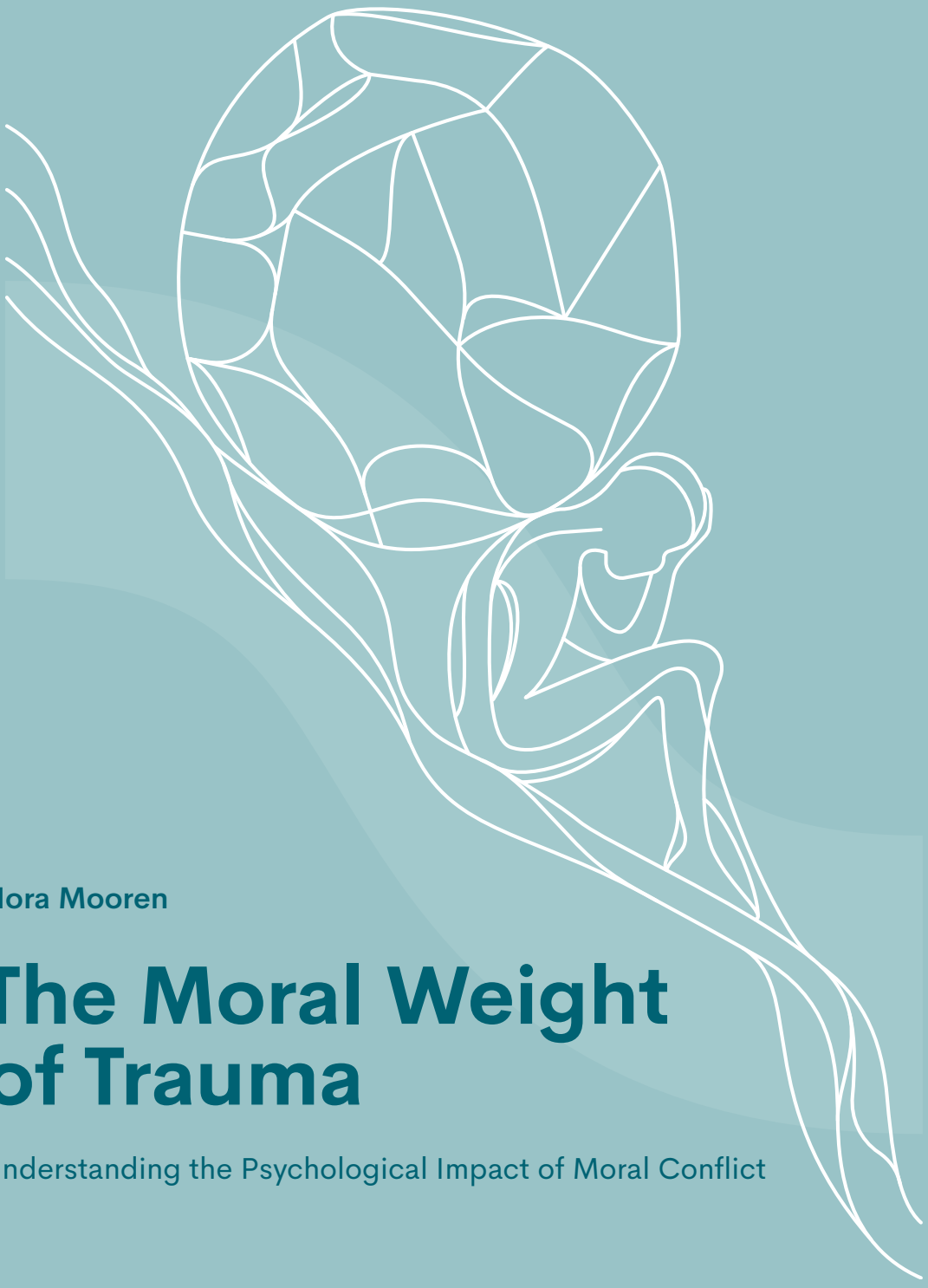

Nora Mooren

The Moral Weight of Trauma

Understanding the Psychological Impact of Moral Conflict

ARQ
Nationaal
Psychotrauma
Centrum

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The Moral Weight of Trauma

Understanding the Psychological Impact of Moral Conflict

Het Morele Gewicht van Trauma

Het Begrijpen van de Psychologische Impact van Moreel Conflict

met een samenvatting in het Nederlands

Proefschrift

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PREFACE

Moral values give us a sense of direction and guide our choices and actions. Through moral values we make sense of what is right and wrong or what feels just and unjust. Yet, there are moments when individuals violate their own moral standards or witness the moral failings of others. What once seemed clear and certain may become clouded by doubt or despair. Moral wrongdoing has the power to unsettle our sense of self and meaning and can leave lasting marks.

At ARQ National Psychotrauma Centre, we have a long-standing commitment to supporting the mental health of trauma-affected populations. Our history reflects a deep moral responsibility and strong moral values: to recognize and acknowledge human suffering, to stand in solidarity with those who have been harmed, and to offer compassionate treatment to those whose lives have been profoundly disrupted. In this sense, the centre embodies a moral responsibility that extends beyond clinical practice; it reflects a commitment to uphold human dignity in the face of trauma and moral adversity.

For the past years, Nora Mooren has worked both as a researcher and a clinician at ARQ National Psychotrauma Centre. Through her clinical work, she encountered the personal stories of individuals struggling with moral conflict in traumatic events and observed the psychological consequences that followed. These experiences inspired her to investigate moral transgressions in greater depth, to understand the concept of moral injury, and its impact on mental health.

In her dissertation, Nora Mooren examined the psychological impact of moral transgressions in three distinct groups: refugees, police officers, and emerging adults. Each of these populations faces unique moral challenges that can evoke profound moral distress. By examining these experiences across diverse populations and shedding light on the underlying emotional and cognitive mechanisms, this work advances our understanding of how trauma and moral conflict unfold and interact.

I hope this work not only engages you as a reader but also encourages further dialogue on the role of moral conflicts in our lives, deepens our understanding of the trauma-related mental health challenges, and inspires action to support healing and resilience in the aftermath of moral struggles. In the end, our moral values are not defined by the absence of struggle but by how we respond to it. Through reflection, dialogue, and compassion, we can begin to transform moral suffering into a deeper awareness and a renewed commitment to living with integrity and care.

Melina Kappeyne van de Coppello-Rakic

Psychiatrist
Chair of the Board of Directors

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1 Tutu, D., Abrams, D. C., & Tutu, M. A. (2014). *The book of forgiving: the fourfold path for healing ourselves and our world.* First edition. HarperOne.

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CHAPTER 1

Introduction

INTRODUCTION

This introduction starts with outlining the concepts of moral values and moral distress. We then examine various definitions of moral transgressions as presented in research literature over time. Following this, we explore different populations exposed to moral transgressions and the associated impact on mental health. The focus then shifts to three central themes that are particularly relevant to this dissertation: the role of moral emotions, negative cognitions, and autobiographical memory. Finally, we highlight several unresolved issues in moral injury research and present the primary aims that arise from these gaps.

The violation of moral values

For decades, people have asked themselves what is morally right or wrong. This enduring inquiry is rooted in the human desire to perceive oneself as a good person and act according to ethical principles and societal norms. Across cultures and contexts, moral values often share common themes rooted in moral foundations (Haidt & Joseph, 2004), such as honesty, loyalty, and equality. For most of us, believing that we are a good person who acts morally right is intrinsically satisfying (Stanley & De Brigard, 2019) and positively affects our well-being (Prentice et al., 2019). However, life sometimes presents complex situations in which we are compelled to make difficult choices that may conflict with our moral values and beliefs. For example, would you tell a friend that his girlfriend is cheating, knowing this might deeply hurt him? Would you attempt to save a drowning person despite being a poor swimmer and risking your own life? Or would you obey orders from a superior out of loyalty, even if it meant endangering the lives of innocent people? The internal struggle between personal moral values, such as loyalty and honesty, on the one hand, and the violation of these values on the other hand, can result in a moral conflict. This can cause significant psychological and emotional dissonance, also described as *moral distress*.

Individuals can suffer from their own moral failings or wrongdoing (*self-directed moral transgressions*), the moral transgressions of others (*other-directed moral transgressions*), or from a combination of both (Hoffman et al., 2018; Litz et al., 2025). Furthermore, moral transgressions can be distinguished in *omissions* (failing to act or failing to prevent harm to oneself or others) and *commissions* (acting morally wrong). Regardless of the type of moral transgression, the experience of a moral conflict can lead to a range of emotional and behavioural responses, including guilt, shame, anger, self-harming behaviour, and loss of trust (Litz et al., 2009). When these responses are long-lasting and lead to strong impairments in psychological well-being, moral distress can ultimately result in *moral injury*.

Defining potentially morally injurious events and moral injury

Jonathan Shay (1991, 1994) studied the psychological, social, and cultural consequences of moral transgressions by Vietnam War veterans, and he was the first to describe the construct of moral injury. He defined a (potentially) morally injurious event as a transgression against accepted moral standards (e.g., killing of unarmed civilians) by a legitimate authority figure (e.g., a military leader) in a situation where a lot is at stake (e.g., war). Later, Nash and his colleagues (2013) introduced the term *betrayal-based events* that explicitly involved the betrayal by leaders, fellow service members, or non-military people.

Citation

I've come to strongly believe through my work with Vietnam veterans (…) that moral injury is an essential part of any combat trauma that leads to lifelong psychological injury. Veterans can usually recover from horror, fear, and grief once they return to civilian life, so long as 'what's right' has not also been violated. (Shay, 1994, p. 20)

Over the years, other definitions of morally injurious events and moral injury have been proposed that more clearly separate the event (that involves a moral transgression) from possible outcomes (e.g., moral distress or moral injury). For example, Litz and colleagues (2009) defined morally injurious events as events in which a person "*perpetrates, fails to prevent, bears witness to, or learns about acts that transgress deeply held moral beliefs, and expectations*" (p. 700) and moral injury as "*the psychological, biological, social and behavioral consequences*" (p. 697) of these events. In these definitions, the norms are not necessarily violated by an authority, but also by oneself, which is an important change in how moral transgressions are observed since then. Farnsworth and colleagues (2017) refined the definition of Litz and colleagues by suggesting that events can only be potentially morally injurious if they occur "*in a high-stake environment*" (p. 392) and moral injury can be defined as "*social, psychological, and spiritual suffering stemming from costly or unworkable attempts to manage, control, or cope with the experience of moral pain*" (p. 393). Other definitions of moral injury refer to moral injury as a set of symptoms (e.g., shame, guilt, loss of trust) (Jinkerson, 2016) or as a "*loss of trust in previously deeply held beliefs about one's own or others' ability to keep our shared moral covenant*" (Nash & Litz, 2013, p. 368). Despite the diversity of definitions, they all emphasize the inner conflict between a transgressive act and internal moral beliefs. In the register (on page 194), an overview is provided of the most important terminology used in this thesis.

Theoretical models

There are several models that elaborate on the concept of moral distress and moral injury. For this thesis, two models by Litz and colleagues (2009, 2019) were considered in particular. In the first model (*see Figure 1*), the dissonance between the moral transgression and deeply held personal moral beliefs about oneself or others is central. This model was based on cognitive models of posttraumatic stress disorder (PTSD) that describe psychological distress as a result of a dissonance between the traumatic event and existing beliefs about oneself and the world (McCann & Pearlman, 2015; Wilson et al., 2013). As in models of PTSD (Ehlers & Clark, 2000), the model by Litz and colleagues (2009) postulates that conflicts between pre-existing beliefs about oneself, others, and the world, and moral transgressions result in negative cognitive appraisals. This can eventually result in negative emotions that go beyond fear and avoidance. Like PTSD models, this model also proposes that avoiding negative emotional memories of moral transgressions results in chronic intrusive memories of these transgressions. In addition, it describes other moral injury-related outcomes such as problems with self-forgiveness and self-harming behaviour.

A second model (*see Figure 2*) represents the notion that moral transgressions do not automatically result in moral injury or moral injury-related responses, as this is merely dependent on the severity and intensity of the moral transgressions. As such, morally relevant life experiences can encompass a broad spectrum of events. Broadly, there

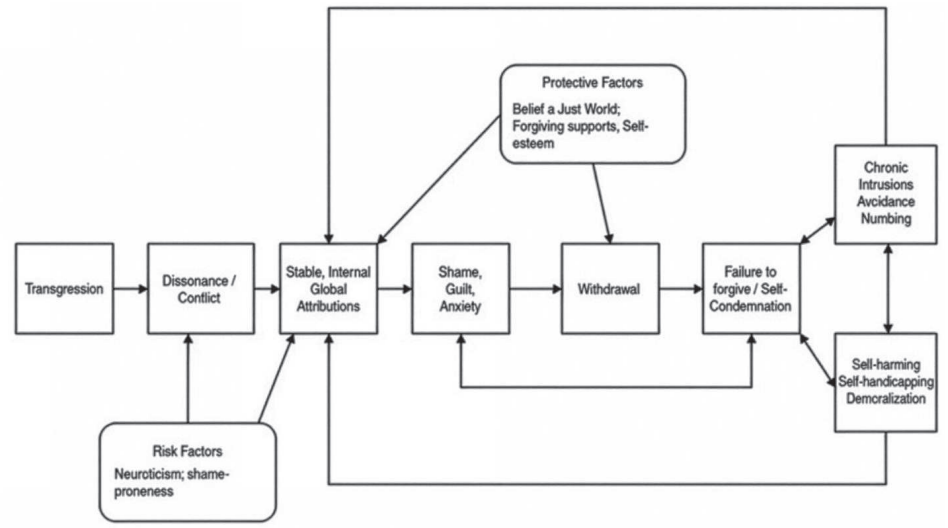

Figure 1. Causal framework of moral injury (Litz et al., 2009)

are three types of events. The first are defined as *moral challenges* that often occur but have a low immediate relevance for the individual. Moral challenges can lead to *moral frustration*, with relatively low impact on psychological, social, and spiritual impairment. An example provided by Litz and his colleagues (2019) is moral worries about climate change. Moral stressors, in this thesis referred to as *morally distressing events*, have a more personal impact as they are directly related to the person and lead to *moral distress*. Examples are cheating, infidelity, and lying or withholding information. Ultimately, there are *morally injurious events* that involve significant threats to personal integrity and could potentially lead to *moral injury*. Although these events involve major psychological impairment, they occur infrequently. Examples are killing during combat and committing or witnessing acts of torture.

Overall, exposure to moral transgressions, regardless of their impact or frequency, does not invariably lead to problematic outcomes. Individuals may process and respond to these experiences in different ways. Like exposure to traumatic events that can result in posttraumatic stress, it is important to separate the *event* from potential *psychological outcomes* such as moral distress or moral injury. While some individuals may struggle with long-lasting distress, others may find ways to integrate these experiences without psychological suffering.

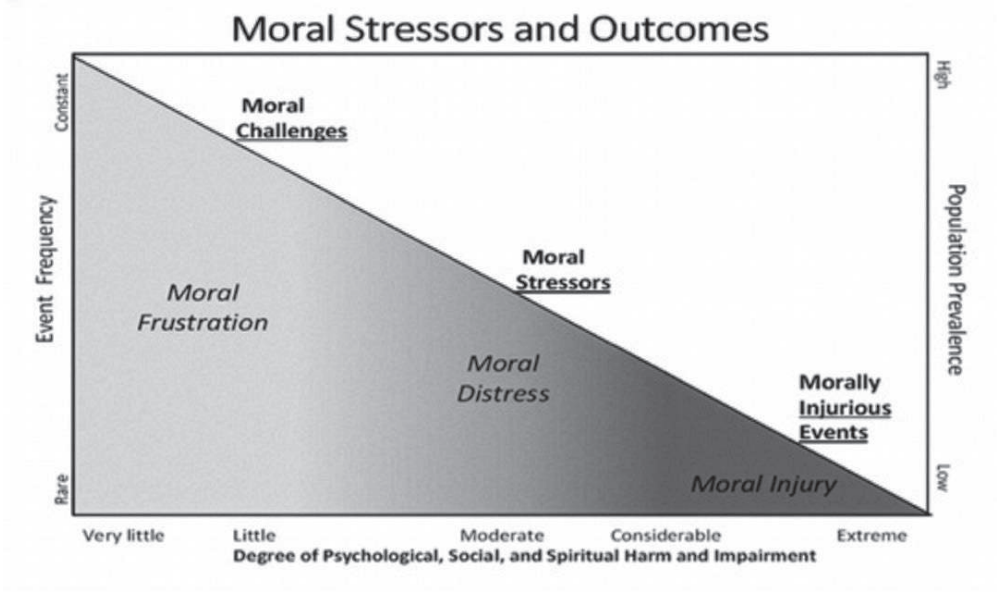

Figure 2. Visual presentation of morally relevant life experiences and corresponding responses (Litz & Kerig, 2019)

Exposure to moral transgressions across populations

A growing body of research has examined the impact of exposure to moral transgressions on mental health across different populations. Most studies focused on occupational populations such as military, firefighters, police, paramedics, and emergency workers, collectively referred to as *public safety personnel*. What these populations have in common is their responsibility for life-and-death decisions that often involve moral dilemmas, as this is part of their duty (Chopko et al., 2015; Papazoglou et al., 2020; Papazoglou & Chopko, 2017; Regehr et al., 2003). Examples are deciding whether to intervene in dangerous situations at great personal risk or making split-second choices that may lead to unintended harm, such as in combat, emergency medical care, or law enforcement operations. So, these groups are more likely to be exposed to events that may violate deeply held moral beliefs, putting them at risk of experiencing moral transgressions. Another group that is frequently exposed to moral transgressions, either from their occupation or as civilians, is refugees (Nickerson et al., 2015). Similar to military people, refugees are often exposed to war and violence (Bogic et al., 2015) and face difficult decisions while seeking safety and protection. Studies have described commonly experienced events in refugees that often involve moral transgressions, such as abandoning loved ones (Brough et al., 2003), being forced to betray others (Silove, 1999), or witnessing murder (Silove et al., 2009).

Although the majority of research studies focused on public safety personnel, recent studies also demonstrated the presence of moral transgressions in *civilians* or the *general population* (Chaplo et al., 2019; Thomas et al., 2024). Examples described in the literature are sexual assault or rape (Miller, 2009), abortion (Bernstein & Manata, 2019), physical assault, and being responsible for road traffic accidents (Hoffman & Nickerson, 2021). Interestingly, a growing body of studies focuses on morally distressing experiences among emerging adults. This allows moral stress to be viewed and studied from a *developmental perspective* as well. The adolescent years are a formative period for developing moral and social understanding (Hart & Carlo, 2005), despite common assumptions that teenagers frequently push against moral standards. When adolescents experience events that contradict their emerging moral frameworks, it may interfere with the development of moral identity, potentially resulting in serious and enduring psychological harm (Kidwell & Kerig, 2021; Nash & Litz, 2013). Given that young people are still forming their understanding of morality, they may be particularly susceptible to the psychological consequences of moral transgressions. This underscores the relevance of further research on how moral transgressions affect vulnerable youth populations.

Case examples

Below are three case examples presented to illustrate how individuals from different populations can be exposed to moral transgressions. The first two cases are from emerging adults, based on the (anonymous) survey data of students from Utrecht University (*see Chapters 5 and 6*). The third case illustrates moral transgressions experienced by a police officer that is fictional and inspired by conversations with patients in clinical practice and the (anonymous) survey data of police officers (*see Chapter 4*). These cases provide a good illustration of the nature of moral transgressions (not moral injury per se) as well as the moral conflicts these individuals are dealing with.

Case 1 Moral transgressions experienced by a girl who was raped by a close friend

"When I was young, there was always a lot of trouble at home. One night, when I was 18 years old, my father kicked me out of the house. With nowhere else to go, I ended up at a friend's house, hoping for safety and support. But that same night, he raped me. I felt trapped, like I had no choice – either stay and endure the assault to have a place to sleep or leave and be alone on the streets in the middle of the night, in a city I barely knew. I had nobody to turn to.

Even now, I feel a deep sense of guilt and shame for not standing up for myself, for letting it happen. But at the same time, I feel a burning anger. He knew about my situation at home, how vulnerable I was, and yet he took advantage of me. He was supposed to be my friend, someone I could trust and rely on – but instead, he betrayed me when I needed help the most."

Case 2 **Moral conflict experienced by a young adult who faced suicidal attempts by his mother**

"Several times, my mom wanted to end her life. I found myself caught in a moral conflict about whether I should respect her decision or intervene and get help. On the one hand, I wanted her to be free from the immense pain and misery she was experiencing. On the other hand, it didn't feel right to let her go through with it. I believe it is important to allow people to make their own choices, but in this situation, I struggled with whether she was in the right state of mind to make such a final and thoughtful decision for herself.

If I called for help, I would act against her wishes, and that felt like a betrayal of my loyalty and love for her as my mother. But if I didn't intervene, I risked losing her forever – and the thought of living without a mother, knowing I could have done something, was unbearable."

Case 3 **Moral conflict experienced by a police officer**

"We received a notification about a young girl who had been stabbed in a park. We didn't have many details at the time about the exact location, but we rushed to the place immediately. When we arrived, I was immediately overcome with panic and uncertainty about what to do. I couldn't find the victim right away, but I did notice several boys running who matched the description of the perpetrators. Instinctively, I tried to chase after them, but I failed and returned to the scene. There I found the girl. I did my best to provide medical aid, but she was choking on her blood, and tragically, she died. It was an incredibly frightening and heart-wrenching moment – especially because she was the same age as my daughter. Afterwards, I couldn't shake the feeling that I had made the wrong decision. Maybe, if I hadn't gone after the boys, I could have done more to save her life."

The impact of moral transgressions on mental health

Although moral injury is not a mental disorder, exposure to moral transgressions is associated with impairments in mental health. In military people, numerous studies demonstrated the link between moral injury and PTSD (Currier et al., 2015; Davies et al., 2019; Nash et al., 2013; Nazarov et al., 2018). Across different occupational groups, exposure to moral transgressions is related to adverse health outcomes with higher levels of PTSD, depression, anxiety, suicidality, and substance use (Hall et al., 2021). In several studies, exposure to moral transgressions has also been linked to depressive symptoms, suicidality, and self-harming behaviour in military samples (Currier et al., 2015; Nash et al., 2013; Nazarov et al., 2018) and refugee samples (Silove et al., 1999; Steel et al., 2009). More specifically, increased exposure to moral transgressions by others was associated with higher levels of PTSD symptoms (Bryan et al., 2016). In refugees, other-directed moral transgressions were also associated with severe symptoms of PTSD and depression (Nickerson et al., 2018). In contrast, self-directed transgressions were associated with lower levels of intrusions (Hoffman et al., 2018). Other studies found that self-directed transgressions were associated with more reliving and reexperiencing symptoms (Litz et al., 2009; Nash et al., 2013) or found that increased exposure to both types was associated with more severe PTSD and depression symptoms (Currier et al., 2018). These findings imply a distinction between moral transgression types (self-directed or other-directed) in terms of clinical outcomes such as PTSD, but the findings are mixed, and more research is necessary to clarify these distinctions and their implications.

Overlap between PTSD and moral injury

In general, research has shown an overlap between PTSD and moral injury, leading to an ongoing debate about whether PTSD and moral injury are distinct constructs or not. Most overlap between the two constructs can be observed for the cognitive and affective domain of *cluster D* of PTSD as defined in DSM-5 and DSM-5-TR (*negative alterations in cognition and mood*; APA 2013, 2022; Koenig et al., 2020), that includes negative thoughts and ideas about oneself or the world, engaging in exaggerated blame of self or others, negative affect, and feeling isolated. However, there is no consensus on the definitions of moral distress and moral injury, and which “criteria” it should encompass. Some studies use person-centred statistical approaches (e.g., Latent Class Analysis and Latent Profile Analysis) to identify subgroups of individuals based on their common characteristics. In this approach, rather than focusing on individual variables across the whole sample (as in variable-centred methods), the goal is to uncover patterns within individuals by grouping them into distinct classes or profiles. These subgroups share similar response patterns across key variables, which allows researchers to explore heterogeneity in specific outcomes such as

posttraumatic stress or depression. For instance, one study of a military sample exposed to morally injurious events identified two groups of individuals, one being characterised by individuals reporting primarily fear-related PTSD responses and one group with individuals who showed non-fear-related responses such as guilt, shame, and anger (Bryan et al., 2018). In another study of police officers, four groups were identified, including a moral injury group, a group with both moral injury and PTSD, a group with only PTSD, and a group with neither moral injury nor PTSD (Mensink et al., 2022). Overall, the findings suggest that PTSD and moral injury are different constructs but can co-occur. This is not surprising since traumatic events, although most commonly defined as *fear-based* and *life-threatening*, may also involve a moral conflict. For example, physical violence is generally perceived as morally wrong and life-threatening, encompassing both a moral conflict and a threat to one's safety. Consequently, such an event can trigger both fear responses and moral-related distress.

In conclusion, research has shown that moral transgressions can occur across a range of contexts, cultures, and roles – from combat situations to civilian and professional environments – affecting individuals in diverse ways. First, although the scope of research has expanded beyond military populations, studies involving other groups, such as refugees, police officers, and members of the general population, remain limited. More attention to these groups is essential for understanding how moral transgressions manifest and affect individuals across broader cultural and occupational contexts. This knowledge is vital for developing context-sensitive interventions and prevention strategies. Second, individual differences in response to moral transgressions warrant deeper investigation. While some individuals experience both posttraumatic stress and moral distress following such events, others may develop only one or neither. Understanding these differences is crucial for tailoring clinical approaches to meet the specific needs of affected individuals, and using person-centred statistical approaches to identify subgroups of individuals might be helpful. Lastly, it is interesting that the experience of both self-directed and other-directed transgressions is acknowledged. However, knowledge about the psychological impact of *dual transgressions* (involving a combination of self- and other-directed transgressions) is still limited. This is particularly relevant because life events often involve such a combination. Examining these dual transgressions may provide greater insight into the burden of this type of exposure.

Moral emotions

Example 1 **Statement of anonymous respondent of student survey**

"In the second year of high school I bullied a boy after having been bullied for two years myself. In retrospect, I deeply regret this and look back on the actions of that time with disgust. I understand that I wouldn't do this anymore, but I still feel shame and guilt when I think about it – especially because I knew what it was like."

As the example above illustrates, being exposed to moral transgressions can result in all kinds of emotions and, in particular, *moral emotions*. Moral emotions are different from basic emotions because they motivate specific action tendencies towards helping others (Haidt, 2003). As such, moral emotions are often distinguished into *other-focused* moral emotions (emotions that are felt when others are facing moral wrongdoing) and *self-conscious* moral emotions (emotions that are felt in response to one's own behaviour) (Haidt, 2003; Tangney et al., 2007; Teper et al., 2015). Especially, self-conscious moral emotions are associated with self-reflection and self-evaluation in terms of one's responsibility in the situation (Tangney, 2007; Teper et al., 2015; Tracy & Robins, 2006). The intensity of the emotional response is determined by the degree of conflict between one's actions and moral standards, with greater conflict leading to stronger emotions (Tracy & Robins, 2006).

Overall, moral emotions that seem to be most relevant to moral distress and moral injury are *anger*, *shame*, and *guilt* (Jinkerson, 2016; Litz et al., 2009). Although guilt and shame are often used interchangeably, research confirms that these are distinct constructs (Farnsworth et al., 2014; Wilson et al., 2006). Guilt is a response that emerges when one violates a moral or ethical standard through specific actions, whereas shame arises from the belief that one's moral transgression reflects a fundamental flaw in the self. Some studies explicitly differentiated self-directed and other-directed moral transgressions in terms of emotional processes. It is generally stated that self-directed transgressions are related to *internalizing* emotions such as shame and guilt, whereas other-directed transgressions are associated with *externalizing* symptoms such as anger, frustration, outrage, and resentment (Bryan et al., 2016; Litz et al., 2018; Litz & Kerig, 2019; Schorr et al., 2018; Stein et al., 2012). In military populations, only self-directed transgressions were associated with higher levels of guilt, and guilt was also found to be a mediator in the relationship between self-transgressions and PTSD severity (Frankfurt et al., 2017; Jordan et al., 2017;

Lancaster & Irene Harris, 2018). Additionally, in military populations, other-directed transgressions were associated with higher levels of anger, and anger also mediated the relationship between other-directed transgressions and PTSD severity (Jordan et al., 2017; Lancaster & Irene Harris, 2018).

In conclusion, moral emotions such as shame, guilt, and anger are important for moral transgressions. Also, distinguishing between self-directed and other-directed moral transgressions is essential, as these types of transgressions may result in different psychological outcomes. However, studies on moral transgression types are mixed, only limited to clinical populations, and the impact of exposure to dual transgressions (e.g., self-directed and other-directed transgressions simultaneously) is not always incorporated.

Negative cognitions

Example 2 Statement of anonymous respondent of student survey

"I once got into a fight while going out. My friends were threatened with a knife. I didn't do everything I could to prevent this fight at the time. And I also feel like others didn't do what they could to prevent this situation either. Afterwards, I blame myself for not acting."

The influence of negative post-trauma cognitions has been studied extensively concerning a wide range of traumatic events and PTSD (Brown et al., 2019; Ehlers & Clark, 2000), and more severe negative cognitions are generally associated with more PTSD symptoms (Ter Heide et al., 2017; Zhou et al., 2015). As described earlier, the framework of moral injury (Litz et al., 2009) illustrates how moral injury may be the result, not merely from the event itself, but from the appraisals and emotional consequences that follow. A growing body of research suggests that similar cognitive processes may be involved in the development of PTSD following exposure to moral transgressions, specifically highlighting the role of negative self-perceptions. The cognitive model of PTSD by Ehlers and Clark (2000) has been applied to moral transgressions as well and postulates that negative cognitions (e.g., "*I am unforgivable*" and "*People will blame and reject me*") lead to current feelings of threat (similar to PTSD), which leads to a range of cognitive and behavioural strategies to cope with these feelings (e.g., rumination, substance use) (Ehlers & Clark, 2000;

Murray & Ehlers, 2021). Some studies showed that negative beliefs about the self and self-blame are often strongly associated with moral injury (Currier et al., 2018; Litz & Kerig, 2019). For example, in a study among treatment-seeking veterans, negative cognitions about self-blame, the self, and the world mediated the relationship between self-directed transgressions and trauma-related psychopathology, although there were no associations between other-directed transgressions and negative cognitions (Held et al., 2017). Such cognitive perceptions, including pervasive thoughts of self-worthlessness, may exacerbate the psychological impact of moral transgressions. Another study in a military sample compared cognitions related to moral injury and cognitions related to PTSD and found that moral injury was associated with cognitions about atonement, self-worth and judgment, reliability and trustworthiness of others, and forgiveness of others, while PTSD was associated with cognitions about threat of harm (Boska & Capron, 2021).

It can be concluded that, while the impact of negative cognitions related to moral transgressions is not yet fully understood, initial evidence suggests it is a promising area for exploration. More research is necessary to understand how negative cognitions act as potential mediators in the relationship between moral transgressions and posttraumatic stress. Addressing both the emotional and cognitive aspects of moral injury can eventually enhance knowledge regarding the treatment and support for recovery.

Autobiographical memory

Generally, memories of life events are stored in our autobiographical memory, which includes the collection of all personal events that were experienced in the past, encompassing specific events (e.g., graduation from university) and general knowledge about our life (e.g., the school we attended as a child). As a result, memory processes are important for the way that events are stored, recalled, and processed later in life. Furthermore, autobiographical memory plays an important role in defining our *identity* (McAdams, 2008). According to the Self-Memory System (SMS) theory (Conway, 2005), our autobiographical memory serves to preserve a coherent sense of self. Memories that significantly challenge or threaten our self-concept, such as trauma memories, disrupt this coherence. When a traumatic event is seen as central to one's identity, it can heighten feelings of ongoing threat and make related memories more vivid and accessible, increasing PTSD symptoms like re-experiencing (Berntsen & Rubin, 2006; Robinaugh & McNally, 2010, 2011). Given that event-centrality is associated with increased accessibility and vividness of memories, it can be asserted that event-centrality is associated with *memory phenomenology*. That is, specific

characteristics of trauma memories and how they are recalled in autobiographical memory (Sutin & Robins, 2007).

Following trauma, event-centrality has high prognostic value for posttraumatic stress (Silva et al., 2016), and memory characteristics can serve different functions. One key function is to guide future behaviour by allowing individuals to learn from past experiences. That is, memories can act as a *warning signal*, helping people to avoid similar negative outcomes in the future (Berntsen & Rubin, 2007; McCarroll, 2017; Tversky & Kahneman, 1973). Another important function of memory characteristics is *emotion regulation*. People may re-experience past events from a more detached or observer-like perspective to reduce emotional intensity. This self-distancing strategy can help regulate distress and contribute to psychological coping (Finnbogadóttir & Berntsen, 2014; Kenny & Bryant, 2007; Libby & Eibach, 2002; Mooren et al., 2019). So far, studies have primarily investigated the centrality of traumatic events without a moral conflict. However, as noted, the importance of moral conflicts that arise during traumatic events and their impact on posttraumatic stress and related symptomatology are increasingly acknowledged. Only a few (experimental) studies have examined memory characteristics and event-centrality of memories of immoral behaviour in non-clinical samples, but the results are inconclusive.

In conclusion, the concepts of event-centrality and memory characteristics offer valuable insights into the understanding of trauma memories involving moral conflict, as such memories are particularly likely to challenge one's self-concept and sense of identity. However, to our knowledge, no studies to date have directly examined event-centrality or memory characteristics in the context of trauma memories with moral conflict. Moreover, existing research on memories of immoral behaviour, which are not necessarily traumatic, has yielded inconsistent findings, indicating the need for further investigation in this area.

Case example

As an initial exploration and preparation for our studies on moral injury in refugees, we conducted interviews with refugees who experienced moral transgressions. Below is a case illustration of one of the refugees we interviewed. After he talked about his morally injurious experiences, we asked him how he felt about himself. This is a good example of how difficult it is to integrate memories of moral transgressions into one's self-concept.

Example 3 Statement of refugee during interview about moral transgressions

"I want to delete myself. I want to tear it away from myself, so to speak. It exists within me, but it doesn't fit who I am. And who I want to be. I can't explain it, and I can't forgive myself either. I want to know how I can disconnect it from myself. It seems like I'm a different person. There are times when I doubt who I am. What is my true nature?"

Unresolved issues in moral injury research

Although the growing body of research studies over the past years has proved of great value for understanding the impact of moral transgression exposure, some unresolved issues need to be addressed.

One issue is the expansion of research on moral transgressions and moral distress across different populations. Over the years, there has been a shift from focusing solely on military personnel to including other groups, such as healthcare workers, refugees, and the general population. However, it remains unclear **how moral transgressions manifest and impact individuals across diverse backgrounds**. Important questions are: *What is the nature of the morally distressing/injurious events individuals are exposed to? And what is the impact of different types of moral transgressions (e.g., self-directed, other-directed, or dual) on how individuals remember those moral transgressions?*

Second, the majority of studies relied primarily on quantitative data analysis to investigate the impact of moral distress and moral injury in terms of clinical outcomes. While this approach provides valuable insights, it lacks the depth needed to fully capture the experiences and subjective meanings individuals attach to their moral struggles. There is a lack of **qualitative research** and mixed-method designs that describe morally distressing events in the general population and among refugees. This could complement existing quantitative studies by offering more details on the nature of morally distressing events across different populations.

Third, little is known about **the individual differences in how individuals respond to moral transgressions**. Specifically, it is unclear whether moral injury and posttraumatic stress always co-occur, or whether there are individuals who experience posttraumatic stress following morally distressing events without showing signs of moral injury, or vice versa. Additionally, there is a limited understanding of the correlates and predictors associated with membership in these different subgroups. This knowledge contributes to a more nuanced understanding of trauma-related psychopathology, suggesting that not all individuals respond to morally distressing events in the same way. Differentiating between subgroups can help tailor clinical assessments and inform the development of more personalized treatment approaches.

Fourth, there is still much to learn regarding the **specific factors that mediate the relationship between moral transgressions and psychological outcomes**. Key candidate factors that require further research include cognitive appraisals and negative thought patterns, such as self-blame, as well as the role of moral emotions experienced during or after exposure to moral transgressions. These factors have not yet been fully explored. Understanding these mediating factors is crucial for advancing both clinical and theoretical perspectives on moral injury and trauma. Treatments that address maladaptive appraisals may prove particularly effective for individuals affected by morally injurious events.

Lastly, a relatively underexplored topic in moral injury research is the **role of memory processes** in how morally distressing events are encoded and stored in autobiographical memory. Theoretical models suggest that memories posing a high threat to personal integrity, such as trauma memories with moral conflict, threaten one's self-concept. Also, the centrality of an event is an important predictor of how intrusive a trauma memory becomes. However, to our knowledge, event-centrality and memory characteristics after exposure to trauma memories with moral conflict have not yet been investigated.

AIMS AND OUTLINE OF THE CURRENT THESIS

Our main objective was threefold:

1. To examine the nature and psychological impact of morally distressing events and moral conflicts across diverse trauma-exposed populations.
2. To examine if subgroups can be identified that differ in terms of moral injury appraisals and posttraumatic stress, and to examine correlates of subgroup membership.
3. To investigate the characteristics and event-centrality of memories of moral transgressions (self-directed, other-directed, and dual) and associations with emotional-cognitive functioning, posttraumatic stress, and depression.

The chapters are divided into two parts, covering complementary goals.

In the **first part** of this dissertation, we examine moral injury appraisals and posttraumatic stress in two different clinical populations that faced high levels of trauma exposure during their work (one study in police officers) or war (two studies in refugees with different datasets). In the first study, refugees with and without exposure to moral transgressions are compared in terms of PTSD severity, feelings of guilt, and general mental health problems. Two other studies seek to identify subgroups in clinical samples of refugees and police officers to understand how individuals can respond differently. In two of the three studies, qualitative analyses are used to examine the nature of moral transgressions in different populations.

The **second part** of this dissertation includes two studies in trauma-exposed emerging adults. In both studies, we use a memory recall task to qualitatively explore the nature of the memories of moral transgressions and trauma memories with moral conflict in this population. Also, we investigate differences between trauma memories with and without moral conflict and different moral transgression types in terms of PTSD, emotional, and cognitive outcomes. Findings help to clarify how young adults deal with moral distress.

This dissertation includes the following chapters:

In **Chapter 2,** we examine the nature of moral transgressions among refugees, using a qualitative approach. We aim to gain more insight into the nature of moral transgressions in a refugee population. Also, we aim to study differences between refugees with and without exposure to moral transgressions in terms of PTSD severity, feelings of guilt, and general mental health problems.

The primary objective of the study in **Chapter 3** is to examine individual differences in refugees exposed to traumatic events by identifying classes of moral injury appraisals and PTSD symptoms and to investigate differences between these classes in terms of demographics, general psychopathology, and depression.

In **Chapter 4,** our objective is to study individual differences in trauma-exposed police officers by identifying classes of moral injury appraisals and PTSD symptoms, while also investigating potential clinical differences between these classes. For this study, latent class and regression analyses are conducted to examine the presence of different classes among trauma-exposed police officers and class differentiation in terms of demographics, general psychopathology, PTSD severity, mistrust, guilt, self-punishment, and feelings of worthlessness.

In **Chapter 5,** we describe a study examining the event-centrality and memory characteristics of trauma memories with and without a moral conflict in emerging adults. Our main objective is to study differences in event-centrality, memory characteristics, emotional distress, and posttraumatic stress between young adults recalling trauma memories with a moral conflict to young adults whose trauma memories did not involve a moral conflict. Additionally, we examine how event-centrality is associated with posttraumatic stress and memory characteristics and describe the nature of the moral transgressions this sample experienced.

In **Chapter 6,** we explore differences in psychological outcomes among emerging adults who recalled a morally distressing event as a result of self-directed, other-directed, or dual transgressions (i.e., both self- and other-directed transgressions simultaneously). We compare the three groups reporting these transgressions in terms of emotions (fear, shame, guilt, and anger), negative cognitions (about self-blame, the self, and the world), and clinical outcomes (posttraumatic stress and depression). Additionally, we explore the variables fear, negative cognitions about self-blame, the self, and the world as potential mediators between exposure to self-directed, other-directed, or dual transgressions, and posttraumatic stress.

In **Chapter 7,** findings from all studies are summarised, integrated, and discussed concerning the current scientific literature. Also, a personal reflection on the scientific work of this dissertation is included.

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PART I

2

CHAPTER 2

The impact of morally injurious events in a refugee sample: a quantitative and qualitative study

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ABSTRACT

Background

Posttraumatic Stress Disorder (PTSD) is often reported by refugees who faced violence and persecution. Some stressful events may also entail moral conflicts or dilemmas, described as "potentially morally injurious events" (PMIE). Very few studies have yet investigated the nature of these PMIEs in traumatized refugees, using both quantitative and qualitative data.

Method

For this retrospective study, secondary data analysis was used to examine the traumatic events of 183 patients. Based on established definitions of a PMIE, participants were allocated to a Moral Injury (MI) group if they reported lasting distress after exposure to an event that they indicated transgressed their moral beliefs. The remaining participants were allocated to the No-MI group. The type of PMIEs was categorized using qualitative analysis. The groups were compared in terms of PTSD severity, feelings of guilt, and general mental health symptoms.

Results

Of the total sample, 55 participants reported one or more acts of transgression (MI group) and 128 reported no acts of transgression (No-MI group). Analyses of PMIEs revealed six themes 1) failing to prevent harm to others, 2) not giving aid to people in need, 3) leaving family members behind that consequently lead to injury or death of others, 4) making indirect and direct moral decisions leading to injury or death of others, 5) betrayal, and 6) engaging in the harm of others. No differences were found between groups on the clinical outcomes, except for feelings of guilt.

Conclusion

A considerable number of traumatized refugees reported confrontation with PMIEs. Experiencing PMIEs appeared unrelated to elevated posttraumatic mental health issues.

Keywords

Moral injury, moral stress, refugees, PTSD, guilt

1. INTRODUCTION

As a result of persecution, conflict, violence, and human rights violations, more than 89.3 million people worldwide were forcibly displaced, of which 52.3 million were internally displaced at the end of 2021 (United Nations High Commissioner for Refugees; UNHCR, 2021). The majority of the refugees have experienced multiple traumatic events such as sexual violence and imprisonment (Bhui et al., 2003). Furthermore, many of them endured stressors during the migration process, such as separation from family, stays in refugee camps, and lengthy asylum procedures (Ryan et al., 2008). Not surprisingly, the prevalence of mental health problems in refugees is high (Nickerson et al., 2015; Spiller et al., 2017). Mood and anxiety disorders are often reported, even years after resettlement (Bogic et al., 2012; Henkelmann et al., 2020), indicating a high and persisting mental burden in refugees. The effects of violence and persecution go beyond fear-related reactions. Some traumatic experiences also entail moral conflicts or dilemmas and may be described as "potentially morally injurious events" (PMIEs). These events include "bearing witness to perceived immoral acts, failure to stop such actions, or perpetration of immoral acts that are inhumane, cruel, depraved, or violent, bringing about pain, suffering, or death of others" (Drescher et al., 2011, p. 9). The term "moral injury" refers to "the lasting psychological, biological, spiritual, behavioural, and social impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations" (Litz et al., 2009, p. 697).

Both definitions illustrate that moral injury and PMIEs can result from either active acts of commission (hereafter indicated as 'commissions') or a failure of acts that prevented harm (hereafter indicated as 'omissions') and can either be a result of appraisals of one's own moral transgressions (MI-Self) or appraisals of moral transgressions by others (MI-Other) (Hoffman et al., 2018; Hoffman et al., 2019). There are indications that MI-self appraisals result in different outcomes than MI-other appraisals. For instance, research has shown that MI-Other appraisals were associated with more severe Posttraumatic Stress Disorder (PTSD) symptoms, and MI-Self appraisals were associated with a lower level of intrusions (Hoffman et al., 2018; Hoffman et al., 2019). In first-responder populations, it was found that actively perpetrating acts that transgressed moral values or beliefs (MI-self) was associated with greater self-blame, guilt, and re-experiencing than exposure to life-threatening situations without moral transgressions (Litz et al., 2018). Also, there was a reciprocal relationship between PMIEs with transgressions of oneself and PTSD symptoms six months later (Currier, McDermott, et al., 2019). In addition, veterans who actively killed others had more

suicidal ideations than individuals without these killing experiences (Maguen et al., 2012).

Many studies investigating moral injury have focused on military populations (Drescher et al., 2011; Griffin et al., 2019). Transgressions of moral beliefs included events such as killing, betrayal, and failing to prevent harm to civilians (Nash et al., 2013). Studies in a refugee population sample demonstrated that the majority of the refugees reported MI-other appraisals or a combination of MI-other and MI-self appraisals. Also, being troubled by acts of moral transgression was related to mental health problems such as PTSD, depression, and anger (Hoffman et al., 2018; Hoffman et al., 2019; Nickerson et al., 2014). Moral transgressions also predicted externalizing symptoms but not internalizing symptoms in refugee adolescents (McEwen et al., 2022). Results provided evidence that the majority in a help-seeking refugee sample reported embitterment and moral injury appraisals were positively associated with levels of embitterment, revealing the importance of perceived injustice in mental health problems after trauma exposure (Spaaij et al., 2021). Still, there is very limited knowledge on the prevalence of moral injury in refugees, as well as the nature of the PMIEs that refugees endure. Refugees are often exposed to a cumulation of traumatic events that may meet the definition of a PMIE (Drescher et al., 2011), but the nature and scope of PMIEs in refugees is yet to be examined. Also, little is known about the relationship between moral transgressions (either by oneself or others) and feelings of guilt, PTSD symptoms, and other mental health symptoms in refugees.

As far as we are concerned, there are no studies that examined PMIEs in a refugee sample by describing the nature of the PMIEs that refugees report. Therefore, the first aim of this study was to examine the nature of PMIEs among refugees, using a qualitative approach. Whereas we expected to find similar PMIEs as found in military contexts, we assumed that several PMIEs may reflect moral transgressions that are typical for a refugee population. For instance, leaving family members behind or making decisions about who receives (medical) aid first. Next to the PMIEs, we also aimed to provide descriptions of the traumatic events that patients were exposed to, differentiating between MI-self and MI-other, and report the number of events in the total group of patients.

Our second aim was to compare refugees with and without PMIEs in terms of PTSD severity, feelings of guilt, and general mental health complaints. We expected participants in the MI group to have more severe psychological complaints, manifesting in higher levels of PTSD, feelings of guilt, and other mental health complaints. This prediction was based on earlier studies (Bryan et al., 2016; Currier

et al., 2014; Hoffman et al., 2018; Nickerson et al., 2015). Specifically, we expected that the MI group would report more cluster D symptoms and feelings of guilt than the No-MI group since moral transgressions are associated with more feelings of guilt and wrongdoing (Stein Nathan; Stein et al., 2012). Guilt is often seen as an important emotion in moral injury (Jinkerson, 2016) and can be viewed as a central component of PMIEs. Guilt is associated with having committed a moral transgression (MI-Self), whereas MI-Other events have been associated with anger in refugee populations (Hoffman et al., 2018). In a recent study among refugees, it was found that both preexisting general moral beliefs and situation-specific blame appraisals were important for emotional outcomes such as guilt and anger (Hoffman & Nickerson, 2022).

2. METHOD

2.1 Participants

This retrospective study was conducted at a Dutch centre for specialist diagnostics and treatment of people with complex psychotrauma complaints (i.e., ARQ National Psychotrauma Centre / Centrum '45). The majority of patients referred to this centre are severely traumatized individuals who received one or multiple treatments at other institutions, with limited success. The sample in the current study consisted of refugees (all above 18 years old) referred for diagnostics and treatment between 2014 and 2018.

2.2 Procedure

Data for this retrospective study were primarily collected for clinical purposes as part of the routine screening and assessment procedure before the start of treatment at ARQ Centrum'45. Data that were not stored automatically were entered into the system by authorized members of the clinical staff. Subsequently, data were archived anonymously for scientific research purposes by our data management department. After this procedure, anonymized data were made available to the researchers conducting this retrospective study. Patients were informed about the storage of anonymized assessment data and allowed to have their data removed from the database, a procedure that is coordinated by our data management department. At intake, patients were interviewed about their psychological complaints and the traumatic events they encountered. They also filled out several questionnaires as part of the Routine Outcome Monitoring, including the Brief Symptom Inventory (BSI) and the Life Events Checklist for DSM-5 (LEC-5).

We used officially translated questionnaires in several languages (e.g., Dutch, English, French, Farsi, Bosnian Serbian, and Arabic), and if a specific language was not available, an official interpreter assisted. Furthermore, the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) was administered in English, Dutch, or with the assistance of an interpreter. Patients were asked to offer written informed consent that the data from the assessment procedure, as well as their electronic patient file, could be anonymously archived for scientific research purposes; 379 patients did so.

For secondary analysis, participants were allocated into two groups based on information from the intake procedure: the MI group (one or more PMIEs) or the no-MI group (no PMIEs). The traumatic events reported at intake were examined to assign the group categorization. First, one clinician made a broad preselection of the intake reports in order to categorize the events that were mentioned in the reports as 'potential MIE'. Traumatic events were indicated as PMIE when the description of the event and its consequences included information on (1) moral transgressions of the person himself or others (e.g., "watching how a friend was physical attacked"), or (2) the event was accompanied by feelings of guilt, shame, regret, remorse (e.g. "felt guilty because I didn't react to it"), or (3) the event included a perceived moral decision or a moral conflict directly related to the event (e.g. "I made the choice to flee but wasn't sure about it").

The potential PMIEs were listed separately in an anonymized file. In case more than one PMIE was reported in the intake report, all PMIEs were selected. Then, two other clinicians categorized the PMIEs following the definition of PMIEs by Drescher (2011) and the definition of moral injury by Litz (2009). An event was categorized as PMIE when the description of the event included (1) either a moral decision or a moral transgression by the person himself or others (either commissions or omissions) and (2) negative (emotional) consequences for the person himself or important others, either in a psychological, biological, spiritual, behavioural, or social manner. All participants with a designated PMIE were allocated to the MI group. When no information on the traumatic events or moral transgressions could be found, the information was ambiguous, or there was no information on the consequences of the event, patients were excluded from the current study, resulting in the reduction of the total sample of 379 participants to a total of 183 participants. Of this sample, 55 participants were assigned to the MI group and 128 participants to the No-MI group.

2.3 Measures

2.3.1 Demographics

As part of the assessment procedure (described above), the following demographic variables were documented: age, gender, and country of origin.

2.3.2 Traumatic events

The Life Events Checklist for DSM-5 (LEC-5) is a 17-item self-report measure used to screen for exposure to potentially traumatic events, as defined with the A-criterion of PTSD according to the DSM-5 (Weathers et al., 2013). It assesses exposure to 16 events known to lead to PTSD or distress and one appended item assessing any additional stressful event. Answers are rated on 6-point scales with anchors: 1 = "happened to me"; 2 = "witnessed it"; 3 = "learned about it"; 4 = "part of my job", 5 = "not sure"; 6 = "does not apply". Findings show the LEC is a psychometrically sound instrument (Gray et al., 2004).

2.3.3 PTSD severity

The Clinician-Administered PTSD scale for DSM-5 (CAPS-5) is a 30-item structured diagnostic interview that measures the number of PTSD symptoms (Weathers et al., 2013) as well as PTSD severity and delayed expression. The CAPS-5 is a psychometrically sound measure, with strong reliability and validity (Boeschoten et al., 2018; Müller-Engelmann et al., 2020; Weathers et al., 2018). The total severity score demonstrated high internal consistency ($\alpha = .88$). The subscale in this study that measured criteria D symptoms of PTSD also showed good internal consistency ($\alpha = .76$).

2.3.4 Mental health symptoms and feelings of guilt

The Brief Symptom Inventory (BSI) is a 53-item self-report questionnaire (Derogatis & Melisaratos, 1983) that measures symptoms of psychological stress on nine subscales: depressive mood, interpersonal sensitivity, hostility, somatisation, psychoticism, suspicion, phobic fear, cognitive problems, and anxiety. One item of the BSI ("feelings of guilt") was individually analysed to assess guilt. Answers are scored on a 5-point Likert scale (0 = "totally disagree" to 4 "totally agree"). Researchers have found good psychometric properties of the instrument in the general (De Beurs & Zitman, 2006) and refugee population (Raghavan et al., 2017).

2.4 Statistical Analysis

For this retrospective study, we used secondary data analysis. IBM SPSS Statistics 27.0 was used to conduct the statistical analyses, performed with a significance level of $p < .05$ (two-tailed). The data were screened for multivariate and univariate outliers across and within conditions according to the procedure by Tabachnick and Fidell (2018). There were no multivariate outliers detected with Mahalanobis distances. However, there were multiple univariate outliers (more than three standard deviations) on the variables trauma load (LEC-5 total score), PTSD severity (CAPS-5 total score), and criterion D symptoms (number of symptoms and severity). The outlier cases of these variables were replaced with the highest non-outlier case (Tabachnick & Fidell, 2018). Missing data were detected for the variable trauma load ($n = 12$) (measured with the LEC), for the PTSD severity variable ($n = 1$), and the BSI total score ($n = 1$).

The assumptions of independence of observations and normality were met. However, the homogeneity of variances was not met for all variables. For the variables PTSD severity and criterion D symptoms (severity), the variance was significantly different in the two groups, $F(1,180) = 11.36$, $p < .001$, and $F(1, 180) = 5.75$, $p < .05$, respectively. For these variables, the Welch t-test was used in the analyses. Due to unequal group sizes, Pillai's trace was used in the interpretation of the results as it is more robust than other statistics to violations of model assumptions (Ateş et al., 2019).

For our first aim, qualitative analysis was carried out. The PMIEs of the participants were categorised into themes based on coding of the events following an inductive approach. The two clinicians who made the final categorisation of PMIEs also categorised all PMIEs into either commissions or omissions. Also, they made a distinction between MI-self and MI-other. The distinction between self and other was based on the Moral Injury Events Scale (MIES) (Bryan et al., 2016; Nash et al., 2013) and the Moral Injury Appraisal Scale (MIAS) (Hoffman et al., 2019) where events were categorized as MI-self when the individual was the one who committed an act that was morally wrong or failed to prevent morally wrong acts (e.g. "I am troubled by morally wrong things I have done" and "I went against my own morals by failing to do something I should have done") (MIAS). An event was categorised as MI-other when individuals were troubled because others acted morally wrong (e.g., "I am troubled because I saw other people do things that were morally wrong") (MIAS). Lastly, the clinicians closely examined the summaries of the PMIEs in order to identify common themes following an inductive approach. This was done by highlighting the most important words or sentences that described the content and subsequently identifying common themes. For instance, sentences such as "tried to give medical

aid" and "was not able to help" were put together and labelled as the category "not giving aid to people in need".

For our second aim, independent samples t-tests and a chi-square test were run to explore the differences between MI groups on the demographic variables. The differences between the MI groups (independent variable) on the dependent variables, mental health symptoms (total score BSI), and feelings of guilt (sub-item of the BSI) were assessed with a multivariate analysis of variance (MANOVA). The differences between MI groups (independent variable) on PTSD severity and cluster D symptoms of PTSD were assessed with two Welch t-tests. Fisher's exact test (crosstabs) was used to test the differences between groups for item 16 of the LEC-5 ("serious injury, harm, or death you caused to someone else").

3. RESULTS

3.1 Demographics

Table 1 shows the descriptive statistics of the demographic variables. The MI group and the No-MI group differed significantly for gender, $\chi 2$ (1, 183) = 9.07, p = .003, but not for age, $F(1, 182) = 2.83$, $p = .094$, $\eta 2 = .015$. In the total sample, there were more male than female patients, and there were only nine women in the MI-group in comparison to 50 women in the No-MI group. The age of participants ranged from 18 to 74 years. Participants were included from more than 47 different countries of origin. Most participants were from (former) Yugoslavia (13.1%), Afghanistan (10.9%), Iran (9.8%), Iraq (9.3%), Syria (7.1%), and Nigeria (6.6%). There were six participants whose country of origin was not documented.

3.2 Traumatic events

For descriptive statistics, see Table 2. Overall, in this sample, the trauma load was high, with each participant experiencing at least three traumatic events and a maximum of fourteen events reported by five participants. Physical assault was most often reported in the total sample, followed by assault with a weapon, and combat or exposure to a war zone (in the military or as a civilian). In the MI group, about 12.7% responded with 'yes' to the statement 'serious injury, harm, or death you caused to someone else' in comparison to 7.8% in the No-MI group. Fisher's exact test showed that this difference was not significant, $p = .40$. Furthermore, there were no significant differences in the endorsement of traumatic events between both groups, except for item 10 ("combat or exposure to a war-zone, in the military or as a civilian") (94%

in MI-group and 75% in No-MI group) and item 14 (“sudden violent death”) (80% in MI-group and 57% in No-MI group), respectively, $p < .005$ and $p < .01$.

3.3 Aim 1: qualitative analyses of PMIEs

In total, all participants in the MI group reported at least one PMIE. Of the total sample (*N*=55), 40 participants (72.7%) reported PMIEs that included commissions or omissions of themselves (MI-self), five participants (9.1%) reported PMIEs based on the acts and responsibility of others (MI-other), and six participants (10.9%) reported both. Furthermore, 21 participants (38.2%) reported events where they failed to act in a way that they found morally right (omissions), 27 participants (49.1%) reported acts with a moral transgression performed by themselves (commissions), and seven participants (12.7%) reported a combination of these two. Only six participants (10.9%) reported PMIEs that were related to being in combat as a soldier. The remaining participants reported PMIEs as civilians.

The descriptions of PMIEs contained mostly war related dilemmas and injuries and could be classified in the following categories: 1) failing to prevent harm to others (omission), 2) not giving aid to people in need (omission), 3) leaving family members behind that consequently lead to injury or death of others (commission), 4) making indirect and direct moral decisions that consequently led to injury or death of others (both commissions and omissions, 5) betrayal (commission) and 6) engaging in the harm of others (commission).

The majority of the participants in this sample reported the fourth category, followed by the first category. Regarding the first category (23.6%), participants mostly reported witnessing events of (extreme) violence and harm to others, but failing to stop this violence. These events were accompanied by feelings of powerlessness next to guilt, shame, and sadness.

For the second category (16.4%), the description that was mentioned most often was not giving medical help to others in need. Primarily, because they were injured themselves and therefore not able to help, but they felt regret and guilt afterwards. As for the third theme (14.5%), some participants reported that they left family members behind due to several reasons. Although it seemed the right decision at that moment, they reported feelings of guilt and regret, especially when they heard that the family members they left behind were in danger.

The fourth category (30.9%) assembles a variety of events and was predominantly about the choice for a specific profession or the choice to become politically active, which caused a risk of arrest or imprisonment, or put others at risk. As for the fifth category (3.6%), two participants reported events of betrayal. One person felt betrayed by others, and the other person reported that they had betrayed someone else under pressure and threat. Lastly, a few participants (9.1%) actively engaged in harming other people. Interestingly, almost everyone reported that they acted under duress because they were (physically) threatened.

3.4 Aim 2: quantitative analyses

3.4.1 PTSD severity

The vast majority of participants in this study met DSM-5 criteria for PTSD based on the CAPS (N = 160, 87.4%). Furthermore, 66 (36.1%) participants had a PTSD diagnosis with delayed expression, and 39 (21.3%) participants had a PTSD diagnosis with dissociative symptoms. For descriptive statistics, see Table 3. The MI group reported greater PTSD severity and cluster D severity than the No-MI group, but a Welch t-test showed that this effect was not statistically significant for both PTSD severity and cluster D severity (Table 2). As the MI group included significantly more males than the No-MI group, an explorative one-way ANCOVA was used to examine if there was an effect of group (independent variable) on PTSD severity (dependent variable), whilst controlling for gender (covariate). Results showed no significant difference between the groups after controlling for gender, $F(1, 179) = 1.47$, $p = .22$. For descriptive statistics, see Table 2.

3.4.2 Mental health symptoms and feelings of guilt

The MI group reported slightly more mental health symptoms on the total BSI score than the No-MI group but this difference was not statistically significant $F(1, 168) = .63$, $p = .54$. Also for the subscales of the BSI no statistically significant differences were found, all $F(1, 181), \geq .013$, all $p \geq .138$. Based on the observation that the MI group included significantly more males than the No-MI group, an explorative one-way ANCOVA was conducted that examined the effect of group level on mental health symptoms (total BSI score), whilst controlling for gender. Results showed no significant difference between the groups after controlling for gender, $F(1, 179) = .52$, $p = .47$. On item level, the MI group reported significantly more feelings of guilt (item 52 of the BSI) than the No-MI group, $F(2, 167) = 4.02$, $p < .005$. For descriptive statistics, see Table 3.

Table 1 Descriptive statistics of demographic variables for each group

Measure		Moral Injury group		No-Moral Injury group		Total	
		N (%)	***M (SD)***	***N (%)***	***M (SD)***	***N (%)***	***M (SD)***
Total sample		55 (30)		128 (70)		183 (100)	
Age			39.78 (10.56)		42.78 (12.18)		40.68 (11.12)
Gender	Female	9 (15.3)		50 (84.7)		59 (32.2)	
	Male	46 (37.1)		78 (62.9)		124 (67.8)	
Country of origin	Afghanistan	7 (12.7)		7 (12.7)		20 (10.9)	
	Iran	5 (9.1)		13 (10.2)		18 (9.8)	
	Iraq	5 (9.1)		12 (9.4)		17 (9.3)	
	Nigeria	3 (5.5)		9 (7)		12 (6.6)	
	Syria	2 (3.6)		11 (8.6)		13 (7.1)	
	Yugoslavia	14 (25.5)		10 (7.8)		24 (13.1)	
	Other	19 (34.5)		60 (46.8)		79 (43.2)	
	Unknown	2 (1.09)		4 (2.19)		6 (3.28)	

Table 2 Number and percentage of the traumatic events reported by participants in each group

Measure	Moral Injury group		No-Moral Injury group		Total	
	N	***%***	***N***	***%***	***N***	***%***
Natural disaster	18	35.3	31	30.1	49	31.8
Fire or explosion	37	74.0	71	70.3	108	71.5
Transportation accident	28	54.9	64	62.7	92	60.1
Serious accident at work, home, or during recreational activity	15	29.4	26	25.5	41	26.8
Exposure to a toxic substance	14	28.0	15	14.9	29	19.2
Physical assault	43	84.3	91	89.2	134	87.6
Assault with a weapon	44	86.3	88	98.1	132	86.8
Sexual assault	16	31.4	43	42.2	59	38.6
Other unwanted or uncomfortable sexual experiences	12	23.5	37	35.9	49	31.8
Combat or exposure to a war zone (in the military or as a civilian)*	48	94.1	77	74.8	125	81.2
Captivity	35	70.0	64	62.7	99	65.1
Life-threatening illness or injury	23	45.1	45	44.6	68	44.7
Severe human suffering	48	94.1	91	88.3	139	90.3
Sudden violent death**	41	80.4	59	57.3	100	64.9
Sudden accidental death	15	29.4	45	43.7	60	39.0
Serious injury, harm, or death you caused to someone else	7	14.0	8	7.7	15	9.7
Any other experience	24	51.1	51	50.0	75	50.3

* $p < .005$, ** $p < .01$

Table 3 Descriptive statistics of PTSD severity symptoms and mental health symptoms

Measure	Moral Injury group		No-Moral Injury group		*t*(180)	*p*	Cohen's D	Total	
	M	*SD*				*M*	*SD*	*M*	*SD*
PTSD severity	41.69	8.50	39.44	11.71	2.413	.122	.22	40.16	10.81
Cluster B (severity)	11.56	3.37	11.23	3.92				11.33	3.74
Cluster C (severity)	4.11	1.73	4.05	1.77				4.07	1.75
Cluster D (severity)	14.46	3.79	13.58	5.08	1.837	.177	.24	13.86	4.71
Cluster E (severity)	11.48	3.51	10.42	4.11				10.76	3.95
Mental health symptoms	2.29	0.66	2.19	0.75				2.22	0.72
Somatic complaints	2.02	0.91	1.98	0.91				1.99	0.91
Cognitive problems	2.59	0.74	2.59	0.93				2.59	0.87
Interpersonal sensitivity	2.28	0.92	2.13	1.03				2.17	0.99
Depressive mood	2.60	0.97	2.57	0.97				2.57	0.94
Fear	2.56	0.84	2.46	0.90				2.49	0.88
Hostility	1.78	1.02	1.57	1.03				1.64	1.02
Phobic anxiety	2.20	1.00	1.94	1.06				2.03	1.04
Paranoid thinking	2.44	0.97	2.22	1.05				2.29	1.03
Psychoticism	1.94	0.80	1.98	0.93				1.97	0.89
Feelings of guilt	2.52	1.51	1.92	1.54				2.11	1.52

4. DISCUSSION

The first aim of this study was to examine the nature of PMIEs among treatment-seeking traumatized refugees qualitatively. Over 30% of the refugees in this study reported one or more PMIEs at intake. The PMIEs of refugees included 1) failing to prevent harm to others, 2) not giving aid to people in need, 3) leaving family members behind that consequently lead to injury or death of others, 4) making indirect and direct moral decisions that consequently lead to injury or death of others 5) betrayal, and 6) engaging in harming others. Failing to prevent harm to others, harming others, and betrayal were described in earlier studies with military groups (Nash et al., 2013). However, the scope of PMIEs in refugees goes beyond combat-related PMIEs often found in the military. From the qualitative results, it appeared that only 11% of the participants reported combat-related PMIEs that are similar to military personnel who were deployed in active duty. This study shed light on PMIEs that were specifically related to the refugee context, such as the decision to flee the country and leave loved ones behind. In most cases, the person felt guilt when they found out that those family members were harmed or persecuted because they decided to flee. The quantitative results showed that the MI-group reported significantly more often the experience of being in combat or exposure to a warzone (measured with the LEC-5) than the No-MI group. This suggests that exposure to war or combat are important contextual factor in the experience of PMIEs in refugees.

These results provide insight into the difficult moral dilemmas and PMIEs that refugees can face. In contrast to earlier studies (e.g., Hoffman et al., 2018), the qualitative results of our study showed that the majority of refugees in the MI-group reported moral transgressions by themselves (MI-self) instead of transgressions by others, except for betrayal. Yet, it could be hypothesized that many identified moral transgressions in our study (e.g., failing to prevent harm to others) also involved transgressions by others, although this was not explicitly reported by the participants as a moral transgression (and therefore not reflected in the data). Also, the quantitative results of our study confirm that the MI-group was exposed to MI-Other experiences, reflected in their endorsement of items of the LEC-5. Here, it was found that in the MI-group, 80% of the participants witnessed a sudden violent death in comparison to 57% in the No-MI group. At least some of these deaths may involve moral transgressions by others (i.e., MI-Other experiences). Future research could investigate whether exposure to a war zone and being a witness to a sudden violent death are more likely to be experienced as morally injurious in comparison to other traumatic events. Interestingly, the MI-group included significantly more males than females in comparison to the No-MI group. This is comparable to other studies on moral injury

in treatment-seeking refugees (Nickerson et al., 2014). However, there is limited knowledge on gender differences in moral injury. The few studies available showed that PMIEs that included betrayal or being a witness were more often reported by women. No gender differences were found for perpetration-based PMIEs (Maguen et al., 2020).

Our second aim was to compare refugees with and without PMIEs in terms of PTSD severity, feelings of guilt, and general mental health complaints. In contrast to our hypotheses, results showed no differences between the groups in terms of our outcome variables, except for feelings of guilt measured with one item of the BSI. This suggests that experiencing PMIEs is associated with more feelings of guilt but does not directly result in severe clinical symptoms. There are multiple possible explanations for our results. One explanation is that the refugees in this study were reluctant to provide details on experiences potentially yielding high levels of shame or guilt. As a result of human rights violations, mistrusting others can become a survival strategy for refugees in social contexts (Ní Raghallaigh, 2014), reducing the chance of sharing sensitive details. Therefore, PMIEs may be underreported at intake, which is before treatment and before a trusting therapeutic alliance has been established. Hence, several refugees may be incorrectly assigned as No-MI because the PMIEs were rated by clinicians at intake, and no specific measure of PMIEs was administered. Also, ceiling effects might play a role since both groups consisted of severely traumatized individuals. Another explanation for these findings could stem from the difference between MI-self and MI-other. It has been postulated that facing moral violations of others is associated with life-threat and fear, resulting in more PTSD symptoms, in comparison to moral violations of oneself, which is more associated with guilt and shame (Bryan et al., 2016).

In this study, the majority of the participants (72.7%) reported PMIEs that included moral transgressions of oneself. This suggests that guilt was more dominant than fear, perhaps resulting in less elevated PTSD symptoms than expected. It might be possible that committing a moral transgression is related to different outcomes compared to witnessing a moral transgression. It would be interesting to investigate whether omissions and commissions have different outcomes in terms of mental health symptoms. This is relevant for the treatment of distress associated with moral injury. For refugees in particular, this study acknowledges the importance of focusing on cognitive evaluations regarding responsibility, failing to prevent harm to others, and decision-making, as these were the most important themes that resulted from the qualitative analyses. Considering that our study showed that feelings of guilt were significantly stronger in the MI-group compared to the No-MI group,

interventions that address guilt are also advised. For instance, Trauma-Informed Guilt Reduction (TrIGR) is a transdiagnostic psychotherapy that addresses guilt, shame, and moral injury symptoms after exposure to PMIEs and is indicated for a variety of trauma types, including exposure to war and combat (Capone et al., 2021; Norman, 2022). Also, the Brief Eclectic Psychotherapy for Moral Trauma (BEP-MT) is a newly developed treatment protocol that integrates components of cognitive-behavioural, psychodynamic, and systemic psychotherapy and was researched in a single case study (de la Rie et al., 2021).

A strength of the study is that it is the first that qualitatively examines the type of PMIEs experienced by treatment-seeking refugees with PTSD symptoms. Nevertheless, there are several limitations to this study. The first limitation is that PMIEs were identified based on information obtained during intake sessions. No specific measure of PMIEs was administered. As a result, it is possible that participants were incorrectly categorized as No-MI or vice versa. In this study, those participants for whom a distinction could not be made, or data were missing in order to make a decision were excluded, resulting in a considerable reduction of the sample size. Consequently, it is plausible that important information is missed. Also, the clinicians who made the categorizations of PMIEs pre-selected events that focused on a perceived moral decision or moral conflict by the person themselves. However, this might have unintentionally resulted in mainly MI-self experiences instead of MI-other experiences, which could explain why mainly MI-other themes were revealed in the qualitative analyses. Future studies should examine PMIEs more systematically. Furthermore, all the participants were treatment-seeking, which reduces the generalizability of the findings. Another limitation is the cross-sectional design of the study, which lacks information on the course of mental health of participants over time, which would provide a more comprehensive understanding of the development of mental health complaints about PMIEs. Finally, only guilt was considered, whereas other emotions such as blame, regret, shame, or anger are also important outcome measures of PMIEs and should be addressed in future studies. Also, it is a lack of this study that guilt was only measured with one item and not with a validated instrument.

In conclusion, this study illustrates the presence of PMIEs in a refugee population. Refugees with one or more PMIEs had more feelings of guilt in comparison to refugees with no PMIEs, but scores on indices of PTSD and general psychopathology were similar in the two groups. Further research needs to look into the PMIEs of

refugees with a valid instrument to assess moral injury in a large sample and monitor PTSD complaints over time. Furthermore, the differences between commissions and omissions and moral transgressions performed by oneself or others remain unclear. Future studies should investigate this to understand the relationship between PMIEs and mental health outcomes in refugees.

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Author contributions

NM: conceptualization, methodology, formal analysis, writing – original draft preparation. PB: writing – review and editing, supervision. SdlR: writing – review and editing, supervision.

Data availability statement

The data analysed in this study are subject to the following licenses/restrictions: Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available. Requests to access these datasets should be directed to databeheer@arq.org.

Disclosure statement

No potential conflict of interest was reported by the authors.

Ethics statement

Ethical review and approval were not required for the study on human participants in accordance with the local legislation and institutional requirements. Data for this retrospective study were primarily collected for clinical purposes as part of routine screening. Patients were informed about the storage of anonymized assessment data and were asked to offer written informed consent that the data, as well as their electronic patient file, could be anonymously archived for scientific research purposes. Also, participants were provided the option to remove their data.

Transparency and openness

This study was not preregistered. We reported how we determined our sample size, all data exclusions, and all measures in the study.

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3

CHAPTER 3

Moral injury appraisals and PTSD symptoms in treatment-seeking refugees: a latent profile analysis

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ABSTRACT

Background

Refugees flee from countries due to war, violence, or persecution and are often exposed to potentially traumatic events (PTEs). Furthermore, they might encounter situations where they are compelled to act contrary to their moral codes or witness others acting morally wrong. Consequently, they are at risk of not only developing symptoms of posttraumatic stress disorder (PTSD), but also moral injury (MI). To date, MI in traumatized refugees has received limited research attention. The present study sought to identify classes of MI appraisals and PTSD symptoms among refugees exposed to PTEs and to investigate differences between these classes in terms of demographics, general psychopathology, and depression.

Method

For this study, 136 treatment-seeking refugees completed questionnaires on demographics, self-directed and other-directed MI appraisals, PTSD symptoms, general psychopathology, and depression. Latent profile analysis was conducted to identify classes, and regression analyses were conducted to explore differences between classes in terms of age, gender, general psychopathology, and depression.

Results

The following three classes were identified: a “below average MI and below average PTSD class” (39%), an “average MI-self, below average MI-other and low PTSD class” (10%), and an “above average MI and above average PTSD class” (50%). Classes differed in terms of general psychopathology and depression, but not age and gender.

Conclusion

We identified three classes, each displaying distinct manifestations of MI appraisals and PTSD symptoms. This highlights the importance of assessing and recognizing MI appraisals within treatment-seeking refugees, enabling customized treatment interventions for both MI and PTSD.

Keywords

Moral injury, cognitive appraisals, refugees, PTSD, LPA

1. INTRODUCTION

Refugees flee from countries due to war, violence, or persecution because of their political, religious, or social identity and are often exposed to potentially traumatic events (PTEs). PTEs that refugees may encounter, such as rape and torture, can elicit typical fear-responses like avoidance and intrusions (Foa et al., 1995; McFarlane, 1992), as well as responses that lead to distortions in one's moral beliefs and identity (Nickerson et al., 2014; Silove, 1999). Events that may violate moral beliefs are referred to as potentially morally injurious events (PMIEs). PMIEs can result in moral stress and ultimately moral injury (MI) (Litz et al., 2009). Consistent with the working definition of MI (Litz et al., 2009), PMIEs are events that are appraised as moral transgressions enacted by oneself (e.g., MI-self) or by others (e.g., MI-other) (Currier et al., 2018; Hoffman et al., 2019; Jordan et al., 2017; Nash et al., 2013).

While most research on MI has traditionally focused on military contexts, an increasing number of studies indicate that MI is also highly relevant to refugee populations. Refugees often live in a context of war and violence and face transgressions that violate religious, political, or cultural moral values (Hoffman et al., 2018), and, therefore, the construct MI seems highly relevant for this population in addition to posttraumatic stress (PTS). MI appraisals are associated with PTS, anger, and depression (Hoffman et al., 2018). Moreover, longitudinal research indicated strong associations between MI appraisals and poor psychological outcomes in terms of depression and PTS in a refugee sample (Nickerson et al., 2020). In a recent qualitative study in a clinical group of traumatized refugees, Mooren et al., (2022) found that clinicians identified PMIEs such as leaving family members behind and putting them at risk of persecution, failing to prevent other people from being harmed, and not helping people in need as the most important moral transgressions. Other studies identified transgressions such as witnessing how important others are harmed while failing to act (Brough et al., 2003), forced betrayal of others (Silove, 1999), failing to resist during rape (Miller, 2009), and being a witness of a murder and failing to act (Silove et al., 2009).

Despite the distinction between transgressions by oneself and others, some PMIEs could be appraised as both self- and other-transgressions. For example, watching how family members are attacked can be appraised as a moral transgression by oneself (MI-self) when one blames oneself for not having stopped the perpetrator, but also as a moral transgression by others (MI-other) as the perpetrator inflicts the violence, or a combination of both. This suggests that MI-self and MI-other appraisals can occur separately and simultaneously. Several studies investigated the relationship of MI-self and MI-other appraisals with psychopathology in refugees. Overall, findings suggested

that both MI-self appraisals and MI-other appraisals were associated with symptoms of depression and anger whereas MI-other but not MI-self appraisals were related to elevated PTSD symptoms (Hoffman et al., 2018; Nickerson et al., 2014; Nickerson et al., 2015). In contrast to MI-other appraisals, MI-self appraisals were associated with lower re-experiencing and there was no clear association with avoidance, alterations in arousal and reactivity, and negative alterations in cognitions and mood symptoms (Hoffman et al., 2018). Research so far has primarily focused on military samples and there is limited empirical research exploring the co-occurrence of PTSD and MI and individual differences in how refugees respond to PMIEs. Additionally, research efforts aimed at differentiating profiles based on cognitive appraisals, particularly the distinction between MI-self and MI-other appraisals, remain notably limited. Yet, it is important to enhance knowledge about the co-occurrence of MI-appraisals and PTSD symptoms in refugees, as this may provide valuable insights to improve treatment interventions for trauma-related mental illness. For some individuals, trauma-focused therapy may be sufficient, especially those who present high severity of PTSD symptoms without concurrent MI appraisals. However, individuals reporting both PTSD symptoms and distress stemming from moral dilemmas may require interventions explicitly designed to address MI to attain the most favourable treatment outcomes.

Several studies have used latent profile analysis (LPA) to identify subgroups of individuals. LPA is a person-centred statistical method that enables the study of population variation by categorizing individuals into latent profiles based on continuous indicators of symptoms (Collins & Lanza, 2009). One study in refugees identified three different classes of MI appraisals: No-MI appraisals, MI-other appraisals, and both MI-self and MI-other appraisals, and these classes differed in terms of psychological outcomes (Hoffman et al., 2019). However, to our knowledge, there are no studies in refugees that included PTSD symptoms in addition to MI appraisals to identify classes.

Accordingly, the primary objective of the present study was to identify classes among treatment-seeking refugees that differ in terms of MI appraisals and PTSD symptoms, using LPA. Based on research in military people and police officers (e.g., Mensink et al., 2022), we expected that different classes would emerge, including a class with below average MI appraisals and above average PTSD symptoms, a class with above average levels of MI appraisals and below average PTSD symptoms, a class with above average levels of MI appraisals (MI-self appraisals or MI-other or a combination of both) and above average PTSD symptoms, and a class with below average levels

MI appraisals and below average PTSD symptoms. Our second objective was to explore differences between emerging classes in terms of age, gender, general psychopathology, and depression. Based on the literature, we expected classes to differ in terms of general psychopathology and depression but not age and gender (Mensink et al., 2022). More specifically, it was anticipated that individuals included in the class with elevated PTSD symptoms and MI appraisals would report the highest levels of general psychopathology and depression.

2. METHOD

2.1 Participants and procedure

In total, 156 refugees and asylum seekers, all referred for treatment to ARQ Centrum'45, were invited for an intake assessment from January 2022 – June 2023. ARQ Centrum'45 is a specialized centre for diagnostics and treatment of patients with complex psychotrauma complaints. Before the assessment procedure, patients were provided an information letter and were asked to provide informed consent to use their data pseudo-anonymously for research purposes. From the total group of 156 refugees, 136 did so. During the assessment procedure, multiple questionnaires were administered to measure PTSD severity, general psychopathology, and MI appraisals. Inclusion criteria for the current study were (a) aged at least 18 years, (b) having an asylum-seekers or refugee status, and (c) being able to complete the questionnaires in one of the following languages: Dutch, English, French, Servo-Croatian, Arabic or Farsi. There were no exclusion criteria. The research was approved by the Faculty Ethics Review Committee (FETC) of Utrecht University under file number 20-297.

2.2 Measures

All questionnaires were available in the aforementioned languages. For the PTSD Checklist for DSM-5 (PCL-5; Wortmann et al., 2016), the Patient Health Questionnaire-9 (PHQ-9; Spitzer et al., 1999), and the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), official translations were available. The Moral Injury Appraisals Scale (MIAS; Hoffman et al., 2018) was translated through the official translation procedure according to the WHO guidelines (n.d.). First, the MIAS was translated from English to the relevant language by official translators with a psychological background and was then translated back by official bilingual translators without a psychological background. Discrepancies were discussed in consensus groups, after which the final version was used in this study.

2.2.1 MIAS

The MIAS is a 9-item questionnaire (Hoffman et al., 2018) measuring cognitive appraisals of MI. It has two subscales: MI-self and MI-other. MI-self appraisals refer to being troubled by moral transgressions of oneself (e.g., "I am troubled because I did things that were morally wrong"). MI-other appraisals refer to being troubled by moral violations of others (e.g., "I am troubled by morally wrong things done by other people"). Respondents are instructed to indicate to what extent they agree with the statements on a 4-point Likert Scale, ranging from 1 = "strongly disagree" to 4 = "strongly agree". Internal consistency of this instrument in our sample was good (.88 for the full scale and the MI-self and MI-other items; alphas were .94 and .85, respectively).

2.2.2 PCL-5

The PCL-5 measures PTSD symptoms based on the DSM-5 (Wortmann et al., 2016) and differentiates four clusters of PTSD; re-experiencing (criterion B), avoidance (criterion C), negative alterations in cognition and mood (criterion D), and hyperarousal (criterion E). It consists of 20 items and participants are asked to rate the presence of PTSD symptoms during the past month on a 5-point Likert scale (0 = "not at all" to 4 = "extremely"). The total score indicates PTSD symptom severity (0–80). The psychometric properties of the questionnaire are adequate, and scores higher than 33 indicate the presence of PTSD (Blevins et al., 2015; Krüger-Gottschalk et al., 2017; Weathers et al., 2018). In our study, Cronbach's α of the total scale was .93, and of the four symptom clusters, these were .89, .86, .86, and .67, respectively.

2.2.3 BSI-53

General psychopathology was measured with the BSI (Derogatis & Melisaratos, 1983). This self-report questionnaire consists of 53 items. Respondents are instructed to rate the presence of psychological symptoms during the past seven days on a 5-point Likert scale (0 = "totally disagree" to 4 = "totally agree"). This instrument has nine subscales (e.g., depressive mood, interpersonal sensitivity), and its total score (used in the present study) provides an index of general psychopathology. The psychometric properties of the BSI are good (de Beurs & Zitman, 2006). In the present study's sample, Cronbach's α was .96.

2.2.4 PHQ-9

The PHQ-9 (Spitzer et al., 1999) is a 9-item self-report questionnaire measuring depressive symptoms. Participants are asked to rate how often they experienced depressive symptoms (e.g., "Little interest or pleasure in doing things") for the past two weeks on a 4-point Likert scale (0 = "not at all" to 3 = "almost every day"). The total score indicates the severity of the depressive symptoms. The PHQ-9 has good psychometric properties (Kroenke et al., 2001). In the current sample, Cronbach's α was .83.

2.3 Statistical analysis

LPA was conducted to identify latent subgroups of refugees based on their self-reported PTSD symptoms and MI-appraisals. In this study, we used the subscales of the PCL-5 (e.g., re-experiencing, avoidance, negative alterations in cognition and mood, and hyperarousal) and the two subscales of the MIAS (MI-self and MI-other) in the analyses. To obtain a similar scale for each instrument, all scores were transformed into z-scores. Analyses were conducted in Mplus 8.6 (Muthén & Muthén, 2009). The one-class model was estimated first, followed by models with increasing numbers of classes. Model selection was based on fit statistics, interpretability, and parsimony. To avoid local likelihood maxima in BLRT, 500 bootstrap samples were requested with 50 sets of starting values in the first and 20 in each bootstrap sample. The following fit statistics criteria were used to select the optimal class solution: (a) lower values of the Akaike's information criterion (AIC) and Bayesian information criterion (BIC), (b) a *p*-value of .05 for the Lo-Mendell-Rubin likelihood ratio test (LMR LRT; indicating that adding a class yields a significantly better-fitting model compared to a model with a class less), and (c) higher entropy values (with values closer to 1 indicating better class separation and values) (Nylund et al., 2007). Lastly, it was investigated whether the classes were different in terms of age, gender, general psychopathology, and depression. This was tested by conducting a series of four independent multinomial logistic regression models in Mplus using the three-step procedure (Asparouhov & Muthén, 2014) with age, gender, general psychopathology, and depression consecutively included in separate models. In addition, gender differences between MI-self and MI-other appraisals were analysed with a one-way ANOVA using SPSS version 27. The missing data analysis indicated less than 4% missing data for the MIAS, BSI, and PHQ, and 6% missing data for the PCL-5. For the LPA, missing data were handled with full information maximum likelihood (FIML) by default. For the regression analysis, the missing data were handled with listwise deletion.

3. RESULTS

3.1 Descriptives

The sample consisted of 94 men (69%) and 42 women (31%). The average age was 43.7 years (*SD* = 12.2, range 19–66 years). The questionnaires were completed in the following languages: Dutch (55%), English (19%), Arabic (15%), and Farsi (11%). Furthermore, the region of origin was Africa in 11% of the refugees, 15% came from Europe, 64% of the Eastern Mediterranean region (e.g., Turkey, Syria, Lebanon, Egypt), and 4% of Southeast Asia. The majority of patients (*N* = 100, 74%) met the criteria for PTSD according to the PCL-5, and the average PTSD severity in our sample was

relatively high (M = 53.4, SD = 16.3). There were no gender differences with respect to MI-self appraisals, $F(1, 134) < 1$, $p = .867$, and MI-other appraisals, $F(1, 134) < 1$, $p = .528$. All patient characteristics in this sample are described in Table 1.

3.2 Latent Profile Analysis

Table 2 shows the fit indices for the one to five class solutions. Based on fit statistics, interpretability, and parsimony of the class solutions, the three-class solution was retained. Although the BIC value decreased and entropy increased from the one-class to five-class solution, the LMR LRT indicated that adding a fourth class did not result in a significantly better-fitting model compared to the three-class model. Figure 1 shows the classes identified in the three-class solution and displays the mean z-scores for each construct. The first class included 52 participants (39%) with below average levels of MI appraisals (both MI-self and MI-other) and below average levels of PTSD symptoms (on all clusters). This class was called the "below average MI and below average PTSD class". The second class included 13 participants (10%) evidencing average MI-self appraisals, below average MI-other appraisals, and relatively low levels of PTSD symptoms (on all clusters). This class was labelled as the "average MI-self, below average MI-other and low PTSD class". The third and largest class included 71 participants (50%), evidencing above average scores on MI-appraisals

Table 1 Descriptive statistics of demographic variables and clinical characteristics (N = 136)

Characteristics	*N*	%	Mean	SD	Range
Age			43.73	12.2	19 – 66
Gender					
Male	94	69.1%			
Female	42	30.9%			
Asylum status					
Permit resident	103	75.7%			
Asylum seeker	26	19.1%			
Undocumented	3	2.2%			
Unknown	4	2.9%			
Moral injury appraisals (MIAS)			25.6	7.0	9 – 36
PTSD severity (PCL-5)			53.4	16.3	4 – 79
General psychopathology (BSI)			2.5	0.7	0.3 – 3.8
Depression (PHQ-9)	132		20.6	6.0	0 – 30

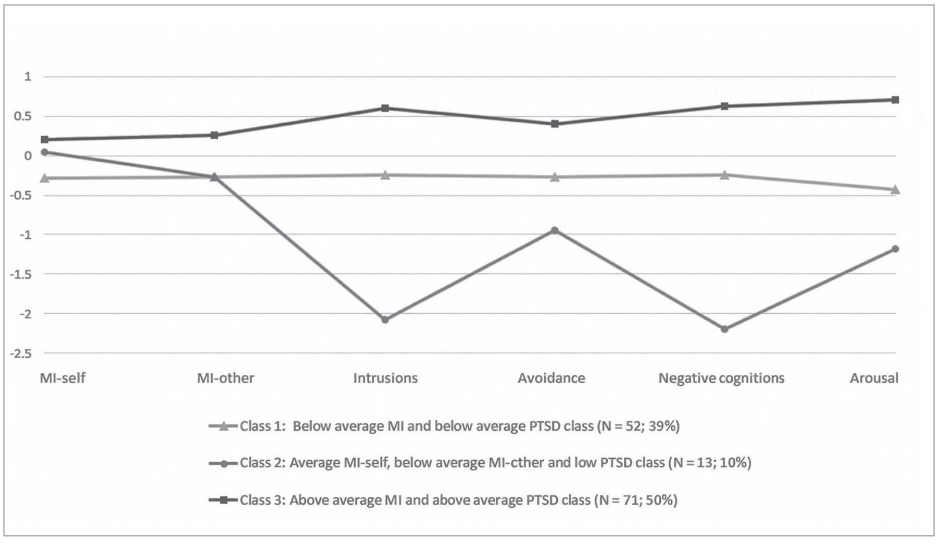
Note: PTSD = Posttraumatic Stress Disorder; MIAS = Moral Injury Appraisals Scale; PCL-5 = PTSD Checklist for DSM-5; BSI = Brief Symptom Inventory; PHQ-9 = Patient Health Questionnaire-9.

(both MI-self and MI-other) and above average levels of PTSD symptoms (on all clusters), and was labelled as the "above average MI and above average PTSD class".

3.3 Correlates of class membership

Table 3 represents the descriptive statistics of the variables age, gender, general psychopathology, and depression for the three classes. Results of the multinomial logistic regression analyses are presented in Table 4. Participants with higher levels of general psychopathology were significantly more likely to be included in the "above average MI and above average PTSD class" compared to the "below average MI and below average PTSD class" and the "average MI-self, below average MI-other and low PTSD class". Also, participants with higher levels of general psychopathology were significantly more likely to be included in the "average MI-self, below average MI-other, and low PTSD class" compared to the "below average MI and below average PTSD class". Furthermore, participants with higher levels of depression were more likely to be included in the "above average MI and above average PTSD class" than the "average MI-self, below average MI-other, and low PTSD class". Also, participants with higher levels of depression were more likely to be included in the "average MI-self, below average MI-other and low PTSD class" than in the "below average MI and below average PTSD class". There were no significant differences between the classes in terms of age and gender.

Figure 1 Symptom endorsement probability for the three-class solution



Note: PTSD = Posttraumatic Stress Disorder; MI = Moral Injury.

Table 2 Goodness-of-fit indices for one- to five-class solutions

Model	Log-likelihood	AIC	BIC	SSBIC	B-LRT	*p*-value	LMR-A	*p*- value	Entropy
1 class	-1100.925	2225.850	2260.802	2222.840	-	-	-	-	-
2 classes	-1004.358	2046.715	2102.056	2041.950	193.134	<.0001	187.677	.0001	0.944
3 classes	-959.420	1970.839	2046.568	1964.318	89.876	<.0001	87.337	.0461	0.829
4 classes	-940.201	1946.402	2042.520	1938.126	38.437	<.0001	37.351	.3563	0.875
5 classes	-920.881	1921.763	2038.269	1911.731	38.639	<.0001	37.547	.1667	0.916

Note: AIC = Akaike information criterion; BIC = Bayesian information criterion; SS-BIC = sample size-adjusted Bayesian information criterion; LMR-A = Lo-Mendell-Rubin-likelihood ratio adjusted; B-LRT = bootstrap-likelihood ratio test of model fit.

Table 3 Descriptive statistics for the three-class solution

Measure	Below average MI and below average PTSD class				Average MI-self, below average MI-other, and low PTSD class				Above average MI and PTSD class			
	N (%)	*M*	*SD*	*M* z-score	*N* (%)	*M*	*SD*	*M* z-score	*N* (%)	*M*	*SD*	*M* z-score
Age		44.1	13.9			41.4	0.51			44.4	11.1	
Gender	52				13				71			
Female	13 (25.0)				5 (38.5)				24 (33.8)			
Male	39 (75.0)				8 (61.5)				47 (66.2)			
Moral injury appraisals		22.9	6.7	-0.4		25.6	9.6	-76.9		27.6	6.1	0.3
MI-Self		11.1	5.1	-0.3		13.2	6.4	-76.9		13.8	5.4	0.2
MI-Other		11.8	3.2	-0.4		12.4	4.1	-76.8		13.8	2.4	0.3
PTSD severity (PCL-5)		47.2	5.6	-77.2		16.5	8.4	-2.3		65.3	5.5	-69.7
General psychopathology (BSI)		2.1	0.5	-192.5		1.2	0.7	-308.6		2.9	0.5	-182.4
Depression (PHQ-9)		18.6	5.3	-19.5		14.2	10.2	-77.8		23.2	3.9	-27.7

Note: PTSD = Posttraumatic Stress Disorder; MI = Moral Injury; MIAS = Moral Injury Appraisals Scale; PCL-5 = PTSD Checklist for DSM-5; BSI = Brief Symptom Inventory; PHQ-9 = Patient Health Questionnaire-9.

Table 4 Summary of multinomial regression analyses with age, gender, depression, and general psychopathology predicting class-membership

	Reference profile											
	Class 1: Below average MI and PTSD class (*N* = 52; 39%)				Class 2: Average MI-self, below average MI- other, and low PTSD class (*N* = 13; 10%)				Class 3: Above average MI and PTSD class (*N* = 71; 50%)			
Comparison profile	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**
Class 2: Average MI-self, below average MI- other, and low PTSD class												
Age	0.037	0.024	1.536	.124								
Gender	-0.311	0.647	-0.481	.631								
General psychopathology	2.269	0.753	3.015	.003								
Depression	1.843	0.509	3.623	.000								
Class 3: Above average MI and PTSD class												
Age	0.039	0.022	1.792	.073	0.002	0.016	0.149	.881				
Gender	-0.196	0.623	-0.315	.753	0.115	0.416	0.275	.783				
General psychopathology	5.702	1.174	4.855	.000	3.433	0.916	3.747	.000				
Depression	0.599	0.396	1.514	.130	-1.244	0.256	-4.853	.000				

Note: PTSD = Posttraumatic Stress Disorder; MI = Moral Injury.

4. DISCUSSION

The primary objective of this study was to identify classes of MI appraisals and PTSD symptoms among refugees exposed to PTEs. The LPA identified three classes with the "above average MI and above average PTSD class" as the largest class, followed by the "below average MI and below average PTSD class", and the "average MI-self, below average MI-other and low PTSD class" as the smallest class. These results indicate that MI appraisals (in co-occurrence with PTSD or not) are relatively common in refugees. This is in line with other studies on MI appraisals in refugees (Hoffman et al., 2019; Nickerson et al., 2018). Also, these results suggest that self-directed and other-directed MI appraisals are distinct constructs, which was also supported in prior research of MI appraisals in refugees (Hoffman et al., 2018; Hoffman et al., 2019; Nickerson et al., 2020; Nickerson et al., 2018). The LPA did not point to the presence of a class of refugees with high (or above average) levels of PTSD symptoms and low (or below average) levels of MI appraisals. This suggests that, in this sample, increased PTSD symptoms always occur together with MI appraisals, whereas MI appraisals can be reported in the absence of severe PTSD symptoms. One earlier study among refugees identified a MI-other class and a MI-other and MI-self class, but not an MI-self class (Hoffman et al., 2019). However, in our study, we identified a class with average levels of MI-self appraisals and below average levels of MI-other appraisals but not a separate MI-other appraisals class. As such, our results could be more in line with studies in military populations, evidencing a high prevalence of MI-self transgressions (Held et al., 2017). Although we had no data on the professional background of participants, it might be possible that our sample included a large number of military personnel who were active in combat in their home country and, therefore, might be more similar to the military populations described in other studies.

We also investigated whether age, gender, general psychopathology, and depression were associated with class membership. Our findings showed that there were significant differences between classes in terms of general psychopathology and depression, but not age and gender. Specifically, our results suggested that the co-occurrence of MI- self and MI-other appraisals with PTSD symptoms coincided with relatively higher levels of general psychopathology and depression. This is in line with other studies in refugees (Hoffman et al., 2019) and military groups (Currier et al., 2015; Nash & Litz, 2013; Nash et al., 2013) showing that experiencing MI adds additional burden on top of experiencing PTSD in terms of concurrent psychopathology. Also, it appears that the class with both MI-self and MI-other appraisals (in addition to PTSD symptoms) evidenced higher levels of general psychopathology and depression in comparison to the class with above average MI-self appraisals, below average

MI-other appraisals but low PTSD symptoms. This could indicate that the combination of MI-other appraisals and MI-self appraisals generates more psychological distress than MI-self appraisals alone. It is hypothesized that self-directed transgressions could be associated with higher levels of control compared to other-directed transgressions, mitigating psychological distress (Nickerson et al., 2018). Yet, more research is needed to replicate these results in other refugee populations to enhance knowledge about the degree to which MI-self and MI-other appraisals are differentially related to psychological problems.

Strengths of the present study include the examination of both MI appraisals and PTSD symptoms in a refugee sample and the use of a person-centred approach. Still, the findings need to be interpreted in light of several limitations. First, the sample consisted of refugees with relatively high levels of psychopathology, and, therefore, it is uncertain to what extent the findings are generalizable to other groups of refugees (with fewer psychological complaints). For instance, the average PTSD severity score for the "below average MI and below average PTSD class" was still relatively high in comparison to the cutoff score for PTSD (≥ 33). Replication of the findings in other samples is needed.

Second, this study lacked measures of PTEs and PMIEs. Therefore, no insight can be given into the relationship between the nature of the events that participants encountered and the symptoms they developed afterwards. More research is needed to examine the extent to which the severity and co-occurrence of MI and PTSD differ as a function of the nature of PMIEs and PTEs that people experienced. For example, PMIEs about active combat could be associated with more MI-self transgressions than the traumatic events civilians are exposed to. Also, the relation between trauma load and psychological symptoms for the different classes could be investigated.

Third, this study used the MIAS, which only measures cognitive appraisals, and furthermore, this study did not include measures of emotions associated with MI, such as shame, guilt, and anger. Including these emotions in future studies is relevant to understanding the interplay between PTSD symptoms, MI-appraisals, and emotional processes concerning MI. Additionally, it would be interesting to examine the potential differences between MI-self and MI-other appraisals in terms of their relationships with various emotional outcomes. For example, there is some evidence that MI-self transgressions are more associated with internalizing emotions such as shame and guilt, whereas MI-other transgressions are more associated with externalizing emotions such as anger and resentment (Litz & Kerig, 2019).

Fourth, differences between MI-self and MI-other appraisals may be influenced by culture and context. The way individuals interpret events as self-directed or other-directed may depend on various factors such as gender roles, cultural norms within ethnic groups, religious beliefs, or combat experiences. Consequently, this could result in different psychopathological outcomes across different contexts. For example, research shows that women tend to experience PMIEs in different circumstances than men, leading them to more frequently report witnessing- and betrayal-based PMIEs (Maguen et al., 2020). Additionally, evidence suggests that MI-other appraisals are linked to post-migration challenges, such as financial instability, experiences of discrimination, and the process of securing residency in the host country (Nickerson et al., 2018). It is recommended to investigate how the latent classes are associated with emotional processes as well.

Lastly, our sample was relatively small, leading to possible reduced statistical power and increased risk of type II errors. Also, it might have been more difficult to identify additional classes in the LPA and to detect possible gender differences with a smaller sample size. Furthermore, to gain a clearer understanding of the overlap between these events and their psychological effects, future research should incorporate both PMIEs and PTEs in its assessments. Specifically, future studies could investigate the relationship between class membership and the type of event experienced. This could help identify whether certain types of events are more likely to lead to specific patterns of MI or PTSD symptoms within distinct populations.

To our knowledge, this is the first study that examined profiles of MI appraisals and PTSD symptoms in a treatment-seeking refugee population. The results highlight the need to draw attention to MI in addition to PTSD symptoms in this population. In our sample, the majority of the treatment-seeking refugees reported stress associated with both PTSD symptoms and MI appraisals. An important clinical implication of our findings may be that one should be attentive to individuals who might need additional treatment interventions addressing PMIEs or MI. Specifically, our findings suggest that assessment and screening of psychological symptoms in this group should not solely focus on PTSD and other psychopathology (e.g., depression) but on MI appraisals as well. In terms of treatment interventions, there are several new approaches that might be promising. For instance, the Brief Eclectic Psychotherapy for Moral Trauma (BEP-MT; de la Rie et al., 2021), the Trauma-Informed Guilt Reduction

Therapy (Norman, 2022), and an online supportive treatment module for MI (Ter Heide et al., 2022). These interventions focus on changing distorted beliefs of the PMIE and mitigating emotions of the PMIE (e.g., shame, guilt). Providing treatment interventions in addition to trauma-focused therapies is important to improve mental well-being in treatment-seeking traumatized refugees.

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Author contributions

NM: conceptualization, methodology, formal analysis, writing – original draft preparation. PB: writing – review and editing, supervision. AvB: data collection, analysis, writing. SdlR: writing – review and editing, supervision.

Data availability statement

The data are not publicly available due to their containing information that could compromise the privacy of the participants. Also, participants were not asked to give consent to save their data in a public data repository.

Disclosure statement

No potential conflict of interest was reported by the authors.

Ethics approval statement

The study was approved by the ethics committee of Faculty Ethics Review Committee (FETC) of Utrecht University under file number 20-297.

Transparency and openness

This study was not preregistered. We reported how we determined our sample size, all data exclusions, and all measures in the study.

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4

CHAPTER 4

Moral injury appraisals and posttraumatic stress symptoms in trauma-exposed police officers: a latent class analysis

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ABSTRACT

Background

Police officers encounter various potentially traumatic events (PTEs) and may be compelled to engage in actions that contradict their moral codes. Consequently, they are at risk of developing symptoms of Posttraumatic Stress Disorder (PTSD), but also moral stress or moral injury (MI). To date, MI in police officers has received limited attention. The present study sought to identify classes of MI appraisals and PTSD symptoms among police officers exposed to PTEs, while also investigating potential clinical differences between these classes.

Method

For this study, 421 trauma-exposed police officers were assessed on demographics and several clinical measurements, including MI appraisals (self-directed and other-directed), PTSD severity, and general psychopathology. Latent class and regression analyses were conducted to examine the presence of different classes among trauma-exposed police officers and class differentiation in terms of demographics, general psychopathology, PTSD severity, mistrust, guilt, self-punishment, and feelings of worthlessness.

Results

The following five classes were identified: (1) a “Low MI, high PTSD class” (28%), (2) a “High MI, low PTSD class” (11%), (3) a “High MI, high PTSD class” (17%), (4) a “Low MI, low PTSD class” (16%), and (5) a “High MI-other, high PTSD class” (27%). There were significant differences between the classes in terms of age, general psychopathology, PTSD severity, mistrust, guilt, and self-punishment, but no differences for gender and feelings of worthlessness.

Conclusion

In conclusion, we identified five classes, each exhibiting unique patterns of cognitive MI appraisals and PTSD symptoms. This underscores the criticality of measuring and identifying MI in this particular group, as it allows for tailored treatment interventions.

Keywords

Moral injury, PTSD, police officers, trauma, cognitive appraisals, latent class analysis

1. INTRODUCTION

Repeated exposure to work-related potentially traumatic events (PTEs) is part of the reality of many police officers. Physical violence, handling human remains, responding to abused children, motor vehicle crashes, and witnessing violent deaths are described as critical incidents in the work of police officers (Frankfurt et al., 2017; Weiss et al., 2010). Besides the emotional and physical challenges, police officers may also face moral decisions that potentially transgress important moral codes; examples are situations requiring decisions about the use of excessive force or violence against civilians or perpetrators, which may result in severe injury or even death (Komarovskaya et al., 2011). Facing these critical incidents may not only result in traumatic distress but also in moral distress (Blumberg et al., 2020) and ultimately result in moral injury (MI). Moral injury refers to the psychological impact after "perpetrating, failing to prevent, or bearing witness to actions that transgress deeply held moral beliefs and expectations" (Litz et al., 2009, p. 398).

Different potentially morally injurious events (PMIEs) can result in moral distress or MI in police officers. Examples are situations in which their course of action deviates from their moral values (e.g., being unable to assist individuals in need) or in which they witness colleagues engaging in morally inappropriate behaviour (Blumberg et al., 2020). Also, making mistakes during duty and experiencing conflict between supervisors' orders and personal beliefs can induce moral distress (Blumberg et al., 2020). Research showed that making a mistake that resulted in the death of a colleague was considered the most stressful PTE commonly experienced by officers (Chopko et al., 2015; Weiss et al., 2010). In police officers, exposure to PMIEs is significantly related to compassion fatigue, symptoms of Posttraumatic Stress Disorder (PTSD) (Papazoglou et al., 2020), and other mental disorders (e.g., major depressive disorder and panic disorder) (Andersen & Papazoglou, 2015).

Notably, the appraisal of a PMIE and the violation of moral values are heavily influenced by cultural, contextual, and personal factors (Jinkerson, 2016). As a result, substantial variations exist among individuals in their responses to PMIEs and the subsequent impact on their mental health. Cognitive appraisals assigned to PMIEs play a crucial role in shaping the experience of traumatic events in general (Ehlers & Clark, 2000) and PMIEs in particular (Hoffman et al., 2018). PMIEs can be cognitively appraised in at least three ways: one can be troubled by the immoral actions of others (MI-other appraisals), the immoral actions of oneself (MI-self appraisals), or both (Hoffman et al., 2018; Hoffman et al., 2019). These diverse cognitive appraisals may yield different psychological reactions. For instance, increased MI-other appraisals

are associated with elevated PTSD symptoms, whereas increased MI-self appraisals were found to be associated with less intrusive memories (Currier, Foster, et al., 2019; Hoffman et al., 2018). To explain this latter finding, it has been hypothesised that MI-self appraisals could be associated with a higher perception of control, reducing fear and subsequent PTSD symptoms (Hoffman et al., 2018). Both MI-self and MI-other appraisals were associated with feelings of depression in several studies (Bryan et al., 2016; Currier, Foster, et al., 2019; Hoffman et al., 2018). Furthermore, studies showed that MI-self appraisals are related to internalising emotions such as shame, guilt, and self-blame, whereas MI-other appraisals are associated with externalising symptoms such as anger and frustration (Litz et al., 2018; Litz & Kerig, 2019; Schorr et al., 2018; Stein et al., 2012).

To date, limited research has explored individual differences in how police officers respond to PMIEs. Several studies have used latent class analysis (LCA) to identify subgroups or classes. LCA is a person-centred statistical method that allows for the examination of population heterogeneity by categorising individuals into latent classes based on binary indicators of symptoms (Collins & Lanza., 2003). There are a few studies that applied LCA to data from occupational groups that are prone to PTSD or MI. For instance, one study on health and social care workers examined the exposure to PMIEs and identified three classes in this group: a 'high exposure' class, a 'betrayal-only' class, and a 'minimal exposure' class (Zerach & Levi-Belz, 2022). Another study on American veterans identified four classes based on their PMIE response patterns on the Moral Injury Events Scale (Nash et al., 2013): (1) high on all PMIEs, (2) witnessed transgressions, (3) troubled by failure to act, and (4) moderate on all PMIEs (Saba et al., 2022). As far as we are concerned, there is one study that identified different classes of police officers (and veterans) that included MI and showed different patterns of PTSD and symptoms associated with MI (e.g., shame, guilt, self-harm), although MI was not measured as such (Mensink et al., 2022).

This suggests that, among police officers exposed to PMIEs, subgroups exist with varying combinations of symptoms of traumatic stress and MI-related phenomena. Aside from the aforementioned study, there is a scarcity of research examining the heterogeneity in PTSD symptoms and MI appraisals among police officers. Yet, further investigating this issue is clinically relevant as it can ultimately improve treatment options for this vulnerable group. That is, trauma-focused therapy may suffice for individuals presenting with high severity of PTSD symptoms without concurrent experiences of MI symptoms. On the other hand, individuals reporting PTSD symptoms combined with distress related to moral dilemmas may need additional interventions targeting MI and associated emotions of shame and guilt (Norman, 2022).

Accordingly, the primary objective of the present study was to examine the presence of subgroups among trauma-exposed police officers that differ in terms of PTSD and MI appraisals using LCA. Based on earlier studies (Mensink et al., 2022) we expected to find different classes of individuals; a class with individuals endorsing only PTSD symptoms, a class with individuals endorsing MI appraisals with no PTSD symptoms, a class with individuals endorsing MI appraisals (either MI-other or MI-self appraisals or a combination of both) and PTSD symptoms, and a class with low levels of PTSD symptoms and low levels of MI appraisals.

Our second objective was to explore differences between emerging classes in terms of age, gender, general psychopathology, and PTSD severity. Also, it was examined if the classes differed in terms of the experience of feelings of worthlessness, mistrust, guilt, and self-punishment. We focused on these feelings, considering they are related to MI symptoms in police officers (Mensink et al., 2022). Based on the literature, we expected to find differences in the presence of PTSD severity and psychopathology, but no differences in terms of age or gender. More specifically, it was expected that individuals included in the class with elevated PTSD and MI appraisals would report the highest levels of PTSD symptoms and general psychopathology.

Furthermore, so far, no studies have examined class differences in terms of worthlessness, guilt, mistrust of others, and self-punishment; therefore, this was examined exploratively. Yet, self-directed transgressions were associated with more feelings of guilt and shame in comparison to other-transgressions (Schorr et al., 2018; Stein et al., 2012). Therefore, it was expected that individuals in classes with relatively high endorsement of MI-self appraisals (with low or high levels of PTSD symptoms) would evidence higher levels of guilt, worthlessness, and self-punishment in comparison to classes with lower levels of MI-self appraisals. Also, it was expected that individuals in classes with relatively high endorsement of MI-other appraisals (with low or high levels of PTSD symptoms) would evidence higher scores on mistrust of others in comparison to classes with lower levels of MI-other appraisals.

2. METHOD

2.1 Participants and procedure

This study was conducted at ARQ Diagnostic Centrum (i.e., ARQ National Psychotrauma Centre), a Dutch centre for diagnostic assessment of people with trauma-related psychopathology. The assessment procedure includes administration of two clinician-rated interviews and self-report measures. Inclusion criteria for this

study were: a) over 18 years of age, b) profession of (executive) police officer, and c) meeting the A-criterion for PTSD according to the CAPS-5. This study included 421 police officers who were subjected to assessment between August 2020 and May 2022. Data for this study were primarily collected for clinical purposes as part of the routine screening and assessment procedure. Subsequently, de-identified data were archived for scientific research purposes. All participants in this study were informed about the procedure and provided written informed consent for the utilisation of their data for scientific purposes. At the assessment, in addition to the self-report questionnaires BSI and MIAS, the CAPS-5 interview was administered. This interview consisted of two parts: assessment of the traumatic event (criterion A) and the PTSD symptoms (criterion B–E). The interview was administered by trained psychologists. We examined the nature of the traumatic events by categorising the descriptions of the A-criterion items. Clinicians conducted the CAPS-5 interview, and therefore the descriptions in the participant files varied from a few words to an extended description of the event.

Because of the large variation between clinicians in describing the A-criterion, the categorisation was not used for further analyses. The descriptions of the events were analysed using the steps of Thematic Analysis (TA) (Braun & Clarke, 2021). First, one researcher (NM) read the descriptions, then summarised each description in a maximum of five words (e.g., “fire in house” or “murder of a child”) and added this to a separate file. In case a participant reported multiple events, each event was summarised separately. Second, two researchers (NM and a research assistant) independently screened the summarised descriptions of the events and wrote down the common category that assembled the events. For instance, “fire in the house” was categorised as “fire” and “murder of a child” as “murder”. Finally, the themes were discussed between NM and the research assistant, and a coherent and logical categorisation was made. The inter-rater reliability between the researchers was good (Cohen’s Kappa = .95, $p < .001$).

2.2 Measures

2.2.1 PTSD symptoms

The Clinician-Administered PTSD scale for DSM-5 (CAPS-5) is a 30-item structured diagnostic interview that measures the number of PTSD symptoms and PTSD severity (Weathers et al., 2018). In the first part of the interview, the traumatic event is assessed to check if the event meets the A-Criterion. The remaining items (Criteria B-E) are rated on a 5-point severity scale ranging from 0 (absent) to 4 (incapacitating). A sample item of criterion B is: “In the past month, have you had any unwanted memories of

(event that meets the A-criterion) while you were awake, so not counting dreams?". And follow-up questions were: "How much do these memories bother you?" and "How often have you had these memories in the past month?". The total score ranges between 0 – 80, with higher scores indicating more PTSD severity. The psychometric qualities of the CAPS-5 are good. Strong reliability and validity have been found in trauma-exposed samples (Boeschoten et al., 2018; Müller-Engelmann et al., 2020; Weathers et al., 2018). In the current sample, the total severity score demonstrated high internal consistency (α = .88).

2.2.2 Moral Injury Appraisals

The Moral Injury Appraisals Scale (MIAS) is a 9-item questionnaire that measures distress as a result of appraising immoral behaviours enacted by oneself with 4 items (MI-self) (e.g., "I am troubled because I did things that were morally wrong") and others with 5 items (MI-Other) (e.g., "I am troubled by morally wrong things done by other people"). Items are scored on a 4-point Likert Scale (1 = strongly disagree to 4 = strongly agree). The internal consistency of this instrument in our sample was excellent (for the full scale, the alpha was .90, and for MI-other and MI-self items, alphas were .90 and .92, respectively).

2.2.3 General psychopathology

The Brief Symptom Inventory (BSI) is a 53-item self-report questionnaire (Derogatis & Melisaratos, 1983) that measures symptoms of psychological stress on nine subscales: depressive mood, interpersonal sensitivity, hostility, somatisation, psychoticism, suspicion, phobic fear, cognitive problems, and anxiety. Participants were asked to rate how much distress they experienced as a result of psychological symptoms during the past seven days on a five-point Likert scale (0 = "not at all" to 4 = "extremely"). In this study, we were interested in the relationship between four specific feelings (e.g., feelings of guilt, mistrust, self-punishment, and worthlessness) and class membership. To measure these feelings, four specific items of the BSI were used in the multinomial regression analyses: item 10 was used to measure mistrust ("feeling that most people cannot be trusted"), item 34 was to measure self-punishment ("the idea that you should be punished for your sins"), item 50 to measure worthlessness ("feelings of worthlessness"), and item 52 to measure guilt ("feelings of guilt"). Researchers have found good psychometric properties of the instrument in the general population (De Beurs & Zitman, 2006). In the current sample, the α was .96.

2.3 Statistical analyses

All items of the MIAS and the CAPS-5 were recoded into dichotomous scores before they were included in the analysis. The CAPS-5 was recoded based on the standard

scoring system of symptom endorsement (indicating the presence or absence of a PTSD symptom) (Weathers et al., 2018). Accordingly, symptoms were classified as present when they were rated as moderate, severe, or extreme (severity scores 2 to 4) and considered absent when rated as absent or mild (severity scores 0 and 1). A MIAS appraisal was classified as absent when items were rated as "not at all" (score 1) or "a little" (score 2) and classified as present when the items was rated as "somewhat" (score 3) or "very much" (score 4).

A LCA was performed in Mplus version 8 (Muthén & Muthén, 2009) in which the allocation of group membership was based on the most likely class membership. The one-class model was fitted first, followed by models with increasing numbers of classes. In order to avoid local likelihood maxima in BLRT, 500 bootstrap samples were requested with 50 sets of starting values in the first and 20 in each bootstrap sample. The model fit for the classes were examined with the following indices: entropy, the Lo-Mendell-Rubin test, the adjusted likelihood ratio test (LMR-A), the bootstrap likelihood ratio test (BLRT), the Bayesian Information Criterion (BIC), the Sample-Size Adjusted BIC (SSA-BIC), and the Akaike Information Criterion (AIC). To avoid local likelihood maxima, 2,000 random sets of starting values in the first and 100 in the second step of optimisation were requested. In addition, 200 initial stage iterations were used.

Lastly, it was investigated whether age, gender, PTSD severity, general psychopathology severity (BSI total score), and feelings of worthlessness, mistrust, guilt, and self-punishment (BSI item 10, 34, 50 and 52) differentiated between emerging latent classes. This was tested by conducting three independent multinomial logistic regression models in Mplus using the three-step procedure (Asparouhov & Muthén, 2014). To check for possible interference between CAPS-5 and BSI items, separate multinomial regression models were estimated. Age in years and gender were included in a first model. General psychopathology and PTSD severity were included simultaneously in a second model. Lastly, the four BSI items were tested in a third model. A missing values analysis indicated less than 10% missing values for all responses and were handled with full maximum likelihood estimation and listwise deletion. Furthermore, a Little's Test for Data Missing Completely at Random (Little's MCAR Test) showed that the missing data were completely random, $X^2 = 118.8$, $p = .12$.

3. RESULTS

3.1 Descriptive statistics

The sample consisted of 421 participants, with 70% males. The average years of employment was *M* = 21.31, *SD* = 11.22 years. Most participants (72%) met the criteria for PTSD according to the CAPS-5. All participant characteristics in this sample are described in Table 1. The qualitative analyses of the descriptions of the PTEs revealed twelve categories (see Table 2). The most reported PTE in our sample was witnessing victims of suicide or suicide attempts (17%), followed by road traffic accidents (14%), resuscitation (10%), finding a corpse (not about suicide) (5%), shooting incidents (9%), and stabbing incidents (4%).

Table 1 Descriptive statistics of demographic variables and clinical characteristics

Characteristics	*N*	%	Mean	SD	Range
Age in years			46.1	11.3	21.3 – 75.9
Gender					
Male	294	69.8			
Female	127	30.2			
Years of employment			21.3	11.2	1 – 48
PTSD severity			28.6	13.5	7 – 70
General psychopathology			1.4	0.7	0.1 – 3.6
Moral injury appraisals			17.6	6.7	9 – 36

Note. PTSD = Posttraumatic Stress Disorder.

Table 2 Descriptive statistics of qualitative analysis of potentially traumatic events

Potentially traumatic events (PTEs)	Total
	N (%)
Suicide	103 (16.6)
Road traffic accidents	85 (13.7)
Resuscitation	60 (9.7)
Shooting incidents	55 (8.9)
Physical violence (in absence of a weapon)	47 (7.6)
Finding a corpse (not in relation to suicide)	30 (4.8)
Stabbing incidents	24 (3.9)
Threatened with the death (verbal or physical with weapon) without actual harm	22 (3.5)
Drowning	20 (3.2)
Riot / violence by crowd	19 (3.1)
Murder or liquidation	17 (2.7)
Fire / explosion	13 (2.1)
Fateful accidents (e.g., falling from stairs)	11 (1.8)
Family incidents (e.g., parents kill themselves and children)	10 (1.6)
Confrontation with a victim of sexual violence	8 (1.3)
Sexual violence	8 (1.3)
Hostage	8 (1.3)
Bad news conversations	7 (1.1)
Accident or violence with an animal	5 (0.8)
A (potential) HIV contamination	2 (0.3)
PTE could not be categorized	63 (10.2)

3.2 LCA

Table 3 represents model fit statistics for the six models that we evaluated. Moving from a one-class solution to a six-class solution, the log-likelihood values increased, and BIC values decreased. All solutions showed significant p-values for the LMR-A results except for the six-class solution, and, therefore, no more class solutions were considered. All entropy values were ≥ .92. The three-class solution yielded the highest entropy value (.94); however, the BIC was lowest in the five-class solution. Parsimony and interpretability supported the selection of the five-class model, and, therefore, this model was retained.

Based on other LCA studies (Forbes et al., 2015; Nickerson et al., 2014) a probability of ≥ 0.60 was considered as representing a high probability of item endorsement, values ≤ 0.59 and ≥ 0.16 as representing a moderate probability of endorsement, and values ≤ 0.15 as representing low probability of endorsement. Accordingly, the first class included 119 police officers (28%) with low endorsement of MI-other and MI-self items (0 of the 9 items) and moderate to high endorsement of 17 of the 20 PTSD items. This class was named the "Low MI, high PTSD class".

The second class included 46 police officers (11%) with moderate endorsement of all five MI-self appraisals, moderate to high endorsement of all four MI-other appraisals, and low to moderate endorsement of 12 of the 20 PTSD items. This class was called the "High MI, low PTSD class". The third class included 72 police officers (17%), evidencing high endorsement of all nine MI-other and MI-self items and high endorsement of all 20 PTSD items. This class was named the "High MI, high PTSD class". The fourth class included 71 police officers (16%) with low endorsement of all nine MI-other and MI-self items and low endorsement of 11 of the 20 PTSD symptoms. This class was labelled as the "Low MI, low PTSD class". The final class included 113 police officers (27%) with high endorsement of all four MI-other items, low endorsement of four of the five MI-self items, and high endorsement of 19 of the 20 PTSD symptoms. This class was labelled as the "High MI-other, high PTSD class". Figure 1 presents the symptom endorsement probability for the five-class solution.

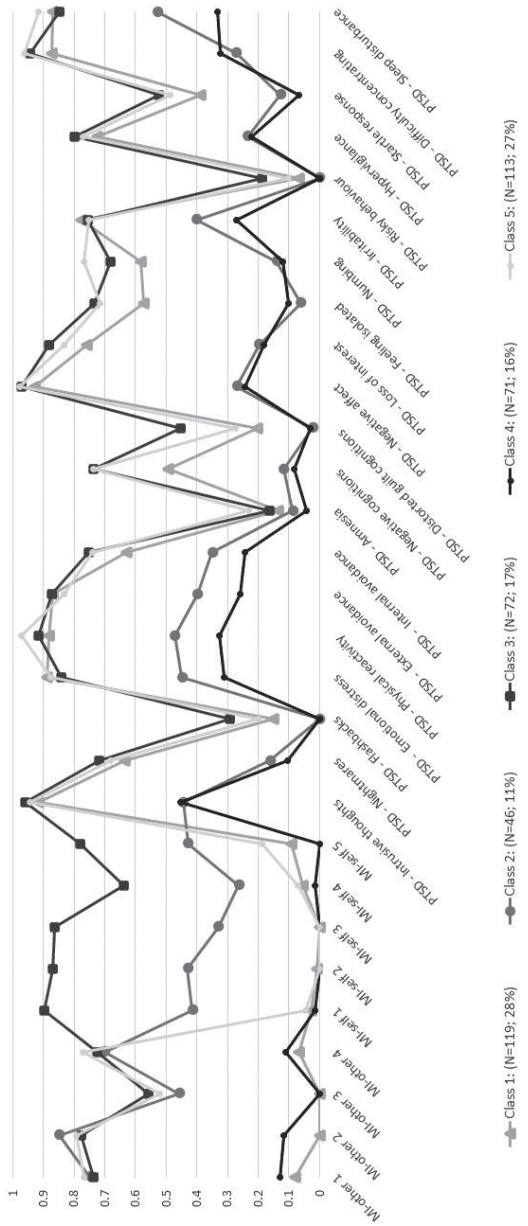

Figure 1 Symptom endorsement probability for the five-class solution

Table 3 Goodness-of-fit indices for 6 profiles

Model	Log-likelihood	AIC	BIC	SSBIC	B-LRT	*p*-value	LMR-A	*p*-value	Entropy
1 profile	-7021.253	14100.506	14217.743	14125.717	-	-	-	-	1.000
2 profiles	-6246.280	12610.559	12849.075	12661.849	1549.947	0.0000	1541.444	0.0000	0.928
3 profiles	-5889.931	11957.862	12317.657	12035.232	712.697	0.0000	708.787	0.0000	0.946
4 profiles	-5726.787	11691.575	12172.648	11795.024	326.288	0.0000	324.498	0.0000	0.935
5 profiles	-5610.205	11518.409	12120.762	11647.938	233.165	0.0000	231.886	0.0334	0.934
6 profiles	-5531.802	11421.603	12145.235	11577.211	156.806	0.0000	155.946	0.0523	0.923

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; SS-BIC = sample size-adjusted Bayesian information criterion; LMR-A = Lo-Mendell-Rubin-likelihood ratio adjusted; B-LRT = bootstrap-likelihood ratio test of model fit.

Table 4 Descriptive statistics for the five-class solution

Measure	Class 1: Low MI, high PTSD			Class 2: High MI, low PTSD			Class 3: High MI, high PTSD			Class 4: Low MI, low PTSD			Class 5: High MI-other, high PTSD		
	N (%)	*M*	*SD*	*N (%)*	*M*	*SD*	*N (%)*	*M*	*SD*	*N (%)*	*M*	*SD*	*N (%)*	*M*	*SD*
Age	119	44.9	11.4	46	49.6	10.7	72	47.2	10.7	71	44.3	12.1	113	46.4	11.0
Gender	119			46			72			71			113		
Female	35 (29.4)			8 (17.4)			24 (33.3)			19 (26.8)			41 (36.3)		
Male	84 (70.6)			38 (82.6)			48 (66.7)			52 (73.2)			72 (63.7)		
Years of employment	119	20.2	11.0	46	24.8	11.2	72	21.9	11.3	71	19.6	12.1	113	21.8	11.0
PTSD severity	119	31.8	7.8	44	13.4	6.2	71	37.9	10.4	68	10.1	6.1	112	36.6	8.8
General psychopathology	119	1.3	0.6	46	1.1	0.7	72	1.8	0.6	71	0.8	0.4	107	1.7	0.6
Moral injury appraisals	119	12.2	3.3	46	22.3	4.6	72	27.1	4.3	71	12.2	3.1	113	18.6	3.3

Note. PTSD = Posttraumatic Stress Disorder; MI = Moral Injury.

Table 5 Summary of multinomial regression analyses with sociodemographic variables

	Reference profile															
	Class 1: Low MI, high PTSD (*N* = 119)				Class 2: High MI, low PTSD (*N* = 46)				Class 3: High MI, high PTSD (*N* = 72)				Class 4: Low MI, low PTSD (*N* = 71)			
Comparison profile	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**
Class 2: High MI, low PTSD (N = 46)																
Age	0.036	0.018	2.046	0.041												
Gender	-0.510	0.498	-1.023	0.306												
Class 3: High MI, high PTSD (N = 72)																
Age	0.022	0.014	1.567	0.117	-0.015	0.019	-0.787	0.431								
Gender	0.318	0.339	0.939	0.348	0.828	0.526	1.575	0.115								
Class 4: Low MI, low PTSD (N = 71)																
Age	-0.007	0.016	-0.465	0.642	-0.044	0.020	-2.140	0.032	-0.029	0.016	-1.782	0.075				
Gender	-0.154	0.363	-0.423	0.672	0.356	0.541	0.659	0.510	-0.472	0.382	-1.234	0.217				
Class 5: High MI-other, high PTSD (N = 113)																
Age	0.017	0.013	1.338	0.181	-0.019	0.018	-1.071	0.284	-0.004	0.014	-0.312	0.755	0.025	0.015	1.615	0.106
Gender	0.428	0.311	1.375	0.169	0.937	0.502	1.867	0.062	0.109	0.336	0.325	0.745	0.581	0.351	1.657	0.098

Note. PTSD = Posttraumatic Stress Disorder; MI = Moral Injury.

Table 6 Summary of multinomial regression analyses with PTSD severity and general psychopathology

	Reference profile															
	Class 1: Low MI, high PTSD (*N* = 119)				Class 2: High MI, low PTSD (*N*= 46)				Class 3: High MI, high PTSD (*N* = 72)				Class 4: Low MI, low PTSD (*N* = 71)			
Comparison profile	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**	**B**	**SE**	**CI**	***p*- value**
Class 2: High MI, low PTSD (N = 46)																
PTSD	-0.765	0.197	-3.888	0.000												
General psychopathology	1.956	0.799	2.448	0.014												
Class 3: High MI, high PTSD (N = 72)																
PTSD	0.061	0.021	2.945	0.003	0.826	0.197	4.197	0.000								
General psychopathology	0.889	0.282	3.151	0.002	-1.067	0.815	-1.310	0.190								
Class 4: Low MI, low PTSD (N = 71)																
PTSD	-0.821	0.197	-4.178	0.000	-0.056	0.037	-1.523	0.128	-0.882	0.197	-4.485	0.000				
General psychopathology	0.396	0.892	0.444	0.657	-1.560	0.549	-2.839	0.005	-0.493	0.904	-0.545	0.586				
Class 5: High MI-other, high PTSD (N = 113)																
PTSD	0.042	0.018	2.308	0.021	0.807	0.199	4.066	0.000	-0.019	0.019	-0.980	0.327	0.864	0.198	4.352	0.000
General psychopathology	0.765	0.273	2.804	0.005	-1.191	0.814	-1.463	0.143	-0.124	0.260	-0.479	0.632	0.368	0.904	0.407	0.684

Note. PTSD = Posttraumatic Stress Disorder; MI = Moral Injury.

Table 7 Summary of multinomial regression analyses with four items of the BSI

	Reference profile															
	Class 1: Low MI, high PTSD (*N* = 119)				Class 2: High MI, low PTSD (*N* = 46)				Class 3: High MI, high PTSD (*N* = 72)				Class 4: Low MI, low PTSD (*N* = 71)			
Comparison profile	**B**	**SE**	**CI**	***p*-value**	**B**	**SE**	**CI**	***p*-value**	**B**	**SE**	**CI**	***p*-value**	**B**	**SE**	**CI**	***p*-value**
Class 2: High MI, low PTSD (N = 46)																
BSI 10*	-0.330	0.418	-0.788	0.431												
BSI 34*	1.959	1.987	0.986	0.324												
BSI 50*	-0.370	0.472	-0.784	0.433												
BSI 52*	-0.520	0.459	-1.133	0.257												
Class 3: High MI, high PTSD (N = 72)																
BSI 10	0.337	0.355	0.950	0.342	0.667	0.457	1.460	0.144								
BSI 34	3.601	1.623	2.218	0.027	1.642	1.236	1.328	0.184								
BSI 50	-0.370	0.472	-0.784	0.433	0.318	0.512	0.620	0.535								
BSI 52	-0.520	0.459	-1.133	0.257	1.306	0.537	2.433	0.015								
Class 4: Low MI, low PTSD (N = 71)																
BSI 10	-0.733	0.416	-1.761	0.078	-0.404	0.497	-0.812	0.417	-1.071	0.442	-2.425	0.015				
BSI 34	3.006	1.815	1.657	0.098	1.047	1.542	0.679	0.497	-0.595	0.936	-0.636	0.525				
BSI 50	-0.850	0.523	-1.626	0.104	-0.480	0.620	-0.774	0.439	-0.798	0.544	-1.465	0.143				
BSI 52	-0.860	0.417	-2.063	0.039	-0.340	0.553	-0.615	0.539	-1.646	0.466	-3.529	0.000				
Class 5: High MI-other, high PTSD (N = 113)																
BSI 10	0.887	0.314	2.826	0.005	1.217	0.415	2.936	0.003	0.550	0.346	1.591	0.112	1.621	0.397	4.079	0.000
BSI 34	2.104	1.695	1.241	0.215	0.144	1.304	0.111	0.912	-1.498	0.542	-2.762	0.006	-0.903	1.004	-0.900	0.368
BSI 50	-0.205	0.344	-0.597	0.550	0.165	0.481	0.342	0.732	-0.153	0.386	-0.397	0.692	0.644	0.521	1.236	0.216
BSI 52	0.191	0.318	0.599	0.549	0.711	0.473	1.501	0.133	-0.595	0.394	-1.510	0.131	1.050	0.416	2.524	0.012

Note. *BSI 10: “Feeling that most people cannot be trusted”; BSI 34: “The idea that you should be punished for your sins”; BSI 50: “Feelings of worthlessness”; BSI 52: “Feeling of guilt”.

3.3 Class membership differentiation

Table 4 represents the descriptive statistics of the variables age, gender, PTSD severity (CAPS-5), and psychopathology severity (BSI) for the five classes. Tables 5, 6 and 7 represent the results of the multinomial regression analysis. Instead of using only one class as a reference class to make the comparisons, we performed pairwise comparisons between all the classes. No significant differences between classes were found for gender, but there were significant differences for age. Participants lower in age were more likely to be in the "Low MI, high PTSD class" in comparison to the "High MI, low PTSD class", and participants lower in age were more likely to be in the "Low MI, low PTSD class" in comparison to the "High MI, low PTSD class".

General psychopathology differentiated significantly between several classes. Participants with higher levels of general psychopathology were more likely to be in the "High MI, low PTSD class", the "High MI, high PTSD class", and the "High MI-other, high PTSD class" in comparison to the "Low MI, high PTSD class" and the "Low MI, low PTSD class". In addition, participants with higher PTSD severity were more likely to be in the "Low MI, high PTSD class", the "High MI, high PTSD class", and in the "High MI-other, high PTSD class" in comparison to the "Low MI, low PTSD class" and the "High MI, low PTSD class".

Lastly, differences between classes on four items of the BSI (items 10, 34, 50, and 52) were examined. There were no significant class differences for item 50 ("feelings of worthlessness"). Participants with higher scores on item 10 ("feeling that most people cannot be trusted), were more likely to be included in the "High MI-other, high PTSD class" in comparison to the "Low MI, high PTSD class", the "High MI, low PTSD class", and the "Low MI, low PTSD class". Also, participants with higher scores on this item were more likely to be in the "High MI, high PTSD class" than the "Low MI, low PTSD class". Participants with higher scores on item 34 ("The idea that you should be punished for your sins") were more likely to be included in the "High MI, high PTSD class" than the "High MI-other, high PTSD class" and the "Low MI, high PTSD class". Finally, participants with higher scores on item 52 ("Feelings of guilt") were more likely to be included in the "High MI-other, high PTSD class" than the "Low MI, low PTSD class" and participants with higher scores on this item were more likely to be in the "High MI, high PTSD class" than the "High MI, low PTSD class", the "Low MI, high PTSD class", and the "Low MI, low PTSD class".

4. DISCUSSION

The primary objective of this study was to identify classes differing in terms of endorsement of MI appraisals and PTSD symptoms among police officers exposed to PTEs. Additionally, it was investigated whether age in years, gender, general psychopathology, PTSD severity, and feelings relevant to MI differentiated between the latent classes. A model with five different classes appeared to be the best fitting and interpretable model: (1) a “Low MI, high PTSD class”, (2) a “High MI, low PTSD class”, (3) a “High MI, high PTSD class, (4) a “Low MI, low PTSD class”, and (5) a “High MI-other, high PTSD class”. These results are in line with other LCA studies in police officers and military people (Mensink et al., 2022) and, as such, provide further evidence that a substantial subgroup of trauma-exposed police officers is suffering from MI in addition to PTSD symptoms. Interestingly, there were three PTSD symptoms (e.g., flashbacks, amnesia, and risky behaviour) with relatively low scores across all classes. This suggests that these symptoms may not discriminate well between subgroups with different patterns of PTSD symptoms and MI appraisals. Furthermore, it was shown that high levels of PTSD do not always co-occur with high levels of MI appraisals, or vice versa. This suggests that MI appraisals and PTSD symptoms are distinct constructs; it confirms the notion that MI has a unique phenomenology that is not accounted for by PTSD (Litz & Kerig, 2019).

The present investigation distinguished between MI-self and MI-other appraisals and identified a distinct group of individuals who endorsed MI-other appraisals (and not MI-self appraisals), along with high levels of PTSD. There was no class with only MI-self appraisals and PTSD symptoms. The differentiation between self-directed and other-directed MI appraisals adds to the existing studies on MI and suggests that police officers are less inclined to appraise PMIEs about themselves. There are different explanations for this finding. First, it may be challenging to report incidents in which someone violated important moral codes or failed to prevent harm to others, due to potential feelings of shame and guilt. The participants in this study completed the questionnaires with the understanding that a clinician would discuss the results during the assessment. This may have caused hesitance to endorse MI-self appraisal items. Another possible reason why police officers may be less inclined to appraise PMIEs in relation to themselves is that being faced with moral transgressions can be perceived as an inevitable “part of the job”. Because of that, the attribution of a PMIE to oneself may be limited to a specific selection of traumatic events. For instance, it could be more likely that the inability to aid a colleague who is physically assaulted or the inability to save someone’s life during resuscitation may result in self-inflicting cognitive appraisals than witnessing a shooting accident in which the police officer

attempts to arrest an offender. While this investigation briefly summarized the characteristics of the traumatic events, there was no systematic inquiry. Further research could investigate the relationship between MI and the nature of traumatic events to understand which events are more susceptible to causing MI.

Additionally, we examined a number of variables possibly associated with the five classes. No significant differences between classes were found for gender but participants in the "Low MI, high PTSD class" and the "Low MI, low PTSD class" were younger. This contrasts with studies in healthcare professionals showing that a lower age correlated with higher MI scores (Mantri, Lawson, et al., 2021; Mantri, Song, et al., 2021) and one study in police officers that found no relationship between age and MI (Mensink et al., 2022). Nevertheless, it should be mentioned that the *p*-value was close to the $p < .05$ threshold for statistical significance ($p = .041$), and due to multiple comparisons in the multinomial regression analyses, this result should be interpreted with caution. Next to PTSD symptoms, MI can be associated with a broad range of psychopathological symptoms. Participants in the "High MI, low PTSD class", the "High MI, high PTSD class", and the "High MI-other, high PTSD class" evidenced higher levels of general psychopathology in comparison to the "Low MI, high PTSD class" and the "Low MI, low PTSD class". The finding that the "High MI, low PTSD class" evidenced higher levels of general psychopathology than the "Low MI, high PTSD class" is particularly notable because it suggests that MI appraisals (without PTSD) generate more psychological distress than PTSD symptoms alone. Other studies in refugees (Hoffman et al., 2019) and military groups (Currier et al., 2015; Nash et al., 2013) showed that experiencing MI adds additional burden on top of experiencing PTSD in terms of concurrent psychopathology. This highlights the importance of recognizing MI in police officers at an early stage during duty. Participants in the "Low MI, high PTSD class", the "High MI, high PTSD class", and the "High MI-other, high PTSD class" displayed higher levels of PTSD severity. This is in line with studies indicating that MI symptoms positively correlate with PTSD severity (Currier, McDermott, et al., 2019).

Furthermore, participants in the "High MI-other, high PTSD class" and the "High MI, high PTSD class" reported higher scores on the item "Feeling that most people cannot be trusted" and the item "Feelings of guilt". This underlines that feelings of guilt and distrust in others are particularly important for individuals who report both MI appraisals and PTSD symptoms. In addition, participants in the "High MI, high PTSD class" reported higher scores on the item "The idea that you should be punished for your sins". This implies that individuals who express notions of self-punishment, possibly extending to self-harm, are inclined to acknowledge both

self-directed moral transgressions in addition to other-directed transgressions. While research exploring the link between self-directed and other-directed transgressions and self-punitive tendencies is lacking, it can be reasonably posited that self-directed transgressions might be intertwined with self-harming behaviours, as they threaten one's self-concept. Given the absence of a distinct class exclusively characterized by MI-self appraisals – with or without concurrent PTSD symptoms – the study was precluded from individually distinguishing MI-self from MI-other appraisals. To fully discern the nuances of self-directed and other-directed transgressions and their implications for clinical outcomes, future investigations are imperative.

Although this study is valuable in understanding how different groups of police officers react to PTEs, there are also several limitations. One limitation is that we primarily focused on cognitive appraisals, utilizing the MIAS, and had less focus on the wide spectrum of emotional processes related to MI, such as regret, remorse, and shame. More research is necessary in order to understand if similar subgroups can be identified based on the emotional aspects of MI. Moreover, the descriptions of the traumatic events were derived from the CAPS-5 interview by different clinicians and lacked a clear instruction beforehand. As a result, the presence of PTEs and PMIEs was not measured systematically, and the descriptions could not differentiate between PTEs and PMIEs. Nevertheless, the qualitative descriptions give more insight into the way police officers were exposed to trauma in this specific sample. Finally, this study did not provide information on when the reported traumatic experiences occurred. This consideration is notable as existing studies suggest that recent memories may be retrieved more vividly, accurately, and emotionally intense compared to long-term events (Sutin & Robins, 2007), potentially exerting an effect on the outcomes of our results. Adjusting for temporal proximity to the traumatic event in the analyses would have enhanced the robustness of our findings and should be considered in future research.

In conclusion, MI appraisals emerge as a significant concern within the population of police officers. The findings of this study delineate five distinct subgroups, each exhibiting unique patterns of cognitive MI appraisals and PTSD symptoms. This underscores the importance of measuring and identifying MI in this particular group, as it can inform improvement of treatment interventions for police officers exposed to different types of PMIEs. While trauma-focused therapy may be adequate for certain individuals, others may require targeted interventions specifically addressing moral injury to attain optimal outcomes. The past years there is a growing number of treatment interventions targeting MI, such as Adaptive Disclosure (Litz et al., 2016), Trauma-Informed Guilt Reduction Therapy (Norman, 2022), or Brief Eclectic

Psychotherapy for moral trauma (BEP-MT) (de la Rie et al., 2021) and can be added to regular trauma focused therapies. Subsequent research endeavours should point out the potential requirement for distinct adaptations within MI treatment protocols, given that self- and other-transgressions may vary in their clinical outcomes.

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Author Contributions

NM: conceptualization, methodology, formal analysis, writing – original draft preparation. SdlR: writing – review and editing, supervision. PB: writing – review and editing, supervision.

Data availability statement

The data are not publicly available due to their containing information that could compromise the privacy of the participants. Also, participants were not asked to give consent to save their data in a public data repository. The MPlus output files are available at https://osf.io/6z92p/?view_only=3efc5baaf4b74bd7895dc303bed3b749

Disclosure statement

No potential conflict of interest was reported by the author(s).

Ethical approvement

After consultation, the medical ethics committee of Leiden stated that no ethical approval for the study was necessary since assessments were conducted primarily for diagnostic purposes within the institution. All participants in this study were informed about the procedure and provided written informed consent for the utilization of their data for scientific purposes. Participants were informed about the storage of their data and allowed to have their data removed from the database.

Transparency and openness

This study was not preregistered. We reported how we determined our sample size, all data exclusions, and all measures in the study.

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PART II

5

CHAPTER 5

Trauma memories with and without moral conflict: characteristics, centrality, and associations with posttraumatic stress

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ABSTRACT

Background

The significance of moral conflicts that emerge during traumatic events and their influence on posttraumatic stress (PTS) and related symptoms are increasingly recognized. However, characteristics of the memories of these conflicts and how central these memories are within autobiographical memory remain largely unclear.

Method

In this study, students recalling trauma memories with a moral conflict were compared to students whose trauma memories did not include a moral conflict, in terms of the event-centrality of the trauma memory, memory characteristics, current emotional distress, and PTS. Additionally, we examined to what extent event-centrality was associated with PTS and memory characteristics.

Results

Participants recalling trauma memories with a moral conflict referred to these memories as more central, self-defining, and were more often recalled from an observer perspective with greater self-distance compared to participants recalling trauma memories without moral conflict. The former group experienced more shame, guilt, disgust, and horror during the traumatic event and reported more PTS and current emotional distress. Event-centrality was positively correlated with PTS.

Conclusion

This study highlights that event-centrality and memory characteristics play an important role in trauma memories with moral conflict.

Keywords

Trauma memories, moral conflict, posttraumatic stress, event-centrality, memory characteristics

1. INTRODUCTION

After a traumatic life event, some people develop posttraumatic stress (PTS) or posttraumatic stress disorder (PTSD). Traumatic experiences can threaten deeply held moral values, thus becoming morally distressing events (Litz & Kerig, 2019). As such, these events include a moral conflict between personal moral values and moral transgressive acts of oneself or others (Jinkerson, 2016). The importance of moral conflicts arising during traumatic events and their impact on PTS and related symptomatology is increasingly acknowledged in both research and clinical practice (Litz & Kerig, 2019; Litz et al., 2009). Morally distressing events can contribute to the development of PTS as well as feelings of guilt, shame, anger, self-blame, and, ultimately, moral injury (Currier et al., 2021; Litz et al., 2009; Mooren et al., 2022; Mooren, de la Rie et al., 2024; Nickerson et al., 2015).

Although recent studies have explored the psychological consequences of morally distressing events, it is still unknown how such events are processed and encoded within autobiographical memory. The few studies that examined memories of morally distressing events concerning autobiographical memory processes primarily examined memories of relatively benevolent immoral behaviour (e.g., cheating during a game), which are not necessarily traumatic in nature. Some of these studies found that people tend to forget memories of their unethical behaviour ("unethical amnesia") (Kouchaki & Gino, 2016; Stanley & De Brigard, 2019; Stanley et al., 2019). This aligns with the notion that people are inclined to remember immoral transgressions from the past in a way that they can maintain a positive moral self-image (Jordan et al., 2015). Accordingly, it has been suggested that memories of unethical behaviour become less accessible, vivid, detailed, and realistic over time compared to memories of ethical behaviour (Kouchaki & Gino, 2016). In contrast, some evidence indicated that memories of immoral behaviour were more central to one's identity and were remembered more frequently, vividly, detailed, and with more distance from the self than memories of minor moral transgressions (Huang et al., 2020; Knez & Nordhall, 2017).

Event-centrality is one critical concept with high prognostic value for PTS (da Silva et al., 2016) and refers to the degree to which the memory of a certain life-event is considered as a reference point for the attribution of meaning to other events, a turning point in one's life-story, and a self-defining component of one's identity (Berntsen & Rubin, 2006, 2007; Robinaugh & McNally, 2010, 2011). To date, the examination of event-centrality and memory characteristics concerning PTSD has predominantly focused on memories of traumatic events that pose a threat to the safety of oneself

or others. Across different populations, event-centrality is associated with elevated PTSD symptomatology (da Silva et al., 2016; Gehrt et al., 2018; Robinaugh & McNally, 2010, 2011), and PTSD symptoms are predictive of the centrality of trauma memories over time (Glad et al., 2019; Stevens et al., 2022). When a traumatic event is perceived as central to one's identity, it maintains a sense of current threat (Conway, 2005). This increases the accessibility and vividness of memories related to the traumatic event, thereby intensifying PTSD symptoms such as re-experiencing (Berntsen & Rubin, 2006; Robinaugh & McNally, 2010, 2011).

Given that event-centrality is associated with increased accessibility and vividness of memories, it can be asserted that event-centrality is associated with memory phenomenology, that is, specific characteristics of trauma memories and how they are recalled in autobiographical memory (Sutin & Robins, 2007). In PTSD, different memory characteristics can serve multiple functions. For instance, highly vivid and accessible trauma memories can increase emotional responses, which subsequently can act as a warning signal for future events (Berntsen & Rubin, 2007; Tversky & Kahneman, 1973). When a memory is perceived from an observer perspective (i.e., reliving the event through the eyes of an observer), this is assumed to distance oneself from the memory to reduce emotional distress (Kenny & Bryant, 2007; Libby & Eibach, 2002).

To the best of our knowledge, no studies have yet investigated the event-centrality, memory characteristics, and associations with PTS of traumatic events that contain a moral conflict. Understanding the impact of trauma memories with moral conflict is essential, as this impact may differ from the consequences of trauma memories that include no moral conflict. Accordingly, the overarching aim of the current study was to enhance knowledge on the event-centrality and memory characteristics of trauma memories with moral conflict and the association with emotional distress and PTS, in a non-clinical sample. Specifically, the aim was fourfold.

First, we examined the content of traumatic events participants had experienced, whether these events involved a moral conflict, and the nature of these conflicts. This knowledge was deemed valuable for identifying which type of traumatic events are likely to be associated with a moral conflict. This may guide future research in exploring the differentiation between traumatic events with a moral conflict from other types of traumatic experiences.

Second, we explored the event-centrality and memory characteristics of trauma memories with and without moral conflict. It was expected that trauma memories with

moral conflict would be more central to one's identity, given that these memories involve more threat to personal integrity and identity (Litz & Kerig, 2019) than memories without a moral conflict. Given the scarcity and mixed results in the literature on the characteristics of memories of morally distressing events, no hypotheses were formulated regarding the differences in memory characteristics.

Third, we studied differences in emotional distress of participants recalling trauma memories with and without moral conflict, focusing on eight specific emotions (fear, shame, guilt, horror, disgust, panic, sadness, and anger) that participants could have felt *during* the traumatic event and current emotional distress at recall. It was expected that participants recalling trauma memories with a moral conflict would report more shame and guilt during the traumatic event and more current emotional distress at recall than participants recalling trauma memories without moral conflict. This expectation was based on studies showing that morally injurious events are strongly associated with moral emotions such as guilt and shame (Jinkerson, 2016; Litz et al., 2009) and research in clinical groups, showing that the experience of moral conflicts during a traumatic event can impose more emotional burden than exposure to traumatic events without moral conflict (Currier et al., 2015; Mooren et al., 2024; Nash & Litz, 2013). For the other emotion ratings, no differences were expected. In addition, we examined differences in PTS severity between participants recalling trauma memories with vs. without moral conflict. Research on moral injury in clinical groups has shown that experiencing moral conflicts during a traumatic event can impose more psychological burden than exposure to events without moral conflict (Currier et al., 2015; Mooren, Boelen et al., 2024; Nash & Litz, 2013), leading to higher levels of PTS and related symptomatology. Accordingly, it was expected that participants recalling trauma memories with moral conflict would experience higher levels of PTS.

Fourth, we examined to what extent event-centrality was associated with PTS and memory characteristics. Based on earlier research (e.g., Berntsen & Rubin, 2006), we anticipated that event-centrality was associated with PTS. For exploratory reasons, and considering the scarcity of research on (memories of) morally distressing events in general populations, we also investigated the associations between several memory characteristics (vividness, self-view, sensory detail, accessibility, coherence, sharing, distance, field perspective, and observer perspective), event-centrality, and PTS. For instance, studies have shown that trauma memories in individuals with PTS tend to be more sensory-rich and easily accessible compared to those without PTS (Hackmann et al., 2004; Reed et al., 2024). In addition, retrieving memories from an observer perspective (as opposed to a field perspective) is linked to fewer re-experiencing

symptoms (i.e., intrusions) (Kenny & Bryant, 2007; Mooren et al., 2019). This suggests that, in particular, vantage perspective, sensory details, and the accessibility of trauma memories may have important associations with PTS. However, it is unknown whether these associations between vantage perspective, sensory details, the accessibility of trauma memories, and PTS are different in trauma memories with moral conflict compared to trauma memories without moral conflict.

2. METHOD

2.1 Participants and procedure

Data were collected from 460 students at Utrecht University. An announcement for an online survey was published on the academic portal of the faculty of Social and Behavioural Sciences of Utrecht University. Students could participate if they had experienced a stressful life event and responded positively to the statement: "In my life, I experienced at least one (or more) traumatic events". After reading the information letter, potential participants could sign up for the study and gain access to the anonymous self-paced survey, after giving informed consent. The survey included the memory recall test and measures detailed below. After completion of the survey, brief written information was provided, and participants received course credits for their participation. The study was approved by the ethics committee of the faculty of Social and Behavioural Sciences of Utrecht University (file number 22-0133).

2.2 Material

2.2.1 Trauma memory recall

To gather information about the traumatic events participants had experienced, a "memory recall task" was developed, with the following instruction: "*We now ask you to recall a memory of a (very) stressful or traumatic situation in your life where you have experienced strong negative emotions. This could be an event that significantly impacted you and continues to hold emotional weight when you reflect on it. It is important to select a life event that can (still) evoke negative feelings when you think back to it. Take a moment to focus and bring this memory to mind, allowing yourself to reflect on the details of the event, your feelings at the time, and its impact on you.*" Participants were instructed to describe their memories in a few sentences. Then, they were asked whether they experienced a moral conflict during this event ("Have you experienced a moral conflict associated with/during this event?") and if so, to describe this conflict in a few sentences.

Our goal was to allow for open interpretation, considering that imposing stricter definitions might steer participants toward specific types of moral scenarios. Therefore, we intentionally used the phrasing "with/during" to capture a broader range of subjective experiences related to moral conflict. Individuals exposed to moral transgressions may experience a moral conflict either directly at the time of the event ("during") or retrospectively upon recalling the memory ("with"). By providing both options, we aimed to more accurately distinguish participants who experienced a moral conflict from those who did not. Participants were also asked to rate to what extent they experienced each of the following emotions during the event: fear, (e.g., "I felt fear during the event"), shame, guilt, horror, disgust, panic, sadness, and anger on 8-point Likert scales (0 = "*not at all*", 7 = "*extremely*"). Furthermore, participants were instructed to report when the event took place and to rate the current emotional distress associated with the memory ("When you recall this memory, how intense are your emotions at this moment?") on a scale ranging from 0 (not intense) to 100 (very intense).

2.3 MEASURES

2.3.1 Demographic characteristics

The following demographic variables were registered: age, gender (male, female, non-binary), and ethnicity. Additionally, participants were asked if they received psychological treatment currently or in the past (currently in treatment, not in treatment, received treatment in the past).

2.3.2 Memory characteristics

Participants were instructed to keep in mind the trauma memory of the recall test and then rate several characteristics based on the scales of the Memory Experiences Questionnaire (MEQ) (Sutin & Robins, 2007). In total, nine memory characteristics were measured, including vividness ("My memory for this event is very vivid"), self-view ("This memory determines how I see myself"), sensory details ("My memory for this event involves a lot of sensory information (sounds, smells, tastes, etc.)"), accessibility ("This memory was easy for me to recall"), coherence ("The order of events in the memory is clear"), sharing ("Since it happened, I have talked about this event many times"), distancing ("I feel like the person in this memory is a different person than who I am today"), field perspective ("I see the experience in the memory through my own eyes"), and observer perspective ("In my memory, I see this experience through the eyes of others"). To minimize the burden on participants, we used only one item

from each characteristic subscale of the questionnaire, resulting in nine items in total. For this selection, we took the item that most closely aligned with the characteristic and was not phrased in a negative form. For instance, we chose "My memory of this event is very vivid" instead of "My memory of this event is not very clear/detailed/dim". Participants were instructed to rate each memory characteristic on a 5-point Likert scale from 1 ("*strongly disagree*") to 5 ("*strongly agree*").

2.3.3 Event-centrality

The event-centrality of the traumatic event was measured with the revised Centrality of Events Scale Revised (CES-R) (Berntsen & Rubin, 2006). This questionnaire contains 7 items (e.g., "I feel that this event has become a central part of my life story"). Participants rated their agreement with each item on a 5-point Likert scale from 1 ("*strongly disagree*") to 5 ("*strongly agree*"). Internal consistency of this instrument was high in our sample (Cronbach's α = .94).

2.3.4 Posttraumatic stress

Participants were instructed to rate their PTS associated with the traumatic event that they reported in the memory recall test, using the PTSD Checklist for DSM-5 (PCL-5) (Blevins et al., 2015). The PCL-5 includes 20 items and measures all DSM-5 (APA, 2013) based clusters of PTSD, namely re-experiencing (criterion B), avoidance and numbing (criterion C), negative alterations in cognitions and mood (criterion D), and hyperarousal (criterion E). Participants indicated the presence of these symptoms (e.g., "Repeated, disturbing dreams of the stressful experience") in the past month, on a 5-point Likert scale (0 = "*not at all*" to 4 = "*extremely*"). The total score indicates overall PTS. The psychometric properties of the questionnaire are adequate (Blevins et al., 2015; Krüger-Gottschalk et al., 2017). In the current sample, α was .93.

2.4 Statistical Analysis

One respondent indicated that they could not recall a trauma memory and did not complete the survey, resulting in a final sample of 459 participants. For our first aim, to examine the nature and content of the traumatic memories reported by participants, the memory descriptions were categorized using the steps of Thematic Analysis (Braun & Clarke, 2021). Descriptions of the memories varied in length from 5 to 200 words in total. As a first step, one researcher (NM) summarized each description in a maximum of six words (e.g., "Sexual abuse during party with a friend") and formulated the common category that the memory could be assigned to. For instance, "sexual abuse during a party with a friend" was labelled as "sexual abuse". This resulted in 26 different categories.

As a second step, NM and a research assistant discussed the formulation, logic, and meaning of these 26 categories and discussed the categories they disagreed. During the discussion, it was concluded that certain categories overlapped significantly, making it difficult to determine which category a memory should be assigned to. Eventually, a consensus was reached to combine overlapping categories, leading to a total of 24 categories. As a third step, NM and the research assistant independently assigned each memory to these 24 categories. The inter-rater reliability between the researchers was good (Cohen's Kappa = .88, $p < .05$). The same procedure was followed for the descriptions of the follow-up question about the moral conflict: "What was your moral conflict associated with/during this event?" After consensus, 13 moral conflicts were distinguished. Researcher NM and the research assistant independently rated each description of the moral conflicts according to one of the 13 categories. The inter-rater reliability between the researchers was good (Cohen's Kappa = .82, $p < .001$).

The data were checked for univariate and multivariate outliers according to the procedure by Tabachnick and Fidell (2018), and SPSS 27 was used. To identify univariate outliers, z-scores were created, and multivariate outliers were detected with Mahalanobis distances ($p < .001$). There were no outliers. Also, the assumptions of normality, linearity, and homoscedasticity were not violated. The Durbin Watson statistic was used to detect autocorrelation in the residuals from a regression analysis and showed no autocorrelation (value = 2.0). Participants were divided into two groups based on their responses to the question: "Have you experienced a moral conflict associated with/during this event?" Those who answered "yes" were assigned to the trauma memory with moral conflict group, while those who answered "no" were assigned to the trauma memory without moral conflict group. For our second aim, to explore differences in event-centrality and memory characteristics between the two groups, a one-way MANOVA was performed with group (i.e., participants recalling trauma memories with vs. without moral conflict) as a between-subject variable and event-centrality and memory characteristics as dependent variables. For our third aim, to study differences between the two groups in terms of current emotional distress, emotions experienced *during* the event, and PTS, a one-way MANOVA was performed with group as a between-subject variable and current emotional distress, the eight emotion ratings, and PTS as dependent variables. For our fourth aim, for both groups separately, Pearson correlations were calculated between event-centrality, memory characteristics, and PTS.

3. RESULTS

3.1 Descriptive statistics

Table 1 summarizes the demographic characteristics of the final sample (*N* = 459). Participants were mostly female (73.4%) and were aged between 18 and 30 years. The ethnicity of the students was predominantly Dutch (99.1%). In total, 19.4% of the participants received current psychological treatment, and 38.6% had received psychological treatment in the past. In the total sample, 60.3% of the participants scored above the cut-off score of 34 on the PCL-5, indicating clinically relevant PTS.

Table 1 Demographic characteristics (*N* = 459)

Characteristics	*n*	%	Mean	SD	Range
Age			22.30	2.86	18 – 30
Gender					
Male	114	24.8			
Female	337	73.4			
Non-binary	8	1.7			
Ethnicity					
Dutch	455	99.1			
Other	4	0.9			
History of psychological treatment					
Currently in treatment	89	19.4			
Treatment in the past	177	38.6			
Never in treatment	193	42.0			
PTS			41.1	15.7	20 – 84

Note. PTS = Posttraumatic Stress

3.2 Content of trauma memories

Table 2 shows the temporal proximity of the trauma memories. Tables 3 and 4 show the categories of trauma memories and moral conflicts. Most recalled traumatic events occurred 2 – 5 years ago (35.7%) or more than one month, but less than 1 year ago (29.6%). A chi-square test of independence was performed to examine the relation between group (trauma memory with moral conflict vs. without moral conflict) and temporal proximity. Groups did not differ in terms of temporal proximity, X^2 (7, N = 459) = 6.23, p = .52.

Table 2 Temporal proximity of the memories of traumatic events with and without moral conflict (*N*= 459)

		Total
	Temporal proximity ("when did the event occur?")	***n* (%)**
1	Past week	20 (4.4)
2	Past month	30 (6.5)
3	More than one month, but less than 1 year ago	136 (29.6)
4	2-5 years ago	164 (35.7)
5	6 -10 years ago	73 (15.9)
6	More than 10 years ago	36 (7.8)

Of the total sample, 210 participants (45.8%) recalled a trauma memory with a moral conflict, while 249 participants (54.2%) recalled a trauma memory without a moral conflict. For participants recalling trauma memories with moral conflict, the most frequently reported traumatic events were "Sexual assault" (e.g., abuse, harassment, rape) (43/210 = 20.5%) and "Physical/verbal violence" (43/210 = 20.5%). For sexual assault, the most common moral conflict concerned: "Should I share personal information about the assault or not?" (8/43 = 18.6%). For physical/verbal violence, the most frequently reported moral conflict concerned: "Witnessing that someone else acted (or failed to act) morally right" (10/43 = 23.2%). The third most frequently reported event was "Coping with a loved one's physical or mental illness" (14/210 = 6.7%). Examples of this type of event included: supporting a friend who experienced a psychosis due to drug use and coping with a father struggling with alcohol addiction. For this event, the most common moral conflict was: "Should I choose for myself or my loved one?" (5/14 = 35.7%).

The fourth most frequently reported event was "Being witness of a suicide attempt or self-harming behaviour" (14/210 = 6.7%). The most frequently reported conflict of this event was: "Regret, doubt or guilt about the acts (or failures to act) of oneself" (4/14 = 28.6%). Examples of this type of event included: discovering a parent who had died by suicide or supporting a friend who engaged in self-harm. For participants recalling trauma memories without moral conflict, the most frequently reported traumatic event was "Death of a loved one" (34/249 = 13.7%), followed by "Physical/verbal violence" (29/249 = 11.6%), "Sexual assault" (e.g., abuse, harassment, rape) (25/249 = 10%), and "Coping with a loved one's physical or mental illness" (22/249 = 8.8%). As further discussed below, it was interesting that these last three categories of events were reported both as events involving a moral conflict and as events without a moral conflict.

Table 3 Descriptions of trauma memories with and without moral conflict (*N* = 459)

		Trauma memories with moral conflict	Trauma memories without moral conflict	Total
		***n/n* total in this group (%) *n* = 210**	***n/n* total in this group (%) *n* = 249**	***n/n* total in total sample (%) *N* = 459**
1	Physical/verbal violence (personally experienced or witnessed)	43/210 (20.5%)	29/249 (11.6%)	72/459 (15.7%)
2	Sexual assault (e.g., abuse, harassment, rape) (personally experienced)	43/210 (20.5%)	25/249 (10.0%)	68/459 (14.8%)
3	Coping with a loved one's physical or mental illness (e.g., alcohol abuse by father)	14/210 (6.7%)	22/249 (8.8%)	36/459 (7.8%)
4	Being witness of a suicide attempt or self-harming behaviour	14/210 (6.7%)	20/249 (8%)	34/459 (7.4%)
5	Death of a loved one	9/210 (4.3%)	34/249 (13.7%)	43/459 (9.4%)
6	Transportation accident (personally experienced)	8/210 (3.8%)	19/249 (7.6%)	27/459 (5.9%)
7	Divorce between parents (personally experienced)	11/210 (5.2%)	9/249 (3.6%)	20/459 (4.4%)
8	Coping with situations as a result of psychological or medical illness (e.g., hospitalization, psychosis after drugs abuse) (personally experienced)	6/210 (2.9%)	22/249 (8.8%)	28/459 (6.1%)
9	Out-of-home displacement by authorities or parents/ran away from home (personally experienced)	5/210 (2.4%)	2/249 (0.8%)	7/459 (1.5%)
10	Relationship break-up (personally experienced)	3/210 (2.4%)	7/249 (2.8%)	12/459 (2.6%)
11	Coping with a partner who cheated (personally experienced)	4/210 (1.9%)	6/249 (2.4%)	10/459 (2.2%)

Table 3 continued

		Trauma memories with moral conflict	Trauma memories without moral conflict	Total
		***n/n* total in this group (%) *n* = 210**	***n/n* total in this group (%) *n* = 249**	***n/n* total in total sample (%) *N* = 459**
12	Serious accident at work, home, or during recreational activity (e.g., falling from horse) (personally experienced)	4/210 (1.9%)	9/249 (3.6%)	13/459 (2.8%)
13	Socially isolated, ostracized, or bullied (personally experienced)	4/210 (1.9%)	10/249 (4.0%)	14/459 (3.1%)
14	Actively considering suicide or committing a suicide attempt (personally experienced)	4/210 (1.9%)	1/249 (0.4%)	5/459 (1.1%)
15	Fire (personally experienced or witnessed)	2/210 (1.0%)	1/249 (0.4%)	3/459 (0.7%)
16	Unwanted pregnancy or abortion (personally experienced)	2/210 (1.0%)	1/249 (0.4%)	3/459 (0.7%)
17	Being witness of a drowning	1/210 (0.5%)	2/249 (0.8%)	3/459 (0.7%)
18	Discrimination or racism (personally experienced or witnessed)	1/210 (0.5%)	1/249 (0.4%)	2/459 (0.4%)
19	Held hostage (personally experienced)	1/210 (0.5%)	1/249 (0.4%)	2/459 (0.4%)
20	Theft/robbery/burglary (personally experienced)	1/210 (0.5%)	4/249 (1.6%)	5/459 (1.1%)
21	Cheating on partner	1/210 (0.5%)	1/249 (0.4%)	2/459 (0.4%)
22	Stalking (personally experienced)	0/210 (0%)	2/249 (0.8%)	2/459 (0.4%)
23	Other	14/210 (6.7%)	6/249 (2.4%)	20/459 (4.4%)
24	Unknown or unclear	13/210 (6.2%)	15/249 (6.0%)	28/459 (6.1%)

Table 4 Descriptions of moral conflicts for the group participants recalling trauma memories with moral conflict (*n* = 210)

		Trauma memories with moral conflict
		***n/n* total in this group (%) *n* = 210**
1	Regret, doubt, or guilt about the acts (or failures to act) of oneself (e.g., "I acted wrong")	35/210 (16.7%)
2	Making a difficult decision (e.g., about medical intervention, deciding between parents in divorce, etc.)	27/210 (12.9%)
3	Should I share personal information (and betray another person) or keep the secret?	25/210 (11.9%)
4	Should I choose what is in my best interest or others?	22/210 (10.5%)
5	Should I stand up for myself and set boundaries or not?	20/210 (9.5%)
6	Witnessing that some else acted (or failed to act) morally right (e.g., "He shouldn't have harmed me ")	13/210 (6.2%)
7	Should I intervene to prevent harm to others or not?	10/210 (4.8%)
8	Was I guilty, or was the other person guilty?	10/210 (4.8%)
9	Should I break up a relationship or not?	5/210 (2.4%)
10	Should I report to the police or not?	5/210 (2.4%)
11	Should I end the contact with another person or not?	2/210 (1.0%)
12	Should I confront someone with his/her behaviour or not?	2/210 (1.0%)
13	Unclear or unknown	34/210 (16.2%)

3.3 Memory characteristics and event-centrality of trauma memories

Table 5 shows the means, standard deviations, and *F*-tests of the one-way multivariate analysis of variance in event-centrality and memory characteristics. The overall main effect of group (e.g., participants recalling trauma memories with vs. without moral conflict) was significant, Wilks' $\Lambda = .94$, $F(10, 448) = 2.71$, $p < .01$, partial $\eta^2 = .06$. Participants recalling trauma memories with a moral conflict rated their memory as more central than participants recalling trauma memories without a moral conflict, $F(1, 457) = 4.25$, $p < .05$, $\eta_p^2 < .01$. Also, participants in the former group rated their memory more often from observer perspective ("In my memory, I see this experience through the eyes of others"), $F(1, 457) = 17.36$, $p < .001$, $\eta_p^2 = .04$, and with more distance from the self ("I feel like the person in this memory is a different person than who I am today"), $F(1, 457) = 8.03$, $p < .01$, $\eta_p^2 = .02$. Moreover, participants in this group

indicated that their memory was more determined for their self-view ("This memory determines how I see myself"), $F(1, 457) = 4.28$, $p < .05$, $\eta_p^2 = <.01$, than participants recalling trauma memories without a moral conflict. Groups did not differ in terms of the memory characteristics coherence, accessibility, field perspective, sharing, sensory details, and vividness, all Fs < 1, all $ps > .08$.

3.4 Emotional distress and PTS associated with trauma memories

Table 6 shows the means, standard deviations, and F-tests of the one-way multivariate analysis of variance in emotional distress (experienced during the events and currently) and PTS. The overall main effect of group was significant, Wilks' $\Lambda = .84$, $F(13, 442) = 6.34$, $p < .001$, partial $\eta^2 = .16$. Participants recalling trauma memories with a moral conflict had experienced more shame, $F(1, 454) = 46.59$, $p < .001$, $\eta_p^2 = .09$, guilt, $F(1, 454) = 31.92$, $p < .001$, $\eta_p^2 = .07$, disgust, $F(1, 454) = 16.63$, $p < .001$, $\eta_p^2 = .03$, and horror, $F(1, 454) = 24.56$, $p < .001$, $\eta_p^2 = .05$, during the traumatic event compared to their counterparts recalling a memory without a moral conflict. Participants in the former group also reported more current emotional distress in response to the trauma memory, $F(1, 454) = 4.53$, $p < .05$, $\eta_p^2 = .01$, and more PTS compared to the latter group, $F(1, 454) = 11.09$, $p < .001$, $\eta_p^2 = .02$. Groups did not differ in terms of fear, panic, anger, and sadness experienced during the event, all $Fs < 1$, all $ps \geq .27$.

Table 5 Means, standard deviations, and F-tests of the one-way multivariate analyses of variance in event-centrality and memory characteristics of participants reporting trauma memories with and without moral conflict ($N = 459$)

Measure	Trauma memories with moral conflict		Trauma memories without moral conflict		$F(2, 201)$	η_p^2
	M	*SD*	*M*	*SD*		
Event-centrality	21.04	6.78	18.60	7.24	4.25*	<.01
Vividness	3.90	0.87	3.80	1.00	1.32	<.01
Self-view	3.26	1.16	3.02	1.27	4.28*	<.01
Sensory details	2.96	1.24	2.80	1.27	1.89	<.01
Accessibility	4.10	0.86	4.05	0.94	0.45	<.01
Coherence	3.42	1.28	3.28	1.21	1.59	<.01
Sharing	4.05	1.04	4.07	1.03	0.03	<.01
Distancing	3.57	1.17	3.23	1.32	8.03**	.02
Field perspective	3.73	1.07	3.90	0.99	2.99	<.01
Observer perspective	2.70	1.23	2.24	1.15	17.36***	.04

Note. PTS = Posttraumatic Stress; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 6 Means, standard deviations, and *F*-tests of the one-way multivariate analyses of variance in emotional distress and PTS of participants reporting trauma memories with and without moral conflict (*N* = 459)

Measure	Trauma memories with moral conflict		Trauma memories without moral conflict		*F*(2, 201)	ηp2
	M	*SD*	*M*	*SD*		
Current emotional distress	61.93	20.81	57.31	25.24	4.53*	.01
Fear	5.91	1.36	6.01	1.24	0.60	<.01
Horror	5.44	1.54	4.62	1.93	24.56***	.05
Panic	5.82	1.28	5.73	1.49	0.44	<.01
Shame	4.94	2.01	3.57	2.25	47.59***	.09
Guilt	4.97	2.01	3.89	2.07	31.92***	.07
Sadness	5.90	1.53	6.06	1.51	1.20	<.01
Disgust	4.63	1.93	3.84	2.19	16.63***	.03
Anger	4.88	1.87	4.89	1.81	0.00	<.01
PTS	43.76	15.98	38.90	15.15	11.09***	.02

Note. PTS = Posttraumatic Stress; * $p < .05$, *** $p < .001$.

3.5 Correlations between event-centrality, memory characteristics, and PTS

Tables 7 and 8 show correlations for the group of participants recalling a trauma memory with and without a moral conflict, respectively.

3.5.1 Results for participants recalling trauma memories with moral conflict

We found a weak positive correlation between event-centrality and PTS. Furthermore, event-centrality showed weak positive correlations with the memory characteristics self-view and sharing. In addition, PTS showed a moderate positive correlation with the memory characteristics self-view and weak correlations with vividness, sensory details, distancing, and observer perspective. Overall, the strongest correlation was between PTS and the memory characteristic self-view.

3.5.2 Results for participants recalling trauma memories without moral conflict

A moderate positive correlation was found between event-centrality and PTS. Furthermore, event-centrality showed weak positive correlations with the memory characteristics self-view, sensory details, distancing, and observer perspective. Also, PTS showed weak positive correlations with the memory characteristics vividness and observer perspective, and moderate correlations with self-view, sensory details, and distancing. Again, the strongest correlation was between PTS and the memory characteristic self-view.

Table 7 Descriptive Statistics and Correlations for event-centrality, PTS severity, and memory characteristics in participants recalling trauma memories with moral conflict (n = 210)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Event-centrality	23.85	6.19															
2 PTS	43.76	15.98	.23**														
3 Vividness	3.9	0.90	.15*	.14*	.20**	.07	.08	.12									
4 Self-view	3.16	1.14	.18**	.39**	.32**	.33**	.39**	.30**	.23**								
5 Sensory details	2.60	1.25	-.04	.19**	.25**	.11	.09	.18*	.32**	.19**							
6 Accessibility	3.89	0.92	-.05	.00	.09	.01	-.06	-.02	.42**	.03	.16*						
7 Coherence	3.48	1.15	-.00	-.11	-.00	-.05	-.18*	-.11	.27**	-.03	.13	.47**					
8 Sharing	3.60	1.20	.14*	.00	.04	-.08	-.03	.04	.23**	.08	.14*	.13	.17*				
9 Distancing	3.14	1.29	-.03	.15*	.08	.18**	.11	.17*	-.03	.37**	.09	-.07	-.25**	.00			
10 Field perspective	3.91	0.88	.06	-.06	-.02	-.07	-.05	-.06	.16*	-.03	.06	.34**	.30**	.20**	-.08		
11 Observer perspective	2.38	1.15	-.02	.17*	.19**	.16*	.12	.13	.02	.14*	.12	-.09	-.13	-.12	.21**	-.53**	

Note. PTS = Posttraumatic Stress; * $p < .05$, ** $p < .01$.

Table 8 Descriptive Statistics and Correlations for event-centrality, PTS severity, and memory characteristics in participants recalling trauma memories without moral conflict (n = 249)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Event-centrality	22.59	6.85															
2 PTS	38.90	15.15	.32**														
3 Vividness	3.58	0.94	.09	.20**	.25**	.12	.16*	.16*									
4 Self-view	2.80	1.23	.29**	.43**	.36**	.33**	.43**	.31**	.22**								
5 Sensory details	2.35	1.18	.21**	.30**	.33**	.21**	.26**	.21**	.41**	.28**							
6 Accessibility	3.83	0.97	-.08	-.07	.03	-.09	-.08	-.09	.43**	.05	.21**						
7 Coherence	3.42	1.05	.00	-.04	-.03	-.05	-.02	-.04	.40**	.00	.15*	.49**					
8 Sharing	3.43	1.24	-.12	.05	.13*	-.03	.01	.05	.26**	.09	.14*	.42**	.24**				
9 Distancing	2.95	1.31	.27**	.35**	.25**	.26**	.34**	.29**	.12	.41**	.18**	.00	-.02	.07			
10 Field perspective	3.93	0.98	.02	-.05	-.00	-.04	-.06	-.06	.28**	.02	.14*	.34**	.33**	.21**	-.04		
11 Observer perspective	2.16	1.10	.16*	.26**	.18**	.17**	.23**	.26**	.03	.16*	.20**	-.04	-.06	.01	.32**	-.41**	

Note. PTS = Posttraumatic Stress; * $p < .05$, ** $p < .01$.

4. DISCUSSION

The overarching objective of this study was to examine the event-centrality and memory characteristics of trauma memories with and without a moral conflict and associations with emotional distress and PTS in a non-clinical sample. Our first aim was to examine the content of the traumatic events participants had experienced, whether these events involved a moral conflict, and the specific characteristics of these possible conflicts. The most frequently reported events by participants recalling trauma memories with a moral conflict were sexual assault and physical/verbal violence. The most frequently reported event by participants recalling trauma memories without a moral conflict was the death of a loved one. Loss of a loved one, for example, is often due to natural causes (e.g., illness, accident, aging), which are unrelated to direct moral responsibility. The person grieving is typically not responsible for the loss, which reduces the likelihood of experiencing moral conflict. In contrast, violent events often include active moral decisions and responsibility (e.g., using force, failing to intervene, or harming others). On the one hand, this suggests that certain types of traumatic events (e.g., sexual and physical violence) may be inherently more associated with a moral conflict and become more morally distressing than others (e.g., loss). On the other hand, the findings also indicate some overlap in the types of events, as participants recalling trauma memories without moral conflict also reported experiences of sexual or physical violence, for instance, though less frequently than participants recalling trauma memories with moral conflict. This implies that it is the individual's *appraisal* of the event, more than the *nature* of the event itself, that determines whether a moral conflict is perceived. This is consistent with theory and research showing that, following both morally injurious events (Hoffman et al., 2018; Nickerson et al., 2020) and other types of potentially traumatic events (Ehlers & Clark, 2000; Foa et al., 1999), the appraisal of the events is more determinative of subsequent PTS than the nature of the event itself.

For our second aim, we explored the event-centrality and memory characteristics of trauma memories with and without a moral conflict. Our findings revealed that participants recalling trauma memories with moral conflict perceived their memory as more central to their self-concept and as more defining for their self-view compared to participants recalling trauma memories without moral conflict. However, it should be noted that the effect size was very small (< .01), suggesting that while the finding was statistically significant, its practical or clinical relevance may be limited. Also, participants recalling a trauma memory with a moral conflict recalled their memory more often from an observer perspective and with greater distance from the self than participants recalling a trauma memory without moral conflict. This

is consistent with studies showing that memories of immoral behaviour were more central to one's personal identity and were remembered with more distance from the self than memories of minor moral transgressions (Huang et al., 2020; Knez & Nordhall, 2017). Here again, it should be noted that the effect size for self-view was very small (< .01). Self-distancing and recalling from observer perspective are often considered as strategies to distance oneself from a negative memory and thereby reducing emotional distress (Kenny & Bryant, 2007; Libby & Eibach, 2002). This may be particularly compelling when a memory is important to one's self-view (Wilson & Ross, 2001). However, our findings that participants recalling trauma memories with a moral conflict reported higher levels of current emotional distress than participants recalling trauma memories without moral conflict, suggest that recalling from an observer perspective was not reducing emotional distress. Psychological distancing may serve not only as an emotion regulation strategy but also as a means of protecting and maintaining a desired identity (Wilson et al., 2009) and reducing its negative impact on our identity (Conway, 2005). By mentally pushing these events further away in time, individuals can preserve a coherent and positive self-concept despite past transgressions or failures (Wilson et al., 2009). More research is necessary to understand how memory characteristics, such as observer perspective and self-distancing, are linked to event-centrality and if these characteristics can be considered as adaptive or maladaptive strategies in processing trauma memories with moral conflict.

Our third aim was to study differences in emotional distress and PTS between participants recalling trauma memories with and without a moral conflict. Participants recalling trauma memories with a moral conflict reported elevated levels of emotional distress and PTS. This is broadly consistent with prior evidence showing that the experience of morally distressing events results in increased emotional burden in terms of concurrent psychopathology (Currier et al., 2015; Mooren, Boelen et al., 2024; Nash & Litz, 2013). We also found that recalling trauma memories with moral conflict was associated with more shame and guilt, which aligns with studies on moral distress and moral transgressions (Litz & Kerig, 2019; Litz et al., 2009; Mansfield et al., 2010). Interestingly, participants recalling trauma memories with moral conflict reported higher levels of horror and disgust during the traumatic event. There is little known about disgust and horror in relation to morally distressing events, but some studies described the experience of "moral disgust" in response to immoral behaviour (Oaten et al., 2018; Schaich Borg et al., 2008; Taylor & Uchida, 2022). The findings suggest that events involving violations of moral values can evoke a broader range of emotions, including guilt and shame, as well as disgust—potentially linked to a desire to avoid contamination by moral transgression—and horror, which may reflect a more

existential threat to one's values. It would be useful for future research to explore the role of (moral) emotions in traumatic life events to better understand why traumatic events with a moral conflict elicit higher levels of disgust and horror compared to those without moral conflict.

For our fourth aim, we examined to what extent event-centrality was associated with PTS and memory characteristics. In both groups, there was a significant association between event-centrality and PTS and PTS and the memory characteristic self-view. Although the relationship between event-centrality and PTS has been examined in the context of trauma memories in general, this study is the first to show the significance of event-centrality for trauma memories including moral conflict. Our findings are consistent with prior research studies demonstrating that event-centrality is associated with elevated PTSD symptomatology (da Silva et al., 2016; Gehrt et al., 2018; Robinaugh & McNally, 2010, 2011). A possible explanation for the elevated event-centrality and PTS, observed in individuals recalling trauma memories with moral conflict is that such memories may pose more challenge to personal integrity and the self-concept compared to those without moral conflict (Litz & Kerig, 2019). According to the Self-Memory System (SMS) theory (Conway, 2005), our autobiographical memory serves to preserve a coherent sense of self. Memories that significantly challenge or threaten our self-concept disrupt this coherence. However, further research is needed to better understand our finding that traumatic events involving moral conflict are experienced as more central and lead to heightened PTS symptoms compared to events without such conflict.

This study also has limitations that need to be considered. First, our sample consisted exclusively of highly educated young females, and many of the students experienced clinically significant PTSD, received psychological treatment, or had received treatment in the past. This is consistent with the broader trend of a significant rise in mental health issues, including PTSD, among students in recent years (Lipson et al., 2022; Zhai et al., 2024). The relatively high levels of individuals with PTSD in our sample may have affected their memory recall, as individuals with PTSD tend to recall primarily memories of threat (related to the trauma) (Sutherland et al., 2008), while forgetting other memories of everyday life (Pitts et al., 2022). Additionally, the sample characteristics limit the generalizability of the findings to populations in which exposure to traumatic events and increased PTS are rare, older individuals, males, those with lower educational backgrounds, and individuals without a history of trauma. It would be interesting for future studies to examine samples with a wider variation in demographic variables (e.g., age, gender, education levels, and cultural backgrounds). Second, to minimize the burden on participants to complete the survey,

memory characteristics were examined by using only a single item from each subscale of the MEQ. This may have compromised the validity of our assessment of the memory characteristics. Preferably, more extensive measures of memory characteristics are used in future research. Third, because this study utilized a cross-sectional design, we cannot draw conclusions about the temporal relationship between event-centrality and PTS and between other variables considered. Longitudinal research is necessary to gain a deeper understanding of these temporal associations in trauma memories with moral conflict. An important consideration in interpreting our findings is the role the individual played in the remembered event. Prior research (e.g., Mansfield, McLean, & Lilgendahl, 2010) suggests that roles one had during events may shape both the appraisal of the event and the emotional response it elicits. While we did not examine the role of participants in the current study, it would be interesting for future research, using within-person designs, to examine how event-centrality, PTS, and emotions experienced during events are qualified by the role one played during the event. Despite these considerations, this study contributes to previous research on the importance of event-centrality, memory characteristics, and PTS in trauma memories with and without moral conflict.

Conclusions

This study is among the first to explore the event-centrality and memory characteristics of trauma memories with and without moral conflict in the general population and the associations with emotional distress and PTS. Our findings underscore the significance of moral conflict in shaping the psychological and emotional aftermath of traumatic events. They indicate that trauma memories with a moral conflict are common in the general population, and not merely in high-risk populations. Additionally, our study suggests that event-centrality and memory characteristics play an important role in trauma memories with moral conflict. Being exposed to moral conflicts during traumatic events can result in increased emotional burden and PTS and should receive more attention in both research and clinical practice. In clinical practice, it seems important to explore whether a moral conflict was experienced during or after a traumatic life event. It seems likely that a different therapeutic approach is indicated for individuals struggling with the consequences of one or more traumatic events involving a moral conflict, compared to situations where no such conflict is present. In the former case, an approach that integrates trauma processing with attention to moral conflict may be appropriate, whereas in the latter, more generic trauma-focused treatments may be more suitable. Additionally, discussing how central this memory has become and how the memory impacts a client's self-view is crucial.

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The authors used Copilot and ChatGPT (OpenAI, 2025) to refine the clarity and grammar of the manuscript. No AI-generated content was included without human review.

Author Contributions

NM: conceptualization, methodology, formal analysis, writing – original draft preparation. SdlR: writing – review and editing, supervision. PB: writing – review and editing, supervision.

Data availability statement

The data are not publicly available due to their containing information that could compromise the privacy of the participants. Also, participants were not asked to give consent to save their data in a public data repository.

Disclosure of interest

The authors report no conflict of interest.

Ethics approval statement

The study was approved by the ethics committee of the faculty of Social and Behavioural Sciences of Utrecht University (file number 22-0133).

Transparency and openness

This study was not preregistered. We reported on data exclusions and all measures in the study. The dataset used in the current study has also been utilized in a separate research article examining the impact of moral transgression type on emotional, cognitive, and clinical outcomes. However, the research questions, analyses, and findings presented in this paper are distinct from those in the other research article that was submitted elsewhere.

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6

CHAPTER 6

The impact of self-directed, other-directed, and dual moral transgressions on emotional, cognitive, and clinical outcomes in emerging adults

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ABSTRACT

Background

Stressful events can cause individuals to act contrary to their moral standards, resulting in moral transgressions. Two types of moral transgressions are commonly distinguished: actively committing moral transgressions or failing to prevent harm to others (self-directed transgressions) and being exposed to the moral transgressions of others (other-directed transgressions). Evidence suggests that self-directed and other-directed moral transgressions lead to different psychological outcomes. However, this evidence is inconclusive, primarily based on clinical populations, and lacks a developmental perspective, including a focus on emerging adults.

Method

In this study, young adults recalled a memory of a morally distressing event, encompassing self-directed, other-directed, or dual transgressions. We compared the three groups reporting these transgressions in terms of emotions (fear, shame, guilt, and anger), negative cognitions (about self-blame, the self, and the world), and clinical outcomes (posttraumatic stress (PTS) and depression). Additionally, we explored the variables fear, negative cognitions about self-blame, the self, and the world as potential mediators between exposure to self-directed, other-directed, or dual transgressions and PTS.

Results

It was shown that exposure to dual transgressions results in elevated emotional and cognitive burden compared to self- or other-directed transgressions alone. Mediation analyses revealed that, compared to self-directed and other-directed transgressions, participants reporting dual transgressions exhibited more negative self- and world-cognitions, which was associated with increased PTS.

Conclusion

This study concludes that it is useful—both in research and clinical care—to distinguish between self-directed, other-directed, and dual transgressions.

Keywords

Moral transgressions, moral distress, PTS, depression, negative cognitions

1. INTRODUCTION

In general, individuals tend to perceive themselves as morally right and act according to their moral standards (Stanley & De Brigard, 2019). However, in some circumstances, individuals act in violation of their moral standards, resulting in moral transgressions. Moral transgressions include a moral conflict (i.e., internal tension that arises when an individual's moral values or beliefs are challenged) and can encompass minor transgressions like dishonesty or cheating during a game or more severe transgressions such as physical harm to others or, in extreme cases, taking someone's life during combat (Litz & Kerig, 2019, 2025). Two types of moral transgressions are commonly distinguished: actively committing moral transgressions or failing to prevent harm to others (self-directed transgressions) and being exposed to the moral transgressions of others (other-directed transgressions) (Jordan et al., 2017).

Evidence suggests that self-directed transgressions are related to emotions such as shame, guilt, and sadness, whereas other-directed transgressions are associated with anger, frustration, outrage, and resentment (Bryan et al., 2016; Litz et al., 2018; Litz & Kerig, 2019). Transgression types also vary in terms of their association with clinical outcomes such as symptoms of posttraumatic stress (PTS), posttraumatic stress disorder (PTSD), and depression (Griffin et al., 2020; Hoffman et al., 2019; Mensink et al., 2022). However, research findings are inconsistent. In military populations, it was found that increased exposure to other-directed transgressions, but not self-directed transgressions, was associated with higher levels of PTS (Bryan et al., 2016). In refugees, other-directed moral transgressions, and not self-directed transgressions, were associated with severe PTS and depression (Nickerson et al., 2018), whereas self-directed transgressions were only associated with lower levels of posttraumatic reexperiencing (Hoffman et al., 2018). Other studies showed that self-directed transgressions were associated with more reexperiencing symptoms than other-directed transgressions (Litz et al., 2009; Nash et al., 2013) or indicated that increased exposure to self- and other-directed transgressions was associated with poorer psychological or psychosocial functioning (Currier et al., 2018; Griffin et al., 2020; Mooren et al., 2024; Weber et al., 2023). These results have clinical relevance, as symptoms stemming from other-directed transgressions may necessitate different treatment interventions than those stemming from self-directed transgressions.

So far, studies on moral transgressions primarily focused on specific (clinical) populations of adults with elevated risk of being exposed to high levels of stress and traumatic events (e.g., military, police officers, refugees) with moral transgressions

resulting in moral injury rather than moral distress (Litz & Kerig, 2019; Mooren et al., 2024; Nickerson et al., 2022). While moral injury is typically studied in clinical or occupational populations, it can also emerge in childhood and young adulthood, sometimes in milder forms, resulting in moral distress rather than injury. This area remains understudied, despite its relevance for understanding everyday moral conflict in different ages. For instance, a study with young adults with histories of child welfare involvement showed that experiences such as maltreatment and not receiving protection from parents were experienced as morally distressing (Haight et al., 2022). Furthermore, research among university students shows that exposure to self-directed transgressions was strongly associated with emotional difficulties like guilt, shame, and depression, while other-directed transgressions showed weaker or no such links (Thomas et al., 2024). Veteran students reporting both betrayal and personal regret experienced higher levels of PTSD symptoms, relational issues, and spiritual distress (Griffin et al., 2020). In addition, adverse childhood experiences may heighten vulnerability to symptoms associated with moral distress later in life (Alexander et al., 2023; Roth et al., 2022; Williamson et al., 2021), highlighting the value of incorporating a developmental perspective in research on moral distress and moral injury.

Importantly, there is a lack of knowledge on factors that might mediate the linkage of different types of moral transgressions with trauma-related psychopathology. Hoffman (2018) suggested that fear may mediate the link between transgression type and PTS, as self-directed transgressions often involve less life threat and more control, potentially reducing fear and PTS risk. However, to our knowledge, this hypothesis has not been tested. Furthermore, negative cognitions might mediate the impact of different types of transgressions; indeed, one study found that negative beliefs about the self, self-blame, and the world mediated the relation between self-directed (but not other-directed) transgressions and PTS in veterans (Held et al., 2017). Negative cognitions about self-blame and the self were more strongly associated with self-directed transgressions, while negative views of the world were similarly linked to both self- and other-directed transgressions (Held et al., 2017).

Taken together, there have been some efforts to investigate psychological factors that mediate the relationship between transgression type and trauma-related psychopathology, but there is a need to further our knowledge about this issue, both for theoretical and clinical reasons. Accordingly, the overarching aim of the current study was to enhance knowledge about moral transgressions in emerging adults using a mixed-method design. Specifically, the aim was threefold. First, we examined the content of (memories of) morally distressing events the participants had

experienced, as well as the nature of the moral conflicts participants experienced during that event Secondly, we studied differences between moral transgression type (self, other, or dual) in terms of their psychological consequences, including emotions (e.g., fear, shame, guilt, and anger), negative cognitions (e.g., about self-blame, the self, and the world), and clinical outcomes (PTS and depression). Based on earlier research (Bryan et al., 2016; Currier et al., 2018; Litz et al., 2009; Nickerson et al., 2018), we expected other-directed transgressions to be associated with fear, anger, and negative worldviews, and self-directed transgressions with shame, guilt, and negative self-cognitions. No hypotheses were formulated on the linkage of different transgression types and PTS and depression, given that previous research in this area yielded inconclusive results. Thirdly, we investigated mediators between moral transgressions and PTS, focusing on fear and negative cognitions about self-blame, the self and the world. Drawing on earlier research (Held, Klasen, Zou et al., 2017; Hoffman et al., 2018), we expected that participants recalling other-directed transgressions were expected to report more fear and negative world cognitions than participants recalling self-directed transgressions, which was expected to be related to increased PTS. Exposure to self-directed transgressions was expected to be more strongly related to negative cognitions about self-blame and the self, which was expected to be related to increased PTS. Given the scarcity of studies on dual transgressions, no hypotheses were formulated for the comparisons with dual-transgressions.

2. METHOD

2.1 Participants and procedure

The current study relied on data from 209 students from Utrecht University. Students were recruited for an online survey via announcements on a website of the faculty of Social and Behavioural Sciences. They were eligible to participate if they responded positively to the statement: “In my life I experienced at least one (or more) traumatic events”, regardless of the nature of the event or the presence of psychological (trauma-related) complaints. After reading the information letter and giving consent, potential respondents signed up for the study and gained access to the anonymous self-paced survey. The survey included the memory recall test about a morally distressing event and measures detailed below. After completion, further brief written information was provided. All students received course credits for their participation. The study was approved by the ethics committee of the faculty of Social and Behavioural Sciences of Utrecht University (file number 22-0133.)

2.2 Material

2.2.1 Memory recall task

To gather information about morally distressing events participants had experienced, a "memory recall task" was developed, with the following instruction: "We now ask you to recall a memory of a stressful situation in which you experienced a moral conflict or dilemma. By this we mean that the situation was strongly against your norms and values. Below are a few examples: 1. You had to choose between two "evils", and the outcome was negative anyway. 2. During or after the event, you had many doubts about whether you made "the right" choice or acted "right". 3. The event conflicted with what you think is "right" or "wrong". 4. The event evokes negative feelings afterwards, because of your own behaviour (or inaction) or the behaviour of others. It is important to select a life-event that can (still) evoke negative feelings when you think back to it. Take a moment to focus and bring this memory to mind, allowing yourself to reflect on the details of the event, your feelings at the time, and its impact on you." Participants were instructed to describe their memories in a few sentences and then think about the moral conflict associated with the event: "What was your moral conflict associated with/during this event?". To distinguish self-directed and other-directed transgressions participants were asked to answer the question: "I experienced the moral conflict as a result of" by choosing one of the following answer options: 1 = "my own actions or failures to act"; 2 = "the actions or failures to act by others"; 3 = "both". Lastly, they were instructed to indicate when the event occurred.

2.3 Measures

2.3.1 Demographic characteristics

The following demographic variables were registered: age, gender (male, female, non-binary), ethnicity, and history of psychological treatment (currently in treatment, not in treatment, received treatment in the past).

2.3.2 Emotions associated with self-directed, other-directed, and dual transgressions

After participants described a memory of a morally distressing event, they were asked to rate to what extent they had experienced each of the following emotions when the event took place: fear ("e.g., "I felt fear during this event"), shame, guilt, and anger, on 8-point Likert scales (0 = "not at all", 7 = "extremely").

2.3.3 Negative cognitions associated with self-directed, other-directed, and dual transgressions

Negative cognitions were measured with the 9-item Posttraumatic Cognitions Inventory (PTCI-9; Wells et al., 2019). Participants were asked to rate nine cognitions (e.g., "The event happened because of the way I acted") in relation to the morally distressing event that they reported in the memory recall task, on a 7-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree). Items of the three subscales representing negative cognitions about self-blame, the self, and the world, respectively, showed adequate internal consistencies in our sample (Cronbach's αs = .73 – .85.).

2.3.4 PTS

Participants were instructed to rate their PTS associated with the morally distressing event that they reported in the memory recall test, using the PTSD Checklist for DSM-5 (PCL-5) (Blevins et al., 2015). This 20-item questionnaire measures all DSM-5 (APA, 2013) based clusters of PTSD: re-experiencing (criterion B), avoidance and numbing (criterion C), negative alterations in cognitions and mood (criterion D), and hyperarousal (criterion E). PTSD symptoms (e.g., "Repeated, disturbing dreams of the stressful experience") were measured for the past month, on a 5-point Likert scale (0 = "not at all" to 4 = "extremely"). The psychometric properties of the questionnaire are adequate (Blevins et al., 2015; Krüger-Gottschalk et al., 2017). In the current sample, α was .90.

2.3.5 Depression

Depression was measured with the subscale "depressive mood" of the Brief Symptom Inventory (Derogatis & Melisaratos, 1983). This subscale instructs participants to rate to what extent they experienced six symptoms of depression (e.g., "Feeling no interest in things") during the past seven days on a 5-point Likert scale (0 = "not at all" to 4 = "extremely"). In the current sample, the α was .89.

2.4 Statistical analysis

Three respondents indicated that they could not recall a morally distressing event, did not complete the survey, and were therefore removed from the dataset, resulting in a final sample of N = 206. To enhance the interpretability and added value of our findings, we employed a mixed-method exploratory sequential design (Creswell & Plano Clark, 2018). This approach allowed us to start with qualitative data collection, which subsequently informed the development of our quantitative phase, thereby ensuring a more comprehensive understanding of moral transgressions in emerging adults. For our first aim, to examine the nature and content of morally distressing memories reported by participants, we categorized descriptions of these memories,

using the steps of Thematic Analysis (Braun & Clarke, 2021). Descriptions of the memories varied in length from 8 to 200 words in total. As a first step, one researcher (NM) summarized each description in a maximum of six words (e.g., "a friend was physically attacked") and wrote down the common category that assembled these memories. For instance, "a friend was physically attacked" was labelled as "physical violence". This resulted in 22 different categories. As a second step, NM and a research assistant discussed the formulation, logic, and meaning of these 22 categories and reduced the number of memory categories to a total of 17 categories. As a third step, NM and the research assistant independently rated each memory description according to the 17 categories. The inter-rater reliability between the researchers was good (Cohen's Kappa = .80, $p < .001$). The same procedure was followed for the descriptions of the follow-up question about the moral conflict: "What was your moral conflict associated with/during this event?" After consensus, 13 moral conflicts were distinguished. NM and the research assistant independently rated each memory description according to one of the 13 moral conflicts. The inter-rater reliability between the researchers was good (Cohen's Kappa = .82, $p < .001$).

For our second aim, to study differences in emotional, cognitive, and clinical outcomes based on moral transgression type (self-, other-, or dual), we conducted three one-way MANOVAs with transgression type as a between-subject factor. The first included self-blame, negative self-, and world-cognitions as dependent variables; the second included fear, shame, guilt, and anger; and the third included PTSD symptoms and depression as dependent variables. As moral transgression type was a categorical variable with three groups, we used "simple/first" (self-directed vs. dual and other-directed vs. dual) and "simple/last" (self-directed vs. other-directed and self-directed vs. dual) as coding systems to make all pairwise group comparisons.

To address our third aim, we conducted mediation analyses to examine the extent to which the relationship between transgression type (self-directed, other-directed, or dual) and PTS was mediated by fear and negative cognitions about self-blame, the self, and the world. Since transgression type was a categorical variable with three levels, separate mediation models were used for each potential mediator, sequentially comparing (1) self-directed vs. other-directed transgressions, (2) self-directed vs. dual transgressions, and (3) other-directed vs. dual transgressions. In a final model, the significant mediators were added together in one mediation model. The bootstrapping procedure developed by Preacher and Hayes (2008) was used to generate indirect effects and we used the PROCESS macro function of SPSS. We used 5000 bootstrap resamples and focused on the bias corrected and accelerated confidence interval (CI). We adjusted the confidence interval to .99 to correct for

multiple testing. As transgression type was a categorial variable with three groups we used "sequential" and "indicator" as coding systems to make the group comparisons. We used SPSS version 27 for the analyses. The data were checked for univariate and multivariate outliers, according to the procedure by Tabachnick and Fidell (2018). To identify univariate outliers, z-scores were created, and multivariate outliers were detected with Mahalanobis distances ($p < .001$). No outliers were detected. Also, the assumptions of normality and multicollinearity were not violated. The assumption of homogeneity of variance was not violated except for the emotion rating guilt and therefore a Welch t-test was performed to compare this variable between subgroups.

3 RESULTS

3.1 Demographics

Participants were predominantly Dutch (99%) and female (75.7%), with an age range between 19 and 30 years. In total, 25.2% of the participants received current psychological treatment and 40.8% reported that they received psychological treatment in the past. There were no differences between the three groups (self-directed, other-directed, or dual transgressions) in terms of demographic variables considered, all $Fs \leq 2.18$, all $ps \geq .12$. Table 1 shows the descriptive statistics of the demographic variables.

Table 1 Descriptive statistics of demographic variables (N= 206)

Characteristics	*n*	%	Mean	SD	Range
Age			22.35	2.43	19 – 30
Gender					
Male	44	21.4			
Female	156	75.7			
Binary	6	2.9			
Ethnicity					
Dutch	204	99.0			
Other	2	0.9			
History of psychological treatment					
Currently in treatment	52	25.2			
Not in treatment	70	34.0			
Treatment in the past	84	40.8			
Posttraumatic stress severity			42.54	14.95	20 – 84
Depression severity			6.02	5.30	0 – 22

3.2 Content of memories of morally distressing events

Tables 2 and 3 show the categories of the memories and moral conflicts of the morally distressing events. Of the total sample (*N* = 206), 50 participants (24.3%) reported self-directed transgressions, 64 participants (31.1%) reported other-directed transgressions, and 92 (44.7%) reported dual transgressions. Most of the reported morally distressing events occurred 2–5 years ago (36.4%) or more than one month, but less than 1 year ago (28.6%). The remaining events occurred more than six years ago (23.8%), past month (8.7%), or past week (2.4%). Overall, the most frequently recalled memory of a morally distressing event was "physical/verbal violence" (30/206 = 14.6%) and the most prevalent moral conflict for this event was a result of the acts (or failures to act) of others (6/30 = 20%) (e.g., "I don't understand why he did this to me").

Below are examples of memories of morally distressing events, as reported anonymously by respondents.

> *"My parents divorced when I was nineteen, but before that, they had years of violent fights. I took all the responsibility on myself and often ended up in the middle of their conflicts. I was forced to choose between them, which was, of course, impossible. My parents were supposed to take care of me and protect us, but it was the other way around. I had to separate them, something I didn't want to do and certainly wasn't my responsibility as a child."*

The second most frequently recalled morally distressing event was about "sexual assault" (27/206 = 13.1%) (e.g., abuse, harassment, rape). For this event, the most common moral conflicts were a result of regret, doubt or guilt about the acts (or failures to act) of oneself (8/27 = 29.6%) (e.g., "I feel I should have acted differently to prevent this situation") and questioning whether to stand up for oneself and set boundaries or not (8/27 = 29.6%) (e.g., "Should I say "no" or let it happen?").

"I was drugged on a date, and when I woke up, I ran away. After that, he started threatening me, and he wanted my money. I faced the dilemma of either giving him the money, hoping that would make him leave me alone, although that went against my values because I didn't want to reward him. Or going to the police and refusing to pay, which came with a high risk that he might harm me."

"I was sexually abused (incest) for years, and even though I intellectually understand that I was a child, I still feel like I was partly the reason it happened. Did I provoke it? Did I bring it upon myself? Could I've done more to prevent this?"

The third most frequently recalled memory was about "sharing personal information about oneself or others" (23/206 = 11.2%). Examples were telling a boss that a colleague uses drugs during work or concealing the secret relationship of a friend. For most participants who recalled this memory (13/23 = 56.5%), the moral conflict was the decision to either conceal personal information for loyalty to another person or decide to be honest but betray a person.

The fourth most frequently recalled memory was "failing to help or support another person" (19/206 = 9.2%). Examples were not providing medical aid to a person in need after an accident or failing to prevent a friend or family member from getting emotionally or physically hurt. The most prevalent moral conflicts were questioning if one should intervene to prevent harm to others (5/19 = 26.3%) and regret, doubt, or guilt about the acts (or failures to act) of oneself (5/19 = 26.3%).

"My sister, who has PTSD, has made multiple suicide attempts. She didn't want to go to a psychiatric clinic. I often called 113 and the emergency line when she was suicidal again, although she said I shouldn't do this. But there was nothing we could do to change the situation. I often felt powerless and didn't know whether I should intervene or not."

"My father was an alcoholic, and this always put me in conflict. My mother told me not to get alcohol, but when she was away from home, my father manipulated me into getting alcohol for him anyway. This happened every day and felt like a dilemma because I love my parents unconditionally and I want to do everything to help them, but at the same time, you know it's not right."

For the group of participants recalling self-directed transgressions, the most frequently recalled event was failing to help or support another person (8/50 = 16%), followed by sharing personal information about oneself or others (6/50 = 12%), and actively committing harm to another person (6/50 = 12%). For the group of participants recalling other-directed transgressions, the most frequently recalled event was physical/verbal violence (12/64 = 18.8%), followed by sexual assault (7/64 = 10.9%), and sharing personal information about oneself or others (7/64 = 10.9%). For the group of participants recalling dual transgressions, the most frequently recalled event was sexual assault (16/92 = 17.4%), followed by physical/verbal violence (15/92 = 16.3%), and sharing personal information about oneself or others (10/92 = 10.9%).

3.3 Emotions associated with self-directed, other-directed, and dual transgressions

Table 4 shows the means, standard deviations, and F-tests of the one-way multivariate analyses of variance in fear, guilt, shame, and anger. The overall main effect of group (e.g., participants recalling self-directed, other-directed, or dual transgressions) was significant, Wilks' $\Lambda = .82$, $F(8, 400) = 5.18$, $p < .001$, partial $\eta^2 = .09$. Participants reporting self-directed transgressions, those reporting other-directed transgressions, and participants reporting dual transgressions did not differ in terms of feelings of fear, $F < 1$, but there were significant differences in terms of guilt, Welch's t-test (2, 116.78) = 10.61, $p < .001$, shame, $F(2, 203) = 4.29$, $p < .05$, $\eta_p^2 = .04$, and anger, $F(2, 203) = 7.45$, $p < .001$, $\eta_p^2 = .07$.

Participants reporting self-directed transgressions experienced higher levels of shame ($p < .01$) and guilt ($p < .001$) in comparison to participants who reported other-directed transgressions. Also, participants reporting dual transgressions experienced higher levels of shame ($p < .05$) and guilt ($p < .001$), in comparison to participants reporting other-directed transgressions. There were no differences between participants reporting self-directed transgressions and dual transgressions for shame ($p = .29$) and guilt ($p = .72$). In contrast, participants reporting other-directed transgressions

experienced higher levels of anger in comparison to participants who reported self-directed transgressions ($p < .001$), but there were no differences between other-directed transgressions and dual transgressions ($p = .35$). Also, participants reporting dual transgressions experienced higher levels of anger in comparison to participants who reported only self-directed transgressions ($p < .01$).

3.4 Negative cognitions associated with self-directed, other-directed, and dual transgressions

Table 5 shows the means, standard deviations, and one-way multivariate analyses of variance in negative cognitions. The overall main effect of group was significant, Wilks' $\Lambda = .78$, $F(6, 402) = 8.99$, $p < .001$, partial $\eta^2 = .12$. There were significant differences between participants reporting self-directed transgressions, those reporting other-directed transgressions, and participants reporting dual transgressions in terms of negative cognitions about self-blame, $F(2, 203) = 16.50$, $p < .001$, $\eta_p^2 = .14$, negative cognitions about the self, $F(2, 203) = 5.41$, $p < .01$, $\eta_p^2 = .05$, and negative cognitions about the world, $F(2, 203) = 8.34$, $p < .001$, $\eta_p^2 = .08$.

Participants reporting self-directed transgressions evidenced more self-blame than those with other-directed transgressions ($p < .001$) but not compared to those with dual transgressions ($p = .45$). Participants with dual-transgressions reported more negative cognitions about self-blame than those with other-directed transgressions ($p < .001$), and more negative self-cognitions than the other-directed group ($p < .01$). No significant differences in self-cognitions were found between self- vs. other-directed ($p = .25$) or dual vs. self-directed transgressions ($p = .08$). Regarding world cognitions, participants with dual-transgressions reported more negative views than those with self-directed transgressions ($p < .01$), and other-directed participants reported more than participants with self-directed transgressions ($p < .05$). No difference was found between dual and other-directed groups ($p = .07$).

3.5 PTS and depression associated with self-directed, other-directed, and dual transgressions

Table 6 shows the means, standard deviations, and one-way multivariate analyses of variance in PTS and depression. In the total sample, 65.2% of the participants scored above the cut-off score of 34 on the PCL-5, indicating clinically relevant PTSD symptoms. The overall main effect of group was not significant, Wilks' $\Lambda = .97$, $F(4,400) = 1.69$, $p = .15$, partial $\eta^2 = .02$, and, therefore, we performed no further separate ANOVAs.

3.6 Fear and negative cognitions as mediators in the relationship between moral transgression type and PTS

The summaries of the mediation analyses are shown in Table 7. The results revealed that fear was not a mediator in the relationship between transgression type and PTS for all group comparisons. The association of recalling self-directed vs. other-directed transgressions with PTS was mediated by negative cognitions about self-blame, such that participants recalling self-directed transgressions reported more self-blame, which was subsequently associated with more PTS. Also, the association of recalling other-directed vs. dual transgressions with PTS was mediated by negative cognitions about self-blame, such that participants recalling dual transgressions reported more self-blame, which was subsequently associated with more PTS. The association of recalling other-directed vs. dual transgressions with PTS was mediated by negative cognitions about the self, such that participants recalling dual transgressions reported more negative cognitions about the self, which was subsequently associated with more PTS.

Lastly, the association of recalling self-directed vs. dual transgressions with PTS was mediated by negative world cognitions, such that participants recalling dual transgressions reported more negative world cognitions, which was subsequently associated with more PTS. When negative cognitions about self-blame, the self, and the world were simultaneously considered in a multiple mediation model, only negative cognitions about the self and negative cognitions about the world were significant mediators. The association of recalling other-directed vs. dual transgressions with PTS was mediated by negative cognitions about the self, such that participants recalling dual transgressions reported more self-blame, which was subsequently associated with more PTS. Also, the association of recalling self-directed vs. dual transgressions with PTS was mediated by negative cognitions about the world, such that participants recalling dual transgressions reported more negative cognitions about the world, which was subsequently associated with more PTS.

Table 2 Descriptive statistics of qualitative analysis of the memories of morally distressing events (*N* = 206)

	Categorization	Self-directed	Other-directed	Dual transgression	Total	Moral conflict
		***n/n* total in this group (%) *n* = 50**	***n/n* total in this group (%) *n* = 64**	***n/n* total in this group (%) *n* = 92**	***n/n* total in total sample (%)**	**Most frequently reported moral conflict in total group *n/n* total in total sample (%)**
1	Physical/verbal violence (personally experienced or witnessed)	3/50 (6.0%)	12/64 (18.8%)	15/92 (16.3%)	30/206 (14.6%)	Witnessing the acts (or failures to act) of others 6/30 (20%)
2	Sexual assault (e.g., abuse, harassment, rape) (personally experienced)	4/50 (8.0%)	7/64 (10.9%)	16/92 (17.4%)	27/206 (13.1%)	Should I stand up for myself and set boundaries or not? 8/27 (29.6%) Regret, doubt or guilt about the acts (or failures to act) of oneself 8/27 (29.6%)
3	Sharing personal information about oneself or others	6/50 (12.0%)	7/64 (10.9%)	10/92 (10.9%)	23/206 (11.2%)	Should I share personal information (and betray another person) or keep the secret? 13/ 23 (56.5%)
4	Failing to help or support another person	8/50 (16.0%)	5/64 (7.8%)	6/92(6.5%)	19/206 (9.2%)	Should I intervene to prevent harm to others 5/19 (26.3%) Regret, doubt or guilt about the acts (or failures to act) of oneself 5/19 (26.3%).
5	Ending a relationship with an important other	4/50 (8.0%)	3/64 (4.7%)	4/92 (4.3%)	11/206 (5.3%)	Should I break up a relationship or not? 4/11 (36.4%)
6	Actively committing harm to another person (e.g., physical or verbal violence, stealing, discrimination, or causing a car-accident)	6/50 (12.0%)	1/64 (1.6%)	9/92 (9.8%)	16/206 (7.8%)	Regret, doubt or guilt about the acts (or failures to act) of oneself 8/16 (50%)
7	Making an important decision for another person about hospitalization, reanimation, euthanasia, vaccination, or medical treatment	3/50 (6.0%)	1/64 (1.6%)	5/92 (5.4%)	9/206 (4.4%)	Making a difficult decision 6/9 (66.7%)

Table 2 continued

	Categorization	Self-directed	Other-directed	Dual transgression	Total	Moral conflict
		***n/n* total in this group (%) *n* = 50**	***n/n* total in this group (%) *n* = 64**	***n/n* total in this group (%) *n* = 92**	***n/n* total in total sample (%)**	**Most frequently reported moral conflict in total group *n/n* total in total sample (%)**
8	Divorce of parents or deciding between parents in court	0/50 (0%)	6/64 (9.4%)	1/92 (1.1%)	7/206 (3.4%)	Making a difficult decision 4/7(57.1%)
9	Cheating on someone	1/50 (2.0%)	1/64 (1.6%)	2/92 (2.2%)	4/206 (1.9%)	Regret, doubt or guilt about the acts (or failures to act) of oneself 2/4 (50%)
10	Witnessing another person who undertakes a suicide attempt, threats to commit suicide, or self-harm	3/50 (6.0%)	4/64 (6.3%)	1/92 (1.1%)	8/206 (3.9%)	Regret, doubt or guilt about the acts (or failures to act) of oneself 3/8 (37.5%)
11	Discrimination or racism (personally experienced or witnessed)	1/50 (2.0%)	1/64 (1.6%)	5/92 (5.4%)	7/206 (3.4%)	Should I confront someone with his/her behaviour or not? 3/7 (42.8%)
12	Not receiving medical care or mental support from important others	0/50 (0%)	5/64 (7.8%)	2/92 (2.2%)	7/206 (3.4%)	Witnessing the acts (or failures to act) of others 2/7 (28.6%)
13	Partner cheated	2/50 (4.0%)	0/64 (0%)	2/92 (2.2%)	4/206 (1.9%)	Should I stand up for myself and set boundaries or not? 2/4 (50%)
14	Considering committing suicide	2/50 (4.0%)	1/64 (1.6%)	0/92 (0%)	3/206 (1.5%)	Making a difficult decision 2/3 (66.7%)
15	Socially isolated, ostracized, or bullied	1/50 (2.0%)	2/64 (3.1%)	0/92 (0%)	3/206 (1.5%)	Should I stand up for myself and set boundaries or not? 1/3 (33%)
16	Receiving orders from superiors to act against important moral codes	1/50 (2.0%)	1/64 (1.6%)	3/92 (3.3%)	5/206 (2.4%)	Regret, doubt or guilt about the acts (or failures to act) of oneself 3/5 (60%)
17	Unknow or unclear	5/50 (10.0%)	7/64 (10.9%)	11/92 (12%)	23/206 (11.2%)	-

Table 3 Descriptive statistics of qualitative analysis of the moral conflicts (*N* = 206)

		Self-directed	Other-directed	Dual	Total
	Categorization	***n/n* total in this group (%) *n* = 50**	***n/n* total in this group (%) *n* = 64**	***n/n* total in this group (%) *n*= 92**	***n/n* total in total sample (%)**
1	Should I share personal information (and betray another person) or keep the secret?	5/50 (10.0%)	5/64 (17.8%)	12/92 (13.0%)	22/206 (10.7%)
2	Should I choose what is in my best interest or others?	3/50 (6.0%)	4/64 (6.3%)	8/92 (18.7%)	15/206 (7.3%)
3	Should I stand up for myself and set boundaries or not?	4/50 (8.0%)	6/64 (19.4%)	10/92 (10.9%)	20/206 (9.7%)
4	Should I break up a relationship or not?	4/50 (8.0%)	2/64 (3.1%)	2/92(2.2%)	8/206 (3.9%)
5	Should I end the contact with another person or not?	0/50 (0%)	1/64 (1.6%)	3/92 (3.3%)	4/206 (1.9%)
6	Regret, doubt or guilt about the acts (or failures to act) of oneself (e.g., “I acted wrong”)	13/50 (26.0%)	8/64 (12.5%)	19/92 (20.7%)	40/206 (19.4%)
7	Witnessing acts (or failures to act) of others (e.g., “He shouldn’t have harmed me ”)	2/50 (4.0%)	8/64 (12.5%)	2/92 (2.2%)	12/206 (5.8%)
8	Making a difficult decision (e.g., about medical intervention, deciding between parents in divorce etc.)	3/50 (6.0%)	8/64 (12.5%)	7/92 (7.6%)	18/206 (8.7%)
9	Should I intervene to prevent harm to others or not?	3/50 (6.0%)	4/64 (6.3%)	8/92 (8.7%)	15/206 (7.3%)
10	Was I guilty or was the other person guilty?	1/50 (2.0%)	0/64 (0%)	2/92 (2.2%)	3/206 (1.5%)
11	Should I confront someone with his/her behaviour or not?	0/50 (0%)	0/64 (0%)	2/92 (2.2%)	2/206 (1.0%)
12	Should I report to the police or not?	1/50 (2.0%)	2/64 (3.1%)	3/92 (3.3%)	6/206 (2.9%)
13	Unclear or unknown	11/50 (22.0%)	16/64 (25%)	14/92 (15.2%)	41/206 (19.9%)

Table 4 Means, standard deviations, and *F*-tests of the one-way multivariate analyses of variance of differences in negative cognitions between participants reporting a moral conflict as a result of self, other, or dual transgressions (*N* = 206)

	Self-directed (s)		Other-directed (o)		Dual-transgressions (d)		*F*(2, 201)	ηp2	Group differences
Variables	***M***	***SD***	***M***	***SD***	***M***	***SD***			
Negative cognitions about self-blame	11.54	4.20	7.74	3.88	10.93	4.03	16.50***	.14	s = d > o
Negative cognitions about self	5.68	2.55	5.05	2.23	6.53	5.14	5.41**	.05	d > o = s
Negative cognitions about the world	9.90	4.05	11.58	3.55	12.79	4.15	8.34***	.08	d = o > s

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

Table 5 Means, standard deviations, and *F*-tests of the one-way multivariate analyses of variance in fear, shame, guilt, and anger as outcome variables of participants reporting a moral conflict as a result of self, other, or dual transgressions (*N* = 206)

	Self-directed (s)		Other-directed (o)		Dual-transgressions (d)		*F*(2, 201)	ηp2	Group differences
Variables	***M***	***SD***	***M***	***SD***	***M***	***SD***			
Fear	5.20	1.69	5.21	1.94	5.32	1.82	0.12	<.01	s = o = d
Shame	5.34	1.69	4.30	2.02	4.97	1.94	4.29*	.04	s = d > o
Guilt	5.64	1.54	4.24	2.05	5.53	1.61	12.81***	.11	s = d > o
Anger	4.18	1.80	5.44	1.67	5.16	1.94	7.47***	.07	o = d > s

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

Table 6 Means, standard deviations, and *F*-tests of the one-way multivariate analyses of variance in PTS and depression as outcome variables of participants reporting a moral conflict as a result of self, other, or dual transgressions (*N* = 206)

	Self-directed (s)		Other-directed (o)		Dual-transgressions (d)		*F*(2, 201)	ηp2	Group differences
Variables	***M***	***SD***	***M***	***SD***	***M***	***SD***			
Posttraumatic stress	39.20	14.23	41.03	14.18	45.42	15.47	3.34*	.03	s = o < d
Depression	5.60	5.34	5.63	4.74	6.54	5.64	0.76	.01	s = o = d

Note. * $p < .05$.

Table 7 Summary of mediation analyses with variables mediating the linkage between moral transgression type and posttraumatic stress (*N* = 206)

Model	Mediating variables	Total Effect (c)	Direct Effect (c')	Unique Indirect effects (a × b)	Bias corrected and Accelerated 95% CI	
					Lower	Upