of moral emotions that was being described by patients in their interviews. Overall, the staff's observations and accounts of patient experiences were consistent with patient reports in a way that complemented and aided in the interpretation of data derived from patients.

2.6 Discussion

The current study aimed to investigate the moral emotional experiences of individuals found NCR for symptoms consistent with MI and to explore the utility of including staff

accounts of patient experiences in doing so. Integrating top-down and bottom-up approaches to data analysis resulted in the emergence of several themes highlighting the relevance of MI to justice-involved individuals found NCR.

Notably, using a syndromal framework of MI to guide our investigation provided preliminary evidence that both core and secondary MI symptoms are also pertinent to forensic psychiatry. Theoretical and empirical studies of MI have described it as including impairing moral emotions (guilt, shame, anger), negative appraisals of self and others, behavioural problems (withdrawal, self-harm), and symptoms of anxiety and depression (Currier et al., 2017; Jinkerson, 2016; Litz et al., 2009; Nickerson et al., 2018; Yeterian et al., 2019); our results are the first to demonstrate similar findings for justice-involved individuals found NCR resulting from the moral pain associated with the commission of a criminal offence.

Consistent with traditional definitions of MI that distinguish between experiences of moral perpetrations (via commission or omission) and moral betrayals, our findings suggest that a symptom-based perspective can be used to capture the consequences associated with both types of moral violation. For example, paralleling existing work demonstrating the relation between the commission of perceived immoral acts and intense moral pain, individuals found NCR described profound guilt, shame, remorse, and regret relating to their offence as well as self-directed anger, a loss of trust in one's morality, increased substance use as a means of coping, and suicidality. It is important to note that as participants were not required to disclose the specific details of their index offence, it is unclear whether these findings can be applied to perpetrated acts of commission,

omission, or both; however, we consider this an interesting area for future query. Further, participants also described outwardly directed moral pain, most notably a loss of trust and anger toward the forensic system, friends, and family – experiences more in line with perceived moral betrayals. Interestingly, existential/spiritual conflict was the only symptom outlined by Jinkerson (2016) that did not emerge as a significant theme from our data; given the preliminary nature of our investigation, it is unclear whether this discrepancy reflects a distinct aspect of MI in forensic psychiatry or simply a product of our study design characteristics. To our knowledge, this study is the first to employ a symptom-based definition of MI outside of military contexts to explore its utility across populations and in doing so, provides preliminary empirical support for the adoption of a syndromal definition of MI for cross-population research.

Where our top-down approach highlights how a syndromal framework can be useful in integrating traditional understandings of MI with the experiences of novel populations and lends credibility to the construct as a whole, our data-driven, bottom-up approach allowed for the emergence of symptom manifestations unique to justice-involved individuals found NCR and provides preliminary evidence that core and secondary symptoms of MI could have distinct triggers and consequences for this population. For example, participants described feelings of guilt relating to regret for their actions, concern for the victim, and a desire to make amends throughout treatment and recovery. In contrast, shame was more insidious, harder to identify, and more likely to be associated with secondary symptoms. For example, shame was often discussed as relating to both self- and other-directed anger (e.g., anger at self for committing the offence), suicidality

and self-harm (e.g., substance abuse), and social problems (e.g., social avoidance and withdrawal from supports). Unique to this population, participants also described moral pain relating to their experience with the Forensic System. For example, participants reported a loss of trust in their own ability to navigate treatment and recovery and add value to society, as well as significant anger, anxiety, and hopelessness relating to not being believed by loved ones and care providers and to perceptions of an indefinite and unjust sentence length. Moreover, and as described by participating staff members, behavioural presentations commonly observed in forensic settings (e.g., privilege violations, substance use, extreme mistrust/anger towards care providers, withdrawal, refusal to discuss details of index events, etc.) may, in fact, be morally relevant and driven in part by negative moral emotions. Though future research is needed to better understand the relation between these behavioural presentations and moral pain, these preliminary results are consistent with existing literature reporting similar findings.

A secondary aim was to explore the utility of including staff accounts of patient experiences. While it is important to note that staff interpretations could never fully capture the private emotional experience of a patient and thus should be considered carefully, our findings suggest that the inclusion of staff accounts both complemented and enriched patient-derived data. This was most apparent in the discussion of factors that might influence the prevalence, type, and severity of MI symptoms. Notably, themes generated from staff interviews highlight the potential role of patient insight in the experience of MI symptomology. Here, our findings suggest that symptoms of MI may differentially present over the course of in-patient stay via the reduction of psychiatric

symptoms impeding insight. Though outside the scope of the current study, future research should aim to better understand the ways that other-focused moral emotions like anger (associated with lower insight) and self-conscious moral emotions like shame and guilt (associated with higher insight) are differentially impeding, impacting, or otherwise influencing progress through treatment and recovery. Finally, staff noted that in some cases, expressions of moral pain may be indicative of successful progress through treatment and recovery; however, when moral pain was extreme in intensity and duration, and particularly when the painful experience was focused on 'a bad self' rather than 'a bad behaviour' (indicating primary shame over guilt), staff were more likely to view the experience as maladaptive and related to MI symptomology.

While findings from this study should be considered preliminary, they offer important insight into understanding the role that moral pain may play in offence-related risk and recidivism. Few studies exist that examine moral emotions in offending populations – even fewer within NCR populations – and those that do have primarily focused on experiences of guilt and shame. Most relevant to the findings presented here, the extant psychological research on moral emotions conducted with offending populations suggests that guilt and shame represent overlapping but distinct concepts with differential implications for offending behaviour (Hosser et al., 2008; Tangney et al., 2014; Wright et al., 2008; Wright & Gudjonsson, 2007). These studies have found guilt to be consistently negatively associated with measures of criminal risk including psychopathy, anger and violence, levels of antisocial personality, criminogenic cognitions, and risk of recidivism (Tangney et al., 2011, 2014). Shame, in contrast, has been found to be either positively or

negligibly related to the same criminogenic factors and instead predictive of a failure to accept responsibility and externalize blame (Tangney et al., 2014). These studies suggest that while guilt may be protective against criminal behaviour, shame does not offer the same protection and may increase the likelihood of antisocial behaviour. These relations held true for offending populations including perpetrators of white-collar crimes, first-time incarcerated youth, and one study involving forensic psychiatric in-patients (Hosser et al., 2008; Murphy & Harris, 2007; Wright et al., 2008). Taken together with our findings, it is plausible that intense shame (rather than guilt) is the MI symptoms most relevant to forensic populations with the strongest implications for maladaptive behavioural and emotional experiences like anger, avoidance, withdrawal, and substance abuse. It is important to keep in mind, however, that the vast majority of this research has examined trait levels of moral emotions rather than an offender's experience of moral pain resulting directly from their offence.

As such, future research must examine not only the individual impact of moral emotions like guilt or shame but how the clustering of emotional symptoms into a syndrome like MI might influence an offending individual's progress through treatment and recovery and future risk of recidivism. To date, no tools exist to measure MI in offending populations, nor do any MI scales in use attempt to measure the unique contributions of its symptoms (e.g., anger versus guilt versus shame); this may be particularly important in forensic psychiatry where these emotions may differentially interact with factors like patient-insight and have different implications for offending behaviour.

The current study provides novel insight into the moral pain experienced by justice-involved individuals found NCR. While our findings provide the first empirical evidence for MI in this population and lay the foundation for future work in the area, interpretations must be made in light of certain limitations. First, participants were recruited from a single site with purposeful and convenient sampling and the patient sample included primarily White, male-identifying individuals. While purposeful sampling is often advantageous for qualitative investigations, it limits the generalizability of our results to other NCR individuals or other justice-involved individuals not under the NCR provision. This is a particularly important consideration for future investigation given the relative paucity of research focusing on diverse offending populations, for example, women who offend. The National Trajectory Project of Individuals Found Not Criminally Responsible on Account of Mental Disorder (2015) found that relative to men, women who offend had substantially more offences causing (or attempting to cause) death and were more likely to commit offences involving a loved one. Though existing investigations into military-related MI have not found significant sex differences (Kelley et al., 2019) the findings from the National Trajectory Project taken together with our results suggest that women who offend may be particularly susceptible to symptoms of MI and should be the focus of future work in this area.

A second methodological limitation of the current study involved the use of self-selection by respondents which may have limited our findings as those most impacted by morally injurious symptoms (e.g., shame) may be least likely to consent to participate in interviews about emotional experiences. This was reflected in the relatively small number

of patient-participants and limited the depth at which we could speak to each theme. This last limitation was somewhat expected and compensated for by the recruitment of several staff participants with expertise in forensic psychiatry who were able to offer their own nuanced accounts of patient emotional processes and behavioural observations. Despite its limitations, this design ultimately helped strengthen the analysis by allowing for data and method triangulation through the use of multiple data collection strategies and resulted in the emergence of themes that may have otherwise been missed. Consolidating patient and healthcare provider accounts of the emotional processes impacting forensic psychiatric patients stands as a unique contribution to an area of research that is already too often neglected.

2.7 Conclusion

Moral emotions are strong drivers of behaviour and must be understood as part of a constellation of factors influencing criminality, risk, and recovery. Results from the current study provide preliminary insight into an often-overlooked area of research, allowing for a more nuanced understanding of the moral emotional experiences of NCR individuals and laying the foundation for future studies to measure MI in forensic psychiatry and more deeply characterize its impact on an individual's progress through treatment and recovery. Beyond the realm of forensic psychiatry, this work has important implications for the emerging field of moral injury and the methodological choices used to study it. Our findings offer support for the integration of traditional theoretical understandings of MI with novel outcome-focused perspectives. This approach will be instrumental in driving the field forward beyond the military arena and into the many

contexts where insight into moral pain will add to our understanding of mental health and social behaviour more broadly.

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Appendices | Study One

Interview Guide

I have 4 questions that I want to ask you today that fall under three different themes, and all have to do with the types of emotions people experience after committing a crime. It's important that you know that while I'm interested in hearing as much about your emotions as you're comfortable sharing, it's not necessary that you share any details about the crime itself.

1. I'm interested in hearing about the kinds of emotions you have experienced since committing the crime. Can you tell me how you feel about the crime and the circumstances that lead to it happening?

Probes:
  1.1. When you think about what happened, what types of emotions do you experience?
  1.2. Has this changed over time, or have you always felt this way?

2. Sometimes when people do something that is against the law, they experience negative emotions. We call these emotions—like guilt and shame—'moral emotions', because we often feel them when we're not sure if our behaviour was moral (right or wrong). Do you ever experience moral emotions when thinking about the crime. If so, can you tell me more about how these emotions make you feel and how those emotions affect you?

Probes:
  2.1. Do you view what happened as all right or all wrong? Or are there parts that you feel were moral, and other parts that felt immoral?
  2.2. How do you feel these emotions have affected your life?
  2.3. Have these emotions caused you any distress or impairment? If so, how?
  2.4. What are some things that you do to cope with those feelings?
  2.5. Do these feelings impact how you behave, or the tasks that you try to accomplish? If so, how?
  2.6. Do these feelings ever impact your relationships with other people? If so, in what ways?

3. Now I want to switch gears a little bit and hear more broadly about your ideas of morality (right and wrong). How do you define morality, or the difference between right and wrong?

Probes:
  3.1. Are there certain things that are always right or always wrong, or does it depend?
  3.2. Are there times where it's okay to do a wrong thing?

4. For our last question I'm going to switch gears again and ask you about your feelings towards the Justice System and the Healthcare System. Both before and after the offence you were involved in, can you tell me about the ways these systems have (or haven't) supported you?

Probes:
    4.1. Do you feel as though these systems have properly cared for you?
    4.1.1. (If no) What do you feel these systems could have, or should have done for you that they have not?
    4.1.2. (If yes) In what ways do you feel that these systems have properly cared for you?
    4.2. Is there anything about the crime (or the circumstances around it) that you think might be different if these systems had cared for you in a different way?

Conclusion: That's all of the questions I have for today. Thank you so much to everyone for attending and for your courage to share what you have. What you have shared will be an immense help to us as we develop our questionnaire.

Table 1

Patient-participant Demographics

ID	Interview Length (m)	Age	Race	Education	Psychiatric Diagnosis	Time in Institution
Pt 1	33	23	White	Completed High School	Schizophrenia	<1mo
Pt 2	31	25	White	Completed High School	Delusional Disorder	1-2yrs
Pt 3	26	32	Aboriginal	Some High School	Schizophrenia	1-2yrs
Pt 4	51	28	White	Completed High School	PTSD, MDD, SUD, ADHD	6mo-1yr
Pt 5	27	34	White	Some College	MDD, PTSD	>2yrs
Pt 6	58	49	White	Completed High School	Schizophrenia	>2yrs
Pt 7	22	23	Black	Some College	Schizophrenia	>2yrs
Pt 8	37	33	Middle Eastern	Completed College	Schizophrenia	1-2yrs
Pt 9	16	32	White	Some High School	Schizophrenia	>2yrs

Note. PTSD = Post-Traumatic Stress Disorder; MDD = Major Depressive Disorder; SUD = Substance Use Disorder; ADHD = Attention-Deficit Hyperactivity Disorder

Chapter 3 | Study Two

General Purpose

Only after formulating a nuanced understanding of a psychological construct should one consider moving forward with other phases of instrument development; this is especially true when aiming to measure a novel construct in a population where it has yet to be studied. As such, Study Two can be considered to represent the phase of instrument development that succeeds, and is directly informed by, the foundational work from earlier phases.

Study Two describes the construction of a tool to measure MI in Public Safety Personnel (PSP). As described in the following chapter, item development should be informed by avenues including, but not limited to, consultation with the population of interest, consultation with expert researchers or clinicians in the field, review of relevant literature, and review of similar instruments in used in other populations. In the study presented, candidate items were then piloted with a group of PSP across Canada and the USA prior to performing factor analysis and other item reduction techniques to retain only those items most relevant to MI in PSP.

Though further testing is warranted before finalizing a measurement tool, Study Two goes on to demonstrate the preliminary evaluation of such a tool to establish initial indicators of reliability and validity.

Title and Authorship

Title: Development and preliminary evaluation of the Moral Injury Assessment for Public Safety Personnel

Authors: Sophia L. Roth, Krysta Andrews, Alina Protopopescu, Chantelle Lloyd, Charlene O'Connor, Bruno J. Losier, Ruth A. Lanius & Margaret C. McKinnon

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3.1 Abstract

Public Safety Personnel (PSP) are required to make decisions that can violate their moral standards and are also disproportionately exposed to other morally challenging events which may increase their vulnerability to experiencing moral injury (MI). Yet, there is little research exploring moral pain in PSP and no existing instruments to identify MI in PSP. Here, the Moral Injury Assessment for Public Safety Personnel was developed and piloted with 270 Canadian and American PSP. Factor analytic results revealed three distinct factors related to the experience of MI for PSP: perpetrations, betrayals, and emotional sequelae. The emergence of these factors replicates the perpetration and betrayal dimensions of MI established in other populations and adds to the emerging body of literature seeking to identify a consistent symptom profile of MI. Our results preliminarily suggest strong reliability (i.e., internal consistency and item-total correlation) and excellent construct validity when compared to other measures of psychological stress. This work advances our understanding of MI and the unique challenges experienced by PSP and highlights the need for future work aimed at assessing and treating MI in PSP populations.

3.2 Introduction

Public safety personnel (PSP), including police, firefighters, paramedics, emergency dispatchers, and correctional workers, are repeatedly exposed to potentially traumatic events (Lentz et al., 2021). Unsurprisingly, these PSP are at a greater risk than the general population of developing subsequent psychiatric conditions including, PTSD, depression, anxiety, and dissociation following trauma exposure (Asmundson & Stapleton, 2008; Berger et al., 2012; Carleton et al., 2019; Faust & Ven, 2014; Haugen et al., 2012; Lentz et al., 2021).

The majority of research aimed at assessing and characterizing mental distress in PSP has focused on outcomes following fear-based traumatic events involving violence, injury, and death, including those most associated with the development of PTSD (Dentry et al., 2017; Papazoglou & Chopko, 2017). Less understood are the consequences of chronic exposure to morally distressing, high-stakes situations that may not meet the threshold necessary for a PTSD diagnosis but may still lead to other forms of significant stress and functional impairment.

Here, PSP are routinely asked to take responsibility for morally ambiguous life-and-death decisions, including when to apply lethal force or when to abandon a dangerous rescue attempt (Chopko et al., 2015; Papazoglou et al., 2020; Papazoglou & Chopko, 2017; Regehr et al., 2003; Weiss et al., 2010). Moreover, despite occupational aspirations to protect and serve, PSP are often bound by institutional limitations that may impede the provision of high quality or best-practice service, such as limited access to necessary resources or insufficient training and support (Jafari et al., 2019; Qashu Lim, 2017;

Raganella et al., 2004). As such, PSP represent a group disproportionately exposed to events that might violate deeply held moral standards which may put them at increased risk for experiencing stress-related outcomes not captured by other established fear-based stress disorders. Here, we propose that a moral injury framework may be most useful in understanding the moral challenges and resulting moral pain experienced by PSP.

3.2.1. *Moral Injury*

Moral injury (MI) is an emerging construct involving profound psychological, spiritual, and behavioural suffering experienced by individuals following perceived moral transgressions (Drescher et al., 2011; Jinkerson, 2016; Litz et al., 2009). In some instances, the experience of moral pain can be considered a normal or even functionally adaptive response to moral violations; MI, however, has been proposed to capture the intense suffering following extreme violations of moral standards (Litz & Kerig, 2019). Relative to other stress disorders requiring exposure to actual or threatened death, injury, or violence, the criteria for what constitutes a potentially morally injurious event (PMIE) is less constrained. However, PMIEs typically involve either the *perpetration* of a moral violation or a perceived moral *betrayal* by a trusted individual or organization in power (Schorr et al., 2018; Shay, 2014). Consequently, MI is characterized by a host of emotional, cognitive, and behavioural challenges such as shame, anger, loss of trust, negative beliefs about self and others, and interpersonal problems (Jinkerson, 2016; Litz et al., 2009).

Established in the military literature, *perpetration* PMIEs typically involve morally transgressive acts of commission or omission (Litz et al., 2009; Shay, 2014). Here, either

causing or failing to prevent a morally troubling act may serve as a morally injurious event. In contrast (though often overlapping and/or co-occurring), b*etrayal* PMIEs involve experiencing, witnessing, or learning about morally violating acts perpetrated by another (often trusted) individual or organization and that lead to harm to the self and/or others. A recent study conducted with military and veterans in Canada, the United States, United Kingdom, the Netherlands, and Australia found that the most commonly reported PMIEs include: seeing immoral acts and doing nothing to stop them, killing within the rules of engagement, making a mistake that resulted in harm to others, seeing others harmed as a result of decisions or indecisions made by others, witnessing disrespect to helpless others, and being placed in harm's way by others (Yeterian et al., 2019). Like PTSD and other traumatic-stress disorders, many individuals exposed to PMIEs may not be severely affected by the experience, and only a subset of individuals will go on to develop symptoms of MI.

Though MI emerged primarily through work with military members, more recent research has provided support for the construct outside of the military arena, including among refugees fleeing persecution (Hoffman et al., 2019; Nickerson et al., 2018), teachers exposed to violence (Currier et al., 2015), healthcare and other essential workers serving during a global pandemic (Gaitens et al., 2021; Mantri et al., 2020), and justice-involved individuals found Not Criminally Responsible (Roth et al., 2021). Across populations, MI has been associated with adverse psychiatric sequelae, including depression, anxiety, and PTSD, as well as suicidality and self-harm, self-handicapping and risk-taking, anger and hostility, and social withdrawal (Griffin et al., 2019; McEwen

et al., 2020; Nash et al., 2013; Nazarov et al., 2015). Moreover, MI is inversely related to resilience, social adjustment, positive affect, and occupational functioning (Griffin et al., 2019; Williamson et al., 2018; Wisco et al., 2017).

Given its origins in the military arena, traditional tools developed to measure MI were population-specific in nature and so limited to querying exposure to military-related PMIEs, for example, causing the death of a non-combatant or failing to provide aid to injured women or children. As the study of MI expanded to other populations, it was often measured using these or similar tools adapted to query exposure to perpetration and betrayal events applicable to the population at hand (e.g., Currier et al., 2015; Hoffman et al., 2019). Largely, these attempts to assess MI were phenomenological in nature and were criticized for their focus on population-specific *exposure* to PMIEs rather than the *experience* of a moral wound (Frankfurt & Frazier, 2016; Litz & Kerig, 2019; Roth et al., 2021; Yeterian et al., 2019). Resultingly, research has shifted toward a syndromal understanding of MI to identify a symptom profile characteristic of MI irrespective of the population under investigation (Jinkerson, 2016; Roth et al., 2021). The theoretical framework outlined by Jinkerson (2016) and used to guide the query of MI symptoms in the current investigation defines MI as a syndrome involving the four core symptoms guilt, shame, loss of trust, and existential conflict, which are posited to give rise to secondary symptoms including emotional (i.e., anger, depression, anxiety) and behavioural (i.e., re-experiencing, self-harm, social problems) sequelae. Within these syndromal frameworks, identifying and measuring the symptoms thought to be associated

with MI has been prioritized over identification and measurement of distinct PMIEs themselves.

While settling the phenomenological versus syndromal debate is outside the scope of the current study, it is important to note that the current investigation was carried out with an attempt to integrate both phenomenological *and* syndromal perspectives to scale development and MI measurement. This approach reflects the position that the use of either perspective in isolation will be insufficient in expanding the study of MI to other relevant populations. Purely phenomenological approaches will continue to confound exposure to PMIEs with the experience of MI and will continue to demand the development of population-specific instruments. Yet, the field of MI has not yet achieved a unified consensus on the symptom profile associated with MI, and so a purely syndromal approach to measurement risks problems with under-sensitivity to potential symptom manifestations and the unique morally injurious events that may precipitate MI.

To this end, the current study was undertaken to develop and preliminarily evaluate a novel tool to identify MI in PSP that could query symptoms thought to be conserved across populations while remaining sensitive to the unique morally-relevant experiences of PSP. While this attempt at an integrative approach does not preclude incorporating traditional understandings of MI development (i.e., most often following moral perpetrations or moral betrayals), it aims to explore and characterize MI in such a way that captures the unique population-specific experience while simultaneously allowing for an advancement of the understanding of shared MI symptomology, thereby lending

further support to the validity of MI as a construct relevant to mental health and well-being broadly.

3.3 Method

3.3.1 Scale Development

The Moral Injury Assessment for Public Safety Personnel (MIA-PSP) was constructed over multiple phases. First, an initial set of items was generated through consultation with multiple sources using an iterative process with repeated feedback. This included a comprehensive review of the existing body of literature exploring moral distress in PSP populations and other psychometrically valid measures of related constructs (e.g., shame, anger, and MI in other populations). Additionally, a team of content experts in the field were consulted extensively in order to further capture beliefs, attitudes, emotions, and behaviours that morally injured PSP might endorse. This pool of candidate items was then reviewed for clarity, appropriateness, and face validity by additional clinical experts in the disciplines of moral injury, trauma, and PTSD in PSP populations. These initial steps resulted in a final pool of 50 candidate items that were piloted in the current study and analysed as described below in order to identify the superior performing items that should be retained for further testing.

Items prompted participants to read several statements describing morally-relevant events related to PSP service with an emphasis on the impact of the event rather than the mere exposure (e.g., "I am bothered that I chose to protect myself rather than protecting another person (e.g., leaving a house fire")). Respondents were asked to indicate their level of agreement on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly

agree). Importantly, items queried multiple dimensions of MI to integrate both phenomenological and syndromal perspectives; these included acts of commission, omission, and perceived moral shortcomings or betrayals by the employing institutions, as well as other emotional and behavioural sequelae conceptually related to the experience of MI. While all 50 of the original candidate items were carefully worded, as described above, in an attempt to integrate phenomenological and syndromal approaches to measurement, 15 of these items were specifically querying symptoms relating to MI as set out by the Jinkerson (2016) framework and informed by clinical expertise (e.g., guilt, shame, loss of trust).

3.3.2 Participants and Procedures

Participants ($N = 270$) consisted of individuals aged 22-65 years ($M = 35$, $SD = 9.5$) who self-identified as PSP (See Table 1 for Participant Demographics). Following approval from the local Ethics Review Board, participants were recruited via an online crowdsourcing platform Amazon Mechanical Turk (MTurk), email (listservs of PSP groups), and social media (Facebook, Twitter) to complete an online survey via REDCap (an encrypted survey website) as part of a larger investigation into the well-being of PSP across Canada (33%) and the USA (66%). Prior to beginning the battery of questionnaires, which included the MIA-PSP and assessments of other related constructs, participants were presented a Letter of Information and asked to provide their informed consent to participate via checking the designated box. Embedded in the questionnaire package were several neutral and falsification statements ("I am currently the Prime Minister of Canada") in order to detect random responding. Upon completion of the

questionnaire package, respondents were redirected to a Debrief Form which outlined the nature of the study and provided resources for further reading. Participants were compensated $2.00 per survey and had the opportunity to opt into a draw for a chance to win one of ten $20.00 gift cards.

3.3.3 Measures

In addition to the MIA-PSP described above, seven additional measures were administered concurrently for preliminary evaluation of MIA-PSP construct validity. This included (1) the Moral Injury Events Scale (MIES; coefficient *a* = 0.90; Nash et al., 2013), a self-report MI measure validated for military populations. Additional measures included (2) the Trauma-Related Shame Inventory (TRSI; coefficient *a* = 0.98; Oktedalen et al., 2014); (3) the Trauma-Related Guilt Inventory (TRGI; coefficient *a* = 0.92; Kubany et al., 1996); (4) the Posttraumatic Stress Disorder Checklist for DSM–5 (PCL-5; coefficient *a* = 0.97; Blevins et al., 2015); (5) the Depression Anxiety Stress Scale – 21 (DASS 21; coefficient *a* = 0.97; Lovibond & Lovibond, 1995); (6) the Multiscale Dissociation Inventory (MDI; coefficient *a* = 0.98; Briere, 2002); and (7) the World Health Organization Disability Assessment Schedule (WHODAS 2.0; coefficient *a* = 0.96; WHO, 2010).

3.3.4 Data Analysis

From the initial sample of 280 participants who completed the MIA-PSP, 10 cases contained >%10 missing values. Little's Missing Completely at Random (MCAR) test was conducted (p=.728), indicating that data were MCAR and as such, these cases were

eliminated from analysis resulting in a final sample size of 270. Data were visually inspected for outliers using box plots and 5% trimmed means; no outliers were identified.

To evaluate the theorized factor structure of the MIA-PSP we followed established guidelines, performing a parallel analysis in conjunction with an exploratory factor analysis (EFA) to identify items with strong simple structure (i.e., factor loadings and communalities above .50 and cross-loadings below .35 unless otherwise indicated; Floyd & Widaman, 1995). First, a parallel analysis was utilized to determine the number of factors that were beyond chance (O'Connor, 2000). Second, an EFA using principal axis factoring and varimax rotation was conducted to examine the factor loadings of the identified factor structures. We utilized the covariance matrix as this allowed for a more sensitive factor structure given that all MIA-PSP variables were measured on the same scale. Results of the parallel analysis and EFA were examined iteratively and in combination. Throughout the analysis, items were evaluated and eliminated based on multiple criteria: theory, communalities, item loadings, no significant cross-loadings, and in order to retain a minimum of three salient loadings per factor.

Once the factor structure was established, we examined the internal consistency of the MIA-PSP subscales by calculating Cronbach's alpha values (Reuterberg & Gustafsson, 1992). In order to test construct validity, and given the non-parametric nature of the data, we conducted Spearman's correlations to compare MIA-PSP scores to the MIES and other measures expected to be theoretically similar (e.g., guilt, shame, symptoms of PTSD, etc.).

3.4 Results

3.4.1 Factor Structure of the MIA-PSP

The value of the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.95, and Bartlett's test of sphericity was significant ($p < .001$), indicating that the data were acceptable for factor analysis. Results of a parallel analysis suggested a 3-factor structure which was supported by a scree plot. We therefore ran an EFA specifying a three-factor solution. Eigenvalues for the three-factor model were 3.65, 3.41, and 2.99, and explained 59.1% of the total variance. Loadings for each of the three factors are presented in Table 2. Factor 1 ("emotional sequelae") consisted of 7 items, Factor 2 ("perpetrations") consisted of 5 items, and Factor 3 ("betrayals") consisted of 5 items, resulting in a final 17 item scale.

3.4.2 Internal Reliability

The MIA-PSP demonstrated strong internal consistency. Cronbach's alphas for the full scale ($a = 0.93$) and each of the three subscales (F1: $a = 0.89$; F2: $a = 0.89$; F3: $a = 0.86$) ranged from good to excellent. Item-total correlations were also calculated and ranged between 0.54 and 0.72, suggesting all items were successfully measuring the same underlying global construct.

3.4.3 Validity

As a preliminary indicator of validity of the MIA-PSP and to establish justification for future psychometric validation studies of the instrument, we examined the associations between MIA-PSP scores and the additional measures administered (see Table 3 for Spearman's Correlations and Table 4 for Descriptive Statistics). Notably, the MIA-PSP

was positively correlated with the MIES ($r = .82$), providing preliminary evidence of criterion validity. Additionally, MIA-PSP scores were strongly associated with several other measures of psychological distress which we hypothesized might accompany MI (correlations ranged between .59 and .69), including trauma-related guilt and shame and symptoms of depression, anxiety, and PTSD. These associations with psychological correlates of MI suggest preliminary convergent validity for the MIA-PSP.

3.5 Discussion

The present investigation extends the study of MI to the work-related experiences of PSP. Despite the emerging recognition of the relevance of MI within this population (Lentz et al., 2021), the MIA-PSP is the first tool to capture aspects of MI uniquely relevant to PSP. Our approach, which integrated phenomenological and syndromal perspectives guided by theory and clinical expertise, resulted in a measure of morally injurious experiences in PSP with promising psychometric properties. While future studies are required to truly establish validity and reliability of the MIA-PSP, our results preliminarily demonstrate strong internal consistency and criterion and construct validity for the 17-item scale and reveal three underlying latent factors.

Two of these factors, perpetrations and betrayals, replicate the existing body of literature that has highlighted both perceived transgressions by self and others as two dimensions of PMIEs (Schorr et al., 2018; Shay, 2014; Stein et al., 2012). First, regarding transgressions by others: our results suggest that PSP are also susceptible to moral pain following moral betrayals from trusted others. The five items that were retained to comprise the betrayal factor suggest that MI in PSP may result from perceived

institutional transgressions, including insufficient recognition or acknowledgement of workplace stress and insufficient support or training leading to negative consequences on the job. Second, and regarding transgressions by self: the five items retained to comprise the perpetration factor suggest that for PSP, moral pain can result from both the commission of a perceived moral violation (e.g., hurting one life to save another) and the failure to prevent one (e.g., failing to save a life), further replicating similar findings from the military literature (Forbes et al., 2015; Yeterian et al., 2019). Interestingly, three of the items retained in the perpetration factor relate to moral transgressions by the self against co-workers. To our knowledge, no studies have attempted to measure or characterize the moral pain experienced by PSP who are required to take disciplinary action against their colleagues. However, these items suggest that PSP who are made to scapegoat, ostracize, or otherwise discipline their co-workers are at increased risk of developing MI. As evidenced by the content of the retained items, this may be particularly true when colleagues are being used as scapegoats for institutional transgressions, highlighting potential overlapping and compounding effects of perpetration and betrayal experiences.

The replication of the perpetration and betrayal domains that were originally conceptualized and established in the military literature highlights the utility of phenomenological approaches. That is, our results suggest that efforts to measure MI should continue to explore morally relevant transgressions by self and others as this work extends to new populations. Notably, our work emphasizes the need to consider nuanced and population-specific instances of perpetration and betrayal PMIEs in order to most accurately measure moral pain and moral injury unique to specific groups.

Though future work into the mechanisms underlying the impact of perpetration and betrayal PMIES is needed, it is plausible that repeated exposure to moral transgressions can undermine beliefs about the goodness and trustworthiness of oneself or others (Litz et al., 2009; Yeterian et al., 2019); over time, this might prompt PSP to question their own tactical decision-making or the virtue of orders received from leaders and highlight a contrast between their own work-related behaviour, moral values, and beliefs. This discrepancy between a PSP member's own moral code and the actions requested or required for their work may lead to the kind of moral pain that, if chronic and left unresolved, can elicit symptoms of moral injury (Drescher et al., 2011). Research in this area is in its infancy but is beginning to suggest that the experience of such a moral conflict can be recognized by its subsequent psychological and emotional symptoms (Jinkerson, 2016). Accordingly, the MIA-PSP provides important advances in our understanding of MI in PSP beyond the replication of the perpetration and betrayal domains by better capturing the resulting *experience* of a moral wound. For example, in both perpetration and betrayal factors, the item stems (i.e., "I am bothered by…") were intentionally worded to shift respondents' focus beyond the exposure of the event and onto the subjective experience of it.

More pertinently, our analysis also revealed a third latent factor, emotional sequelae, representing the affective symptoms associated with MI. In line with emerging syndromal definitions of MI (Jinkerson, 2016; Koenig et al., 2018b, 2018a), the emotional sequelae factor measures respondents' experiences of morally relevant emotions including guilt, shame, and anger related to their PSP service. However, in contrast to the few existing

measures that attempt to assess the experience of a moral wound by incorporating emotional symptoms into their items (Currier et al., 2017; Koenig et al., 2018b; Mantri et al., 2020), the 3-factor structure of MIA-PSP does not assume or require that specific emotions are linked to specific self or other-directed behaviours in order for respondents to endorse the item. Instead, the MIA-PSP measures emotional symptoms independent from perpetration and betrayal events via the emotional sequelae factor. We consider this distinction to be important; while self-conscious emotions (e.g., shame) most often occur in response to our own behaviour (as evidenced by cross loadings in the current study) and other-focused emotions (e.g., anger) most often occur in response to transgressions by others, this is not always the case (Tangney et al., 2007). Indeed, restricting the query of specific emotional symptoms to particular events could result in overlooking important aspects of MI that deviate from those assumed behaviour-emotion relations, for example, experiences of anger or disgust in response to one's own behaviour or internalized experiences of shame following the transgressions of others.

As such, the MIA-PSP offers a novel way for clinicians and researchers to measure MI in PSP that integrates both phenomenological and syndromal approaches, remaining sensitive to their unique PMIEs while simultaneously and flexibly capturing relevant affective symptoms. The replication of perpetration and betrayal domains lends support to the validity of MI as a novel construct and its generalizability to – and utility for – new populations. Moreover, and in contrast to MI measures that solely assess past exposure to PMIEs, the focus of the MIA-PSP on respondents' subjective experience of a moral

wound will allow for enhanced utility for researchers and clinicians alike seeking to measure current MI experiences.

3.5.1 Limitations

Despite the noted strengths of the current study, results should be considered in light of the following limitations. Most notably, scale development practices typically occur over multiple phases, of which the current study represents only the first. Here, it is most common for item piloting and trimming to be done first, with confirmatory analyses and psychometric testing completed in subsequent phases. As the current study presents both an initial factor structure and evaluative properties from a single sample, the psychometric findings should be considered a preliminary evaluation of the relevance of MI to PSP work and the potential usefulness of the MIA-PSP – that is, groundwork for future work in the area – and not sufficient evidence of the tool's validity and reliability. As such, all results should be considered preliminary and interpreted from this lens until future work builds on these efforts.

Several other limitations should be considered. First, while we established convergent validity with a number of measures of conceptually related constructs (e.g., PTSD, guilt, shame), our investigation did not include measures of theoretically dissimilar constructs and therefore we cannot conclude that the MIA-PSP exhibits strong discriminant validity. Second, though the convergent validity established is a strong preliminary indicator of a valid scale, it should be noted that the self-report nature of our data collection may have contributed to the correlation between the MIA-PSP and other mental health measures. Third, while we demonstrated aspects of strong reliability (i.e., internal consistency and

item-total correlations) suggesting that items are measuring the same underlying

construct, we did not explore temporal reliability of the measure. Therefore, the stability

of the instrument could not be established. As noted, addressing these limitations is the

intent of future phases of this work. Finally, various factors may limit the generalizability

of our results, primarily recruitment via self-selection, and a resulting largely

homogenous sample. It would be important to replicate these findings in other settings,

particularly given the complex interplay between mental health and psychosocial factors,

such as SES and educational attainment (Vukojević et al., 2017).

3.5.2 Future Directions and Clinical Implications

The current study addresses several gaps in the MI literature by integrating

phenomenological and syndromal perspectives to enhance our understanding of the PSP

experience. In doing so, we have offered corroborating evidence of the shared antecedents

and consequences of MI while also revealing aspects unique to PSP service and laying the

foundation for future work in the area. Namely, scholars in the field should continue to

shift the focus of MI research onto identifying a consistent symptom profile that can be

used to assess MI across populations. As we hope to demonstrate in future work with the

MIA-PSP, assessments that can highlight symptomology or other functional impairment

will be most useful in clinical practice for identifying treatment targets most relevant to

any given client. Of course, subsequent validation studies will need to be undertaken with

the MIA-PSP in order to more accurately assess its ability to do what we purport; that is,

to both capture these symptom level experiences while remaining sensitive to the unique

PSP experience.

Additionally, as evidence grows demonstrating the widespread effect of MI on physical and psychological health outcomes, it will be essential to identify the risk factors for MI and employ targeted strategies to mitigate their effects. In a similar vein, as research in other populations has revealed high comorbidity rates between MI and PTSD (Barnes et al., 2019; McEwen et al., 2020), it will be important for future studies to replicate this work in PSP members (particularly given their increased exposure to life-threatening traumatic events) and subsequently uncover the mechanisms that underlie the association between these constructs. Determining the overlapping mechanisms impacting the development of MI and PTSD could reveal targets for preventative intervention both within and beyond PSP populations disproportionately exposed to traumatic events.

Importantly, it must be noted that the data described here were collected prior to several impactful events of recent years including the global Covid-19 Pandemic and the rise of the Black Lives Matter movement. These events have changed the landscape of front-line work with significant repercussions for PSP (Gaitens et al., 2021). As such, it should be expected that additional causes, manifestations, and consequences of moral injury will come to light in the coming years as research continues to explore and integrate the lasting impacts of these socio-political events into our growing understanding of moral injury.

Ultimately, the MIA-PSP is the first stand-alone instrument to measure MI in PSP. Its continued development, evaluation, and future use will provide a psychometrically robust and accessible assessment tool for researchers and clinicians alike to capture the morally

injurious experiences of PSP members and inform targeted intervention efforts into the future.

References | Study Two

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Tables | Study Two

Table 1
Participant Demographics (*N* = 270)

	%
Sex	
Male-identified	63
Female-identified	33
Affiliation	
Firefighter	19
Paramedic	44
Police	17
Dispatcher	6
Other	14
Employment Status	
Full-time	83
Part-time	10
On leave/retired/unemployed	7
Race	
White	85
Black	5
Hispanic	4
Asian	5
Middle Eastern	.5
Other	.5
Education	
Completed college/university	50
Some post-graduate	11
Completed post-graduate	22

Table 2
MIA-PSP Factor Loadings

Item	F1	F2	F3
1. I am bothered by feelings of sadness	.75	-	-
2. I am bothered by feelings of anger	.68	-	-
5. I am bothered by feelings of self-hatred	.67	.41	-
3. I am bothered by feelings of guilt	.66	-	-
4. I am bothered by feelings of shame	.64	.40	-
7. I am bothered by feelings of disgust	.63	-	-
6. I am bothered by feelings of fear	.58		
22. I am bothered because I was made to ostracize a co-worker as a Whistle Blower	-	.81	-
23. I am bothered because I was made to blame innocent co-worker(s) for the institution's transgression (Scape-goating)	-	.79	-
14. I am bothered that I had to take disciplinary action against a staff member/co-worker	-	.73	-
4. I am bothered that I chose to protect myself rather than protecting another person (e.g., leaving a house fire)	-	.63	-
2. I am bothered that I had to hurt another person in order to do my job (e.g., hurting an individual to save another life)	-	.60	-
31. I am bothered by the lack of institutional supports to assist the public safety personnel/first responders who are expected to expose themselves to highly stressful incidents	-	-	.73
18. I am bothered that my employer did not provide sufficient training, which resulted in negative consequences (e.g., personal mental health, accidents, death)	-	-	.70
32. I am bothered that my management or company does not uphold its values/philosophy	-	-	.67
33. I am bothered that my employer does not respect or recognize the work I do	-	-	.67
30. I am bothered that my employer does not acknowledge those that have died as a result of a mental illness acquired through the workplace	-	-	.66

Note. F = Factor

Table 3
Study Variable Spearman's Correlations

	1	2	3	4	5	6	7	8	9	10
MIA-PSP										
1. Total	-									
2. Factor 1	.87**	-								
3. Factor 2	.85**	.60**	-							
4. Factor 3	.77**	.54**	.49**	-						
5. MIES	.82**	.71**	.71**	.63**	-					
6. TRSI	.69**	.59**	.71**	.42**	.60**	-				
7. TRGI	.59**	.55**	.57**	.33**	.52**	.68**	-			
8. PCL-5	.64**	.62**	.51**	.48**	.59**	.74**	.56**	-		
9. DASS-21	.69**	.64**	.61**	.47**	.61**	.82**	.62**	.83**	-	
10. MDI	.69**	.60**	.70**	.39**	.61**	.78**	.57**	.75**	.82**	-
11. WHODAS	.68**	.62**	.62**	.44**	.62**	.76**	.55**	.79**	.82**	.85**

Note. MIA-PSP = Moral Injury Assessment for Public Safety Personnel; MIES = Moral Injury Events Scale; TRSI = Trauma-Related Shame Inventory; TRGI = Trauma-Related Guilt Inventory; PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5; DASS-21 = Depression, Anxiety, Stress Scale – 21 Item; MDI = Multiscale Dissociation Inventory; WHODAS = World Health Organization Disability Assessment Schedule.
** *p* < .001

Table 4
Descriptive Statistics (N = 270)

	Mean	Standard Deviation	Min	Max
MIA-PSP				
Total	59.6	21.9	8	100
Factor 1	25.0	9.7	0	42
Factor 2	15.0	8.5	0	30
Factor 3	19.6	7.7	0	30
MIES	32.0	12.5	0	53
TRSI	25.4	20.9	0	72
TRGI	1.8	1.1	0	4
PCL-5	34.2	20.1	0	79
DASS-21	25.1	16.9	0	60
MDI	70.1	32.4	29	139
WHODAS	16.2	12.7	0	44

Note. MIA-PSP = Moral Injury Assessment for Public Safety Personnel; MIES = Moral Injury Events Scale; TRSI = Trauma-Related Shame Inventory; TRGI = Trauma-Related Guilt Inventory; PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5; DASS-21 = Depression, Anxiety, Stress Scale – 21 Item; MDI = Multiscale Dissociation Inventory; WHODAS = World Health Organization Disability Assessment Schedule.

Chapter 4 | Study Three

General Purpose

One of the ultimate aims of instrument development is to translate a complex psychological process into an operationalized set of data that can then be used to help answer important questions about the construct/population under study. This is a crucial step to take when considering a syndrome like MI that can have profound and prolonged implications for one's social and psychological well-being.

To represent this ultimate stage of measuring and characterizing a psychological construct in a new population, Study Three employs the MIA-PSP to advance our understanding of important antecedents and consequences of MI in PSP. The following dissertation chapter, published in the journal of *Child Abuse & Neglect*, presents data modeling the relations between exposure to early life adversity and subsequent risk of developing symptoms of MI and other adverse psychiatric consequences in a group of Canadian and American PSP. Study Three demonstrates the use of a health research instrument to answer questions such as "who is most likely to develop MI?", "what factors may protect against MI?", and "what are the subsequent consequences for those who do develop a MI?" The answers to these and similar questions, which can only be known through adequate assessment techniques, are invaluable to advance our understanding of prevention and treatment of mental health challenges across vulnerable populations.

Title and Authorship

Title: Mental health symptoms in Public Safety Personnel: Examining the effects of adverse childhood experiences and moral injury

Authors: Sophia L. Roth, Krysta Andrews, Alina Protopopescu, Chantelle Lloyd, Charlene O'Connor, Bruno J. Losier, Ruth A. Lanius, & Margaret C. McKinnon

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4.1 Abstract

Background: Adverse Childhood Experiences (ACEs) increase risk for negative mental health outcomes in adulthood; however, the mechanisms through which ACEs exert their influence on adult mental health are poorly understood. This is particularly true for Public Safety Personnel (PSP; e.g., police, firefighters, paramedics, etc.), a group with unique vulnerability to negative psychiatric sequalae given their chronic exposure to potentially traumatic, work-related events.

Objectives: To examine the role of moral injury (MI) and emotion regulation in the relation between ACEs and adult mental health symptoms in adulthood.

Participants and setting: Participants (N = 294) included a community sample of Canadian and American PSP members aged 22 to 65.

Methods: The current study uses cross-sectional data collection via retrospective self-report questionnaires administered between November, 2018 and November, 2019 to assess level of ACEs (ACE-Q), emotion regulation difficulties (DERS) and symptoms of post-traumatic stress (PCL-5), dissociation (MDI), depression, stress, and anxiety (DASS-21). Additionally, participants completed the Moral Injury Assessment for Public Safety Personnel, the first measure of MI developed specifically for PSP.

Results: Path analysis revealed that ACEs significantly predicted adverse mental health symptoms in adulthood; this effect was mediated by symptoms of MI and moderated by difficulties with emotion regulation.

Conclusions: This study is the first to identify MI as a mechanism involved in the relation between ACEs and adult psychopathology and highlights the protective role of

emotion regulation skills. These findings can inform the development of future research

and clinical interventions in PSP populations.

4.2 Introduction

The deleterious impact of adverse childhood experiences (ACEs) on adult mental health is well established and includes a host of psychiatric sequelae, including symptoms of post-traumatic stress disorder (PTSD), depression, and anxiety (Bardeen et al., 2013; Barlow et al., 2017; Cabrera et al., 2007). Despite consistent findings that ACEs negatively impact adult mental health, studies exploring the mechanisms through which ACEs exert their effect are limited (Cloitre et al., 2019). Recent work points towards moral injury (MI), a relatively new syndrome characterized by profound psychological distress following the perpetration of a moral violation or after being betrayed in a morally violating way (Drescher et al., 2011; Jinkerson, 2016; Litz et al., 2009a), as a potential mechanism. Here, emerging evidence in the field reveals that MIs are associated with both adversity in childhood and negative mental health outcomes in adulthood, particularly trauma-related pathologies such as PTSD and depression (Battaglia et al., 2019; Litz et al., 2009). Exploring this putative relation between ACEs, MI, and adult mental health outcomes may be particularly relevant for Public Safety Personnel (PSP), including police, firefighters, paramedics, emergency dispatchers, and correctional workers, for whom exposure to work-related traumatic and morally conflicting experiences is pervasive (e.g., chronic exposure to death, failing to save a life, etc.) and may potentiate the effects of childhood traumas. Accordingly, the current study explores the role of moral injurious experiences as a potential mechanism through which childhood adversities influence mental health into adulthood.

4.2.1 ACEs and Adult Mental Health

Approximately 33% of Canadians are estimated to have experienced some form of adversity in childhood, which can include physical, emotional, or sexual abuse, neglect, and/or exposure to interpersonal violence or household dysfunction (Afifi et al., 2016). Adversity experienced in childhood and adolescence has been linked to a cascade of physical and mental health problems throughout life and into adulthood including several adverse psychosocial outcomes (Hughes et al., 2017; Merrick et al., 2017; Rieder et al., 2019). Notably, ACEs have been consistently associated with chronic psychiatric illnesses including PTSD, dissociation, depression, and anxiety across populations via a graded, dose-response relationship (Bardeen et al., 2013; Barlow et al., 2017; Cabrera et al., 2007; Edwards et al., 2003; England-Mason et al., 2018; Merrick et al., 2017). For example, a study completed by the WHO examining childhood adversity and adult pathology found ACEs – particularly household dysfunction – to account for nearly 30% of all mental health disorders across the 21 high-, middle-, and low-income countries surveyed (Kessler et al., 2010). These findings have been replicated, supporting a clear associations between various forms of childhood adversity and other adverse mental health outcomes, including substance abuse, anger and hostility, and suicidality (Hughes et al., 2017; Norman et al., 2012; Zarse et al., 2019).

One possible mechanism to explain the relation between ACEs and adverse psychiatric symptoms in adulthood is via impaired recovery from adult trauma exposure (Barlow et al., 2017; Iversen et al., 2007; Sareen et al., 2013). For example, a study examining combat-related trauma exposure in American military members found that troops who

reported higher levels of ACEs were significantly more likely to endorse PTSD and depression symptoms even after controlling for the contribution of the traumatic event itself (Cabrera et al., 2007). These results suggest that, beyond directly impacting mental health, ACEs may indirectly impact adult functioning via impaired trauma recovery following subsequent trauma exposure in adulthood. Thus, examination of the specific mechanisms linking ACEs to adult mental health and/or impaired trauma recovery is needed; for example, the role of the moral emotional consequences of ACEs (e.g., guilt, shame, or moral injury) and emotion regulation difficulties that may impair recovery following adult trauma and increase susceptibility to PTSD and other adverse mental health outcomes.

4.2.2 ACES, Moral Injury, and Emotion Regulation Difficulties

   Moral injury (MI) is a relatively new construct originating in the military arena and is characterized by psychological, spiritual, and behavioural suffering following perceived moral transgressions (Drescher et al., 2011; Jinkerson, 2016; Litz et al., 2009). The experience of MI most often follows the perpetration of a moral violation (through either committing, witnessing, or failing to prevent an immoral act), or after being betrayed in a morally violating way by a trusted individual or organization in power (Yeterian et al., 2019). For instance, a combat troop may experience a profound sense of guilt and shame after failing to prevent the death of allied combatants, or a deep sense of betrayal after being used as a scapegoat for institutional transgressions. Consequently, MI leads to a sequelae of negative experiences including guilt, shame, loss of trust, anger, and behavioural and interpersonal challenges (Jinkerson, 2016).

MI research is still in its infancy with minimal work done outside of the military context (Lentz et al., 2021). Even within military populations, researchers are in the beginning stages of exploring the links between ACEs, MI, and other mental health outcomes, with no studies to date considering all three constructs in a single model. One study completed among members of the Canadian Armed Forces found that individuals who experienced adversity in childhood–particularly emotional abuse and exposure to household violence–were at an increased risk of developing MI symptoms following combat exposure even after controlling for their combat-related trauma (Battaglia et al., 2019). To our knowledge, no other studies have explored the association between ACEs and MI; however, it is plausible that across populations at risk of experiencing moral transgressions, ACEs may serve as a unique risk factor increasing susceptibility to experiencing MI.

One possible explanation for this is the impact of ACEs on the development of emotion regulation skills. Emotion regulation (ER) refers to an individual's ability to understand, tolerate, and respond appropriately to emotions evoked by their environment (Cook et al., 2005). The literature on ACEs and ER difficulties suggests that experiences of childhood adversity alter ER functioning and impair an individual's ability to adaptively interpret, understand, and process emotional information (Cloitre et al., 2019; Luke & Banerjee, 2013; Wingenfeld et al., 2011). Indeed, though the direct association between ACEs and MI remains largely untested, there is a body of research implicating ACEs in the experience of individual moral emotional experiences such as guilt, shame, anger, and self-blame – all experiences consistent with MI and that would reasonably be

exacerbated for individuals with emotion regulation difficulties (Battaglia et al., 2019; Briere, 1992; Cook et al., 2005; Jinkerson, 2016; Protopopescu et al., 2020). Notably, individuals who have experienced chronic or complex abuse and attachment trauma – forms of abuse often perpetrated by caregivers in the context of trust and formation of attachment bonds – are likely at an increased risk for disrupted emotion regulation processes and moral-affective syndromes like MI in later life (Frewen et al., 2019; Nilsson et al., 2011; Zarse et al., 2019).

Research has also demonstrated an association between ER difficulties and other adverse mental health outcomes following trauma exposure; here, impaired ER skills have been linked to adverse mental health outcomes including PTSD, depression, and anxiety (Bardeen et al., 2013; Burns et al., 2010; Cloitre et al., 2019; Nickerson et al., 2015). Further, a recent study found that difficulty with emotion regulation was an important predictor of trauma-related symptoms even after controlling for trauma severity (Barlow et al., 2017). As such, it is reasonable to expect that processes of emotional regulation would prove a meaningful avenue for inquiry when exploring the links between ACEs and affective syndromes like MI.

In contrast to the dearth of literature examining the link between ACEs and MI, there is a growing body of research establishing an association between MI and other adverse mental health outcomes. In military studies and preliminary work with other populations including refugees fleeing persecution (Hoffman et al., 2019; Nickerson et al., 2018), healthcare and other essential workers during the Covid-19 Pandemic (Gaitens et al., 2021; Mantri et al., 2020), and justice-involved individuals found Not Criminally

Responsible (Roth et al., 2021), morally injurious experiences have been associated with

self-harm and suicidality, anger, hostility and aggression, social withdrawal, substance

abuse, and a loss of spirituality (Bryan et al., 2018; Jinkerson, 2016; McEwen et al.,

2020). Importantly, MI has also been implicated in the development of psychiatric

illnesses including PTSD, depression, and anxiety (Currier et al., 2015; Griffin et al.,

2019; Nazarov et al., 2015, 2018; Watkins et al., 2016; Williamson et al., 2018). These

studies have demonstrated that the mere exposure to potentially morally injurious events

(e.g., witnessing unnecessary destruction of civilian property, witnessing acts of violence,

etc.) places individuals at a greater risk of developing adverse mental health outcomes

such as PTSD and depression. Notably, a recent meta-analysis carried out by Williamson

et al. (2018) found that exposure to work-related morally injurious events accounted for

nearly 10% of the variance in PTSD symptoms and 5% of the variance in depression

symptoms, further evidencing MI's unique contribution to adverse mental health

outcomes. These findings, in combination with preliminary work suggesting associations

between ACEs, ER difficulties, and MI symptoms, provide compelling justification for

further delineating the relations between ACEs, MI, emotion regulation and adult mental

health outcomes.

4.2.3 Public Safety Personnel

If ER difficulties and symptoms of MI do, indeed, serve as important mechanisms

impacting the relation between ACEs and adult mental health, this may be particularly

relevant for individuals in settings where exposure to traumatic stress in adulthood is

chronic with little opportunity for recovery following trauma exposure. One such group

disproportionately exposed to workplace trauma are Public Safety Personnel (PSP). Though PSP roles and responsibilities may vary across socio-geographic locations (e.g., PSP in America vs Canada) and across disciplines (e.g., police vs paramedics vs firefighters), PSP are collectively and repeatedly exposed to situations involving violence, injury, and death (Carleton et al., 2019). Unsurprisingly, and in line with other occupations with high rates of trauma exposure (e.g., military), PSP across disciplines are at a greater risk than the general population of developing PTSD, depression, anxiety, and dissociation following these events (Asmundson & Stapleton, 2008; Berger et al., 2012; Carleton et al., 2019; Faust & Ven, 2014; Haugen et al., 2012; Neal & Brodsky, 2016). For example, a recent study (Carleton et al., 2018) found that approximately 45% of PSP in Canada screened positive for one or more mental health disorders – primarily PTSD (23%) and MDD (26%) – which is in line with military rates (e.g., 30-45%; Statistics Canada, 2018) and well above the national average diagnostic rates (10%; Statistics Canada, 2012).

Beyond the fear-based traumatic events associated with PTSD and other established mental health outcomes, PSP across disciplines are also chronically exposed to morally distressing, high-stake situations that may lead to MI (Lentz et al., 2021; Weiss et al., 2010). For example, PSP are regularly asked to take responsibility for morally ambiguous life-and-death decisions including the allocation of limited lifesaving resources or the use lethal force (Chopko et al., 2015; Papazoglou & Chopko, 2017; Regehr et al., 2003; Weiss et al., 2010). Moreover, and despite often rigid moral codes of conduct within public safety organizations, PSP members themselves are often bound by institutional

limitations that may impede the provision of high quality or best-practice service, such as limited access to necessary resources or insufficient training and support (Jafari et al., 2019; Qashu Lim, 2017; Raganella et al., 2004). The implications of these events are often exacerbated further by post-mortem organizational inquiries and media coverage that is often perceived as judgemental and has subsequently been linked to increased reports of PTSD, depression, and use of mental health stress leaves (Regehr et al., 2003).

Given their disproportionate exposure to work-related trauma, PSP may be particularly vulnerable to the deleterious effects of ACEs. Studies examining rates of ACEs in similar fields (e.g., the Canadian Armed Forces) suggest that military members experience higher rates of ACEs than the general population, and that the experience of childhood adversity may in fact influence future career choices (Afifi et al., 2016; Battaglia et al., 2019; Blosnich, et al., 2014). It is unclear whether the same relations exist for PSP, although preliminary work exploring ACEs and mental health outcomes in this group has found that police officers and firefighters who do report higher levels of ACEs are more likely than those without ACEs to endorse symptoms of PTSD, dissociation, depression, and sleep problems following job-related trauma exposure (Komarovskaya et al., 2014; Wang et al., 2010). Given the disproportionate rates of trauma exposure in PSP, there is an urgent need to explore the relation between factors hypothesized to contribute to adverse mental health outcomes, such as MI, ACEs, and ER difficulties.

4.2.4 The Current Study

The purpose of the current study was to explore the influence of work-related MI on the association between childhood adversity and adult mental health symptoms in PSP.

No study to date has proposed MI as a mechanism through which childhood adversity exerts its effects on adult mental health, nor attempted to explore these pathways in PSP groups. Here, we set forth the following objectives:

1. To establish the relation between ACEs and adult mental health in PSP (i.e., symptoms of PTSD, depression, stress, anxiety, and dissociation).

2. To explore the mediating role of MI symptoms on the association between ACEs and adult mental health symptoms.

3. To examine the moderating effect of ER difficulties on these proposed pathways.

We hypothesize that PSP members who experienced higher levels of adversity in childhood will be more vulnerable to morally injurious work experiences due, in part, to impaired ER abilities, and in turn be more susceptible the development of other adverse mental health symptoms in adulthood. Across vulnerable populations, this study is the first to examine the unique associations between ACEs, MI, ER, and adult mental health symptoms.

4.3 Method

4.3.1 Participants and Procedures

Participants ($N = 249$, 64% male-identified) consisted of individuals aged 22-65 years ($M = 35$, SD = 9.3) who self-identified as PSP. Of the 158 who elected to disclose their past or current PSP affiliation, 19% identified as a firefighter, 44% as a paramedic, 17% as a police officer, 6% as a dispatcher, and 14% as PSP-other (e.g. security guards, correctional workers). At the time of data collection, 83% of individuals reported working

full-time or 10% part-time, and 7% reported being off of work on leave (disability,

parental, etc.), retired, or otherwise unemployed. Participants identified as White (85%),

Black (5%), Hispanic (4%), Asian (5%), Middle Eastern (.5%), or Other (.5%).

Approximately 50% of respondents reported completing college/university, 11% reported

completing some post-graduate work, and 22% completing a post-graduate degree.

Participants were recruited via an online crowdsourcing platform Amazon Mechanical

Turk (MTurk), email (listservs of PSP groups), and social media (Facebook, Twitter)

between November of 2018 and November of 2019 to complete an online survey via

REDCap (an encrypted survey website) as part of a larger investigation into the well-

being of PSP across Canada (31%) and the USA (68%). Prior to beginning the battery of

questionnaires, participants were presented a Letter of Information and asked to provide

their informed consent to participate via checking the designated box. Embedded in the

questionnaire package were several neutral and falsification statements ("I am currently

the Prime Minister of Canada") in order to detect random responding. Upon completion

of the questionnaire package, respondents were redirected to a Debrief form which

outlined the nature of the study and provided resources for further reading. Participants

were compensated $2.00 per survey and had the opportunity to opt into a draw for a

chance to win one of ten $20.00 gift cards.

4.3.2 Measures

Demographics. Participants completed a brief questionnaire that assessed basic

demographics including age, sex, nationality, race, and level of education.

Adverse Childhood Experiences. ACEs were measured using The Adverse Childhood Experiences Questionnaire (ACE-Q; Felitti et al., 1998; Merrick et al., 2017). The ACE-Q assesses the presence or absence of 10 commonly experienced ACEs. Using dichotomous variables (0 = No, 1 = Yes), participants indicated whether they had been exposed to a range of intra-familial adversity including emotional, physical, or sexual abuse, neglect, domestic violence, parental divorce or separation, substance abuse in the household, a mentally ill family member, or incarceration of a family member. Total scores were calculated by summing all items together with higher scores indicative of greater exposure to adversity. Internal consistency in this sample was good (Cronbach's alpha = .84).

Moral Injury Symptoms. MI was measured using the Moral Injury Assessment for Public Safety Personnel (MIA-PSP; Roth et al., in press) a 17-item MI assessment developed specifically for PSP. Participants were asked to read several statements endorsing symptoms of MI (e.g., "I am bothered that I chose to protect myself rather than protecting another person (e.g., leaving a house fire")) and indicate their level of agreement on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). Items queried 3 dimensions of potentially morally injurious experiences: perpetrations (i.e., committing or failing to prevent a moral transgression), betrayals (i.e., institutional moral transgressions), and emotional sequalae (i.e., affective experiences including guilt, shame, and anger following moral transgressions). All scale items were aggregated to produce a total score indicative of higher MI symptoms. The reliability of the total score was excellent in this sample (Cronbach's alpha = .93).

Adult Mental Health Symptoms. Mental health symptom severity was measured via the aggregation of symptom scales including PTSD, dissociation, depression, anxiety, and stress. PTSD symptoms were assessed using the Posttraumatic Stress Disorder Checklist for DSM–5 (PCL-5; Blevins, Weathers, Davis, Witte, & Domino, 2015). The PCL-5 is a 20-item self-report measure that assesses the 20 DSM–5 symptoms of PTSD. Items query how much the person has been bothered by the presented symptom or problem on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). The total PCL-5 score is calculated by summing together all items; higher scores indicate worse PTSD symptoms. The reliability of the total scale scores was high in this sample (Cronbach's alpha = .97). Dissociation symptoms were assessed using the The Multiscale Dissociation Inventory (MDI; J. Briere, 2002), a 30-item self-report inventory measuring the frequency at which individuals experience six domains of dissociative symptoms over the past month: disengagement, depersonalization, derealization, emotional constriction (Cronbach's alpha = .98). The Depression Anxiety and Stress Scale – 21 was used as a brief measure of depression (7 items), anxiety (7 items), and stress (7 items; DASS-21; Lovibond & Lovibond, 1995) .The DASS-21 asks participants to indicate how much they have been bothered by symptoms over the past week on a 4-point Likert scale ranging from 0 (never) to 4 (almost always). Internal consistency for the DASS-21 was excellent in this sample (Cronbach's alpha = .97).

Emotion Regulation. ER was assessed using the Difficulties in Emotional Regulation Scale (DERS; Gratz & Roemer, 2004), a 36-item measure of emotional dysregulation whereby participants evaluate their difficulties with awareness, understanding, and

acceptance of emotions, as well as their ability to act in desired ways regardless of

emotional state. Sample items include "I experience my emotions as overwhelming and

out of control;" and "When I'm upset, I have difficulty controlling my behaviors."

Participants rate how often they have difficulties with queried items on a 5-point Likert

scale ranging from 1 (almost never) to 5 (almost always). The total scale score was used

with higher scores indicating poorer ER. The reliability of the total scale scores was

excellent in this sample (Cronbach's alpha = .95).

Covariates. Sex, age, and race were included to control for any potential confounding

effects of these demographic factors on our variables of interest.

4.3.3 Analysis

To explore the association between ACEs and adult mental health symptoms,

conditional process modelling was used to test for moderated mediation as outlined by

Hayes (2018). Moderated mediation occurs when an indirect effect of *X* (predictor) on *Y*

(outcome) through *M* (mediator) is conditional on levels of a fourth variable, *W*

(moderator), that moderates one of the model pathways. This study examines the indirect

effect of ACEs (*X*) on adult mental health symptoms (*Y*) via MI symptoms (*M*).

Additionally, we tested the moderating effect of ER difficulties (*W*) on the association

between ACEs and MI symptoms.

The conditional indirect effect of the model was assessed in SPSS (version 26) using

Hayes' PROCESS macro (2018), model 7, for moderated mediation. The ordinary least

squares regression-based method employed by PROCESS for estimating direct and

indirect effects was utilized. For interpreting direct and indirect effects, bootstrapping

with 5,000 bootstrap samples and 95% bias corrected confidence intervals were used, as this method is robust to violations of traditional assumptions such as normality and linearity between variables (Hayes, 2018; Preacher et al., 2007). To explore the moderation effect of ER difficulties, scores for ACEs (ACE-Q) and MI symptoms (MIA-PSP) were mean centered. A simple slopes analysis, the default technique within PROCESS, was used to probe the moderation using the 16th, 50th and 84th percentiles as conditioning values (Aiken et al., 1991). Participant age, sex, and race were included as covariates.

Little's Missing Completely at Random (MCAR) test was run for all measures with missing data; results were insignificant ($p = 0.30$), indicating that data were MCAR. Cases where total scores for variables of interest were unable to be calculated due to significant missing data at the item level were excluded from the models through the PROCESS macro list-wise deletion, resulting in a total sample size of 249 from the original sample of 270. The data were examined for outliers and heteroscedasticity; no outliers were identified and the data were found to be heteroscedastic with non-normal residuals and so the PROCESS macro HC3 estimator was employed to allow for heteroscedasticity-consistent inferences (Davidson et al., 1985).

4.4 Results

Descriptive statistics and Spearman correlations are presented in Tables 1 and 2 respectively. Of note, 79% of respondents endorsed exposure to at least one ACE, and 44% reported exposure to two or more.

4.4.1 Moderating Effect of Emotion Dysregulation.

The association between ACEs (*X*; ACE-Q) and MI symptoms (*M*; MIA-PSP) was moderated by the level of ER difficulties (*W*; DERS; see Table 3). Across levels of adversity, higher ER difficulties were associated with higher MI scores. Similarly, across levels of ER difficulties, higher ACE scores were associated with higher MI scores. However, the strength of this effect varied conditional on the level of ER difficulties: at low levels of ER difficulties, MI scores did not significantly increase as ACE scores increased; whereas, at moderate and high levels of ER difficulties, MI scores were significantly greater as ACE scores increased (see Figure 1). In essence, low levels of ER difficulties (i.e., stronger ER skills) buffered the effect of ACEs on MI symptoms.

4.4.2 Mediating Effect of Moral Injury Symptoms.

In the model presented, significant associations were found between ACEs, MI symptoms and mental health symptoms. The regression path coefficients of the total effect (i.e., the effect of ACEs on mental health symptoms before adding MI to the model) and mediation models are presented in Table 3. Here, including MI symptoms as a mediator resulted in better model fit and significant mediation (see Table 4 for conditional indirect effects). The model demonstrated a significant conditional indirect effect of ACEs on mental health symptoms at both average and high levels of ER difficulties and accounted for 50% of the variance in adult mental health symptoms. The statistical model is presented in Figure 2. These results suggest that ACEs are associated with higher levels of MI symptoms in adulthood conditional on one's level of ER difficulties and are in turn associated with higher levels of mental health symptomology.

4.5 Discussion

This is the first study to examine the conditional indirect effect of ACEs on adult mental health symptoms via MI in PSP and the only study to use a measure of MI developed specifically for use in PSP populations. In line with our hypotheses, MI mediated the association between ACEs and mental health symptoms in adulthood; moreover, and in further support of our hypothesis, these effects were significantly moderated by ER difficulties. These findings represent a novel contribution to the study of antecedents to adverse mental health symptoms in PSP with important implications for the development of future research and clinical interventions within this population.

Our results are consistent with the existing body of literature demonstrating the impact of ACEs on adverse mental health outcomes in adulthood (Bardeen et al., 2013; Barlow et al., 2017; Cabrera et al., 2007; Zarse et al., 2019). Uniquely, our study is the first to demonstrate these associations within PSP, a group characterized by persistent and chronic exposure to trauma (Chopko et al., 2015; Lentz et al., 2021). Few, if any studies, have attempted to characterize ACEs in PSP samples, and while this was not a primary aim of our study, our results indicate that a vast majority of PSP endorsed exposure to at least one ACE (79%), with the majority of those reporting multiple ACEs. These results point towards trends of disproportionate numbers of ACEs in PSP populations as can be seen in similar fields (e.g., military members; Afifi et al., 2016; Battaglia et al., 2019). Similarly and expectedly, rates of adverse mental health symptoms were also high in our sample, consistent with the body of work that identifies PSP as especially vulnerable to trauma and the cascade of psychosocial sequalae associated with childhood adversity

(Asmundson & Stapleton, 2008; Berger et al., 2012; Carleton et al., 2019; Faust & Ven, 2014; Haugen et al., 2012).

Less established in the literature are the mechanisms through which ACEs affect adverse mental health outcomes in adulthood. Our study was the first to identify MI as a mediating factor; individuals in our sample who experienced higher levels of adversity in childhood were more likely to endorse symptoms of MI, and in turn more likely to report adverse mental health symptoms in adulthood. This is consistent with the only other study that has explored the association between ACEs and MI to date, which found that childhood emotional abuse was predictive of MI symptoms in adulthood in a small sample of treatment-seeking Canadian Armed Force members and veterans (Battaglia et al., 2019). These findings, in combination with our own, provide preliminary evidence that exposure to higher ACEs is predictive of higher MI symptoms following moral transgressions later in life.

There are a number of reasons that may account for this finding. Exposure to ACEs has a host of known adverse outcomes that may predispose individuals to MI, including biological, emotional, cognitive, and behavioural difficulties (Cook et al., 2005). Individuals who experience adversity early in life may internalize feelings of fear, shame, and guilt, developing maladaptive self-, other-, and world-schemas (e.g., 'others can't be trusted', or 'I am bad and unworthy'; Battaglia et al., 2019; Briere, 1992; Cook et al., 2005). This may be particularly true for individuals experiencing complex trauma and/or attachment-related abuse, where feelings of betrayal and internalized shame may become pervasive in childhood. These and similar schemas may be reactivated following the

perpetration of moral transgressions or moral betrayals later in life (Litz et al., 2009a; Yeterian et al., 2019), thereby increasing risk for developing symptoms of MI. Though causal linkages could not formally be tested in the current study given the cross-sectional design, ACEs necessarily pre-dated MI symptoms and as such, may contribute to the vulnerability to develop MI. Replication studies with longitudinal designs and larger, diverse samples would be needed to explore this association further.

To further delineate this path, we also examined the role of ER difficulties. Several studies have demonstrated an association between ACEs and ER difficulties, including the detrimental impact of ACEs on the ability to understand internal emotional experiences and to regulate one's inward and outward affective expression (Cook et al., 2005). Children with abusive or neglectful parents (who may be emotionally dysregulated themselves) are less likely to learn how to regulate their emotions effectively (Alink et al., 2009; Beeghly & Cicchetti, 1994; Cook et al., 2005; Linehan, 1993). As suggested, this may be particularly important for children experiencing complex trauma and abuse where attachment bonds have been disrupted in such a way that prevents the development of experiencing and exploring complex emotions in a safe environment. In turn, impaired ER skills have been implicated in several negative mental health outcomes including PTSD, depression, and anxiety (Barlow et al., 2017; Cloitre et al., 2019; Fergusson et al., 1996; Nickerson et al., 2015; Putnam, 2003; Zlotnick et al., 1995).

Our results add to this body of literature, suggesting that ER difficulties are also implicated in MI symptom development. Here, our results demonstrate that while increased exposure to ACEs was linked to increased MI and adverse adult mental health

symptoms, this was particularly true for individuals reporting greater difficulties with ER. In line with our discussions thus far, children experiencing single or multiple instances of abuse, particularly from caregivers and in other contexts of trust, are perhaps more likely to experience difficulties regulating morally-relevant emotions (e.g., shame, anger, feelings of betrayal), when activated in adulthood, thus increasing risk for MI symptom development and highlighting the increased risk for lasting adverse psychiatric outcomes when the development of ER skills is disrupted.

Lastly, our findings further demonstrated the role that ACEs, MI, and ER difficulties have in predicting other adverse mental health symptoms and are consistent with the emerging body of literature linking MI to adverse psychiatric sequalae, most notably PTSD (Currier et al., 2015; Nazarov et al., 2015, 2018; Watkins et al., 2016; Williamson et al., 2018). Though distinct, MI and PTSD share many features (Litz et al., 2009a; Shay, 2014). Symptoms often begin to develop following one (or repeated) adverse events, evoking significant negative emotions and resulting in negative altered cognitions regarding one's value, safety, and trustworthiness of oneself, others, and the world (Jinkerson, 2016; Litz et al., 2009b; Yeterian et al., 2019). While PTSD and other psychiatric disorders often have other primary symptoms (e.g., fear and avoidance in PTSD; sadness and anhedonia in depression), researchers and clinicians alike have begun to acknowledge the morally affective components that these pathologies share with MI, for example feelings of guilt, shame, and worthlessness (Battaglia et al., 2019; Farnsworth et al., 2014; Litz et al., 2009). As such, it is plausible that a pre-existing MI and poor ER abilities may predispose an individual to develop symptoms consistent with

PTSD and other mental health outcomes following traumatic events, particularly when such exposure is chronic as is often the case for PSP. Our results supported these hypotheses, demonstrating that MI may stand as a unique precursor to adult psychopathology, particularly for individuals already at an increased vulnerability given the presence of other risk factors (e.g., ACEs, ER difficulties).

4.5.1 Strengths and Limitations

Our study is the first to empirically explore MI as a formal construct in PSP populations, establishing MI as a distinct occupational stressor with severe mental health consequences. Here, we used the first assessment of MI developed specifically for use with PSP in order to capture the impact of moral transgressions most relevant to this population (Roth et al., in press). The model proposed in the current study is the first to identify MI as a predictor of other adverse adult mental health outcomes while accounting for the variance contributed by other risk factors including ACEs and ER difficulties. This model has not been tested in other populations and as such, our results lay the groundwork for further testing of these associations across other vulnerable groups.

The results of this study must be understood in light of several limitations. First, various factors may limit the generalizability of our results, primarily recruitment via self-selection and a resulting largely homogenous sample with regards to race, ethnicity, and SES. It would be important to replicate these findings in other settings, particularly given the complex interplay between ACEs, mental health, and psychosocial factors such as SES and educational attainment (Jones et al., 2018). In contrast, the results presented here fail to capture aspects of heterogeneity within the PSP population; most notably, results

are collapsed across geographic location (i.e., Canada and the USA) and discipline (e.g., police, firefighters, medics, etc.). While it is not uncommon practice within this emerging field of research to group PSP disciplines together, results must be interpreted with this in mind as it is reasonable to expected that there are, indeed, important differences between the morally relevant aspects of work across disciplines and across geographic locations, particularly in light of recent socio-political divides in North America (and beyond), including the Covid-19 Pandemic and the Black Lives Matter movement. Importantly, the tool selected to measure symptoms of MI was developed for use specifically with PSP across disciplines and queries MI symptoms in ways specific enough to capture the nuanced moral conflicts unique to PSP work while remaining broad enough that items could be applicable and relevant to PSP across disciplines.

Further, although our selection of measurement tools was careful and deliberate, the self-report nature of the measures used may be partially responsible for the relation found between study variables and may be vulnerable to biases such as socially desirable or random responding. In particular, the tool used to measure ACEs (ACE-Q) has received valid criticism concerning facets such as its item coverage (e.g., failing to capture important ACEs like peer victimization), item construction (e.g., multi-barreled questions with limited response options), and item scoring (e.g., equal weight given to each endorsed item; McLennan et al., 2020). While the ACE-Q remains one of the most widely used ACE measures, these criticisms are not unique to this tool and reflect inherent limitations of using existing self-report measures to capture childhood adversity. As discussed below, future studies should seek to replicate these results using either more

sophisticated screening tools or clinician-administered assessments in order to account for the nuanced manifestations and consequences of ACEs. Notably, and across measures selected for the study, we attempted to buffer the impact of these limitations by recruiting a large community sample with a wide range of symptom severity to increase generalizability, implementing validity checks throughout our assessment battery, using a composite outcome variable to capture multiple aspects of adult mental health symptoms, and selecting widely used and/or validated measures to assess our variables of interest.

4.5.2 Clinical Implications and Future Direction

The findings reported here have important research and clinical implications. Perhaps most salient is the need to account for the impact of childhood trauma in treatment-seeking adults. Given the far-reaching consequences of ACEs on adult mental health, healthcare providers should consider implementing ACE screening measures in order to avoid overlooking these important indicators of risk.

In light of our findings positioning MI as a unique mechanism perpetuating childhood risk and adult psychopathology, future research should continue to elucidate the specific risk factors associated with MI that can be used to tailor psychological interventions to preventatively address them. For example, preventative interventions could better promote effective ER strategies to mitigate the likelihood of developing MI following moral transgressions. This could prove to be particularly useful for vulnerable treatment seeking groups, such as those endorsing high ACE exposure, in order to arm individuals with the skills to cope with symptoms like guilt and shame and reduce the risk of developing other psychiatric symptoms in adulthood.

Future research should also continue to develop appropriate assessment and intervention strategies to measure and treat MI in vulnerable populations. In particular, assessment tools should be developed with the aim of being sensitive to population-specific moral transgressions while simultaneously remaining able to assess for a symptom profile established in cross-population research (Roth et al., 2021). The use of such tools in PSP and other vulnerable groups will allow researchers and clinicians alike to identify the symptoms most relevant to the individual respondent and target treatment efforts to address these concerns. Notably, and in line with the results presented here, such work could have important implications not only for the treatment of MI, but in preventing the development of other mental health symptoms following trauma exposure. Given the chronic exposure to moral transgressions and other traumatic events for PSP, this is a crucial area for future work.

Importantly, future studies should also aim to delineate the kinds of traumatic events experienced in adulthood that are most impacted by the increased risk associated with ACEs, MI, and ER difficulties. For example, future work should explore how exposure to work-related traumas, traumas similar to the adversity experienced in childhood (e.g., interpersonally or attachment-related trauma), and/or any other kind of traumatic experience in adulthood is equally or differentially impacted by variability in ACE exposure, MI symptoms, and ER difficulties.

Similarly, future studies should explore the replicability of these findings in non-PSP (i.e., civilian) samples or in other populations where work-related moral injury make be likely (e.g., military, healthcare providers, etc.) in order to further elucidate the

contribution of work-related moral suffering. It will be important for the growing body of work in this area to continue to incorporate existing theoretical models (e.g., the ecological model), that account for aspects of risk and functioning beyond the individual and their occupational setting, including within family, neighborhood, and cultural systems (Bronfenbrenner, 1977; Katz et al., 2021).

Finally, research must continue to explore the various mechanisms underlying the associations between ACEs and MI, and MI and other adult mental health outcomes, including the unique impacts of difference types of ACEs, the role of complex trauma and attachment styles on the development of ER skills and MI symptoms, and subsequent risk of adverse mental health outcomes. This also includes the need to further elucidate the causal path between ACEs, ER skills, MI, and adult mental health via longitudinal designs and to prioritize identification of protective factors that may buffer these effects.

4.6. Conclusions

The deleterious impacts of adverse childhood experiences are pervasive and can extend well into adulthood. While there has been considerable research examining the impact of ACEs on adult mental health, much less work has examined the mechanisms through which these effects occur. The current study contributes uniquely to a body of emerging literature by demonstrating that for PSP, symptoms of MI play an important role in explaining the psychosocial consequences of childhood adversity on the development of adverse mental health outcomes in adulthood. Understanding the mechanisms underlying these pathways is essential to inform future clinical practice

aimed at reducing the consequences of ACEs and the risk of psychopathology in PSP

groups and other populations vulnerable to trauma.

References | Study Three

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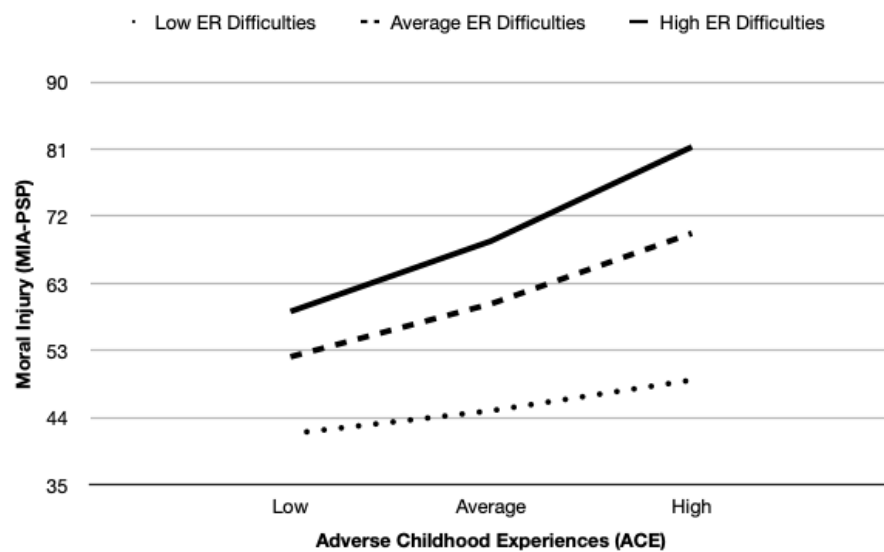
Figures | Study Three

Figure 1.

Figure 1. Moderating effect of emotion regulation (ER) on the relation between adverse childhood experiences and moral injury symptoms in adulthood. Public Safety Personnel with fewer ER difficulties were more protected against the deleterious impact of childhood adversity on moral injury symptoms than those with higher levels of ER difficulties.

Figure 2.
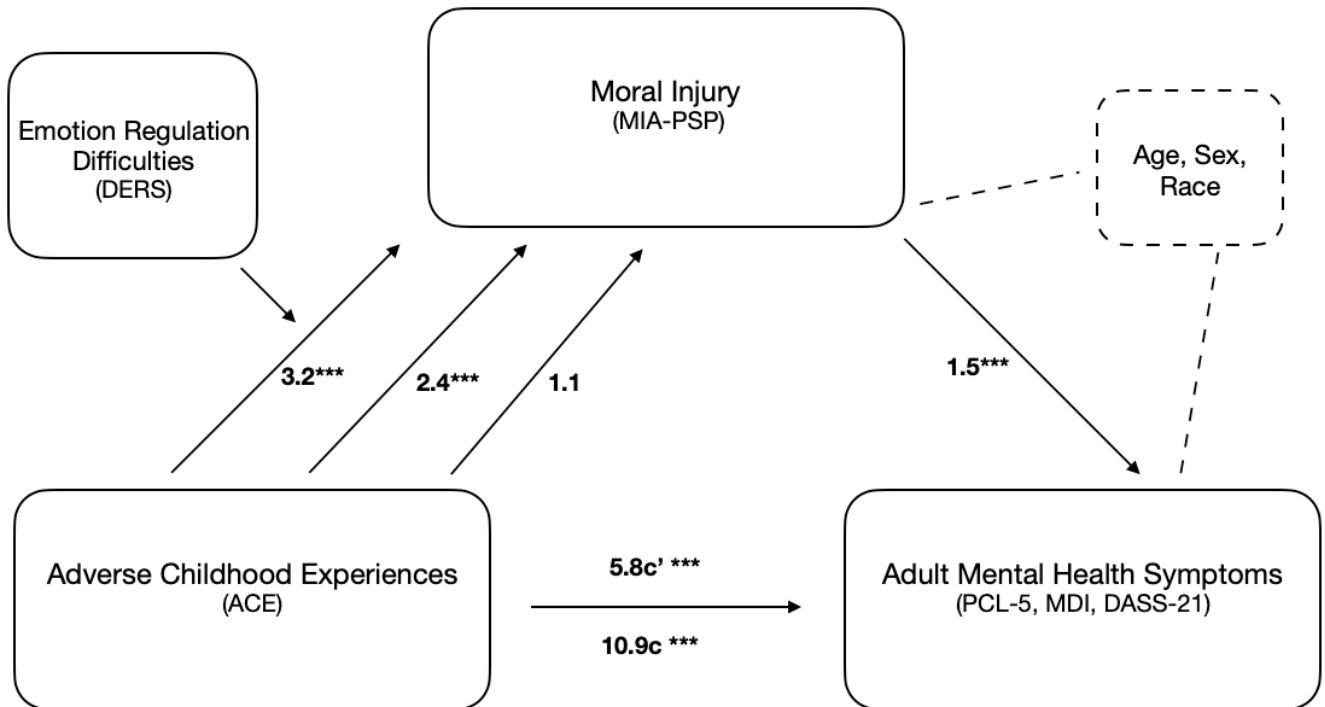
Figure 2. Moderated mediation model examining the association between adverse childhood experiences (ACE) and adult mental health symptoms (PCL-5, MDI, DASS-21) mediated by moral injury symptoms (MIA-PSP) and moderated by emotion regulation difficulties. Unstandardized mediation model path coefficients are presented. ***p < .001.

Tables | Study Three

Table 1. Descriptive Statistics.

Measures		Min	Max	Mean	Standard Deviation
Adverse Childhood Experiences *(ACE-Q)*		0	10	3.67	3.07
Moral Injury Symptoms *(MIA-PSP)*		8	100	60.20	21.93
Mental Health Symptoms	Total Score	0	270	119.63	67.83
	PTSD Symptoms (*PCL-5*)	0	79	34.26	20.20
	Dissociation Symptoms (*MDI*)	29	139	69.91	32.41
	Depression, Anxiety, Stress Symptoms (*DASS-21*)	0	60	25.08	16.90
Difficulties with Emotion Regulation (*DERS*)		36	167	97.06	25.12

Table 2. Spearman Correlations Among Study Variables.

Main Study Variables	1	2	3	4	5	6	7	8	9
1. Adverse Childhood Experiences									
2. Moral Injury Symptoms	.49**								
3. Mental Health Symptoms	.53**	.66**							
4. PTSD Symptoms	.45**	.64**	.81**						
5. Dissociation Symptoms	.53**	.69**	.94**	.75**					
6. Depression, Stress, Anxiety Symptoms	.48**	.68**	.91**	.83**	.82**				
7. Difficulties with Emotion Regulation	.35**	.57**	.66**	.71**	.68**	.76**			
8. Age	-.20**	-.24**	-.31**	-.19*	-.47**	-.30**	-.28**		
9. Sex	-.01	.12	.06	.07	.14	.09	.08	-.04	
10. Race	.02	.06	.09	.16	.03	.12	-.00	-.04	-.02

* ρ<.05. ** ρ<.01.

Table 3. Regression Coefficients of the Moderation Model, Total Effect Model (*c* Path) and Moderated Mediation Model (Paths *a*, *b*, and *c'*).

	b	*se (hc3)*	t	*p*
Moderation Model				
(Outcome: Moral Injury Symptoms)				
Constant	50.47	6.33	7.94	<.001
ACEs (centered)	2.23	.38	5.82	<.001
ER Difficulties (centered)	.46	.05	8.51	<.001
ACEs x ER Difficulties	.04	.02	2.25	.02
Moderated Mediation Model				
(Outcome: Mental Health Symptoms)				
a Path	2.22	.38	5.82	<.001
Low ER Difficulties	1.13	.67	1.67	.10
Average ER Difficulties	2.41	.38	6.40	<.001
High ER Difficulties	3.21	.52	6.20	<.001
b Path	1.50	.20	7.46	<.001
c' Path	5.76	1.17	4.90	<.001
c Path	10.85	1.10	9.86	<.001

Table 4. Conditional Indirect Effects of X on Y.

Level of Moderator	*b*	BC CI	% Variance Accounted For
Low	ns	ns	
Average	3.63	2.43, 4.91	49.53
High	4.78	3.11, 6.52	

Chapter 5 | General Discussion

5.1 Summary of Dissertation Research

Moral injury is emerging as a relevant psychological construct with important implications for the health and well-being of individuals exposed to moral trauma. As with all conditions of the human mind, MI is complex and, at times, difficult to tease apart from other adverse psychiatric consequences following trauma exposure. However, the growing body of MI research including the studies presented here stands as strong evidence of the distinctiveness of the MI symptom profile and the nuanced causes and consequences across populations.

Collectively, these three studies highlight the need to consider MI beyond the military context and outline three phases of instrument development necessary for measuring psychological constructs in new populations. This dissertation demonstrates: 1) the importance of a formative qualitative inquiry to establish the relevance of a new construct in a new population, to explore the nuanced manifestation of the construct in a new setting, and to guide item generation for future phases of instrument development; 2) key steps to construction and preliminary evaluation of such a tool (the MIA-PSP); and 3) the applicability of health scale instruments in modeling important relations between psychosocial predictors and outcomes of interest.

5.1.1 Study One

Study One, a qualitative investigation into the moral emotional experiences of justice-involved individuals found NCR, represents the formative and most often over-looked phase of instrument development (Carpenter, 2018). With this study we asked: if MI is

relevant to individuals found NCR, what kinds of factors might precipitate its onset, how might the symptoms manifest, and what could be the unique consequences of it? With this overarching question as our guide, we conducted in-depth interviews with forensic psychiatric patients and their care providers to query the emotional experiences of these individuals following commission of an offence.

Results from Study One resoundingly demonstrate the relevance of MI within forensic psychiatry; all individuals interviewed endorsed profound feelings of moral affect towards themselves (e.g., guilt, shame, etc.) and/or others (e.g., anger, betrayal) that are consistent with symptoms of a moral injury. Moreover, care providers contributed their detailed observations of the impact of moral suffering on an individual's progress through treatment and recovery and how other important factors (i.e., insight, nature of offence, and relation to victim) influence their emotional experiences. Interestingly, while the MI literature draws somewhat of a distinct line between perpetration MIs and betrayal MIs (Litz & Kerig, 2019), this distinction was not so clear for individuals found NCR. Participants described experiences ranging from deep sensations of regret and remorse resulting from their own behaviour to painful feelings of anger, betrayal, and the loss of trust in loved ones, the Justice System, and society at large resulting from the nature of their detainment. This finding further emphasizes the importance of a mixed-method approach to instrument development beginning with a qualitative inquiry when attempting to measure a new construct in an understudied population.

Though moral pain may be viewed generally as an expected, acceptable, or even encouraged reaction to criminal behaviour, the accounts presented here paint a more

complex picture. Individuals found NCR may be vulnerable to experiences of moral pain

that transcend the realm of functionally adaptive and instead, lead to maladaptive coping,

impaired psychological and social functioning and, ultimately, impeded recovery. As

discussed in greater detail in Section 5.2, Study One advances our understanding of moral

pain in justice-involved individuals and will serve to inform future efforts to measure and

characterize MI in forensic psychiatry.

5.1.2 Study Two

Following the initial phases of instrument development where the aim is to maximize

one's understanding of the construct of interest, subsequent phases must be completed to

develop candidate items and test their performance. Though Study Two pivoted from

forensic psychiatry to data collected from a sample of PSP, it aimed to demonstrate these

necessary steps of the next phase of the instrument development process.

In Study Two we piloted, refined, and tested the first MI scale for PSP (the MIA-PSP),

which involved item development and testing, factor analysis and other item reduction

techniques, and preliminary validity testing. Prior to the commencement of this

dissertation research, MI had not yet been considered as relevant to the PSP context; this

is surprising given the increased exposure to morally challenging situations that many

PSP must endure and accept as regularly occurring occupational conditions (Lentz et al.,

2021).

As hypothesized, results from Study Two suggest that symptoms of MI are a common

experience for PSP. The phenomenology-based perpetration and betrayal domains of MI

established in the military literature were replicated here with PSP, suggesting that MI

may result from one's own actions/inactions (e.g., failure to save a life) or from the actions of others (e.g., inadequate institutional training or support). To extend beyond the replication of existing work in MI instrumentation – which has been criticized for taking an exclusively phenomenological perspective (Litz & Kerig, 2019) – the results presented here include aspects of a syndromal approach to measurement; that is, items were developed and retained that queried the *experience* of a moral wound rather than solely the exposure to a morally violating perpetration or betrayal event. As with other stress disorders (e.g., PTSD) where exposure to trauma is a necessary but insufficient indicator, so too should MI be measured as described herein: via a combined phenomenological and syndromal approach that queries both exposure to a morally challenging event and the resulting symptoms. Of course, to do so, researchers in the field must first reach a consensus on a unifying definition and symptom profile of MI; suggestions towards this and other areas of future work will be discussed in Section 5.2.

5.1.3 Study Three

   The third study included within this body of work exemplifies a final phase of instrument development research: the implementation of the novel instrument to answer important characterizing questions about the population of interest. Here, the MIA-PSP was used to examine the relations between MI symptoms and hypothesized predictors and outcomes of interest in a sample of North American PSP. Specifically, Study Three presents data from a quantitative path analysis modelling the relation between exposure to adverse childhood experiences (ACEs), emotion regulation skills, work-related MI symptoms, and other negative mental health symptoms.

Existing work in the area has firmly established the link between ACEs and adult mental health (Barlow et al., 2017); likewise, the growing body of MI research has similarly associated it with other negative mental health outcomes (Griffin et al., 2019). However, this is the first published work to present a unified analysis modelling the relations between ACEs, MI, and adult mental health and, further, to account for the effects of protective factors like emotion regulation skills.

These results illustrate the possible avenues of exploration that become available for psychological constructs with well-developed measurement tools. Perhaps most relevant to the mental health of PSP and other clinical populations of interest, path analyses using valid instruments can help identify psychological and social risk factors, characterize targets for prevention efforts, and evaluate treatment efficacy. These and other additional considerations are discussed in more detail below.

5.2 Implications and Future Directions

The central idea towards which this body of work has been building is this: the ability to accurately identify and measure a psychological construct is an absolute prerequisite to any subsequent efforts to predict, prevent, treat, or understand it. One could not expect to examine the biological antecedents of depression, explore the social implications of anxiety, or evaluate the treatment options for PTSD without first having some way to *assess* it. As such, the research presented here on measuring and characterizing MI in vulnerable populations has notable implications across individual, familial, institutional, and societal domains.

Study One establishes MI as a relevant construct in forensic psychiatry with the potential to impact the psychological and social well-being of justice-involved individuals and, ultimately, their process of recovery. To actualize this potential, future research should use the data presented here to justify and inform continued efforts to develop instruments to measure MI in NCR populations. With the development of a valid and reliable tool to measure MI in forensic psychiatry, researchers will be able to explore these and other important areas of inquiry, for example, to identify those most likely to develop MI, how and when MI should be prevented or treated within the context of the Justice System, and what, if any, consequences MI could hold for an individual's recovery, rehabilitation, and/or future risk of recidivism.

Via the development and application of the first instrument to measure MI in PSP, Studies Two and Three demonstrate both theoretical and practical advantages of combining phenomenological and syndromal approaches to instrument development. Identifying a global symptom profile will increase generalizability of MI research while phenomenological considerations will ensure MI instruments remain sensitive to unique population stressors. Additionally, measurement tools that emphasize symptom features and/or functional impairments will be most useful in clinical practice to better bolster MI treatment and prevention efforts.

These considerations will be particularly important as the study of MI expands to new populations. For example, with the onset of the COVID-19 Pandemic, researchers in the field have turned their attention to the morally injurious experiences of healthcare workers (e.g., nurses, physicians, respiratory technicians, etc.) who have had to endure

unprecedented working conditions, innumerous and unjust patient deaths, and insufficient support, protection, respect, or recognition from managerial bodies (Riedel et al., 2022).

Other underserved and understudied groups whose experiences should be prioritized are members of minority communities. For example, queer and racialized individuals are likely to be among those at high risk for exposure to morally injurious experiences (Nicholson et al., 2021). Members of these groups face chronic oppression and discrimination, abandonment and ostracization, and are both subtly and forcefully exposed to doctrine suggesting that their very identities are abhorrent and immoral (Becerra-Culqui et al., 2018; Coker et al., 2010). Future work should aim to establish MI in these populations to begin the process of understanding, treating, and preventing morally injurious wounds in these communities.

Finally, as with any new psychological construct, researchers should continue to uncover the unique antecedents, manifestations, and consequences of MI across populations. Though a well-designed approach to instrument development contains a multitude of steps, collectively these steps represent only the beginning phases of coming to truly know a novel construct. As such, continued efforts will be required to advance our understanding to a point of consistent, predictable, and generalizable clinical utility.

5.3 Final Conclusions

Moral injury is a new but increasingly relevant psychological construct with profound psychosocial implications across populations where exposure to morally challenging situations is high. Before researchers in the field can uncover targets for the prevention and treatment of MI, there must first be a valid and reliable way to define and assess it.

The studies presented within this dissertation collectively represent a methodologically robust approach to the measurement and characterization of MI in two high-risk populations. The results from this body of work emphasize the importance of a mixed-method approach to instrument development and illustrate the potential applicability of such a tool for advancing our understanding of new psychological constructs and, ultimately, improving the prevention, assessment, and treatment of mental health concerns.

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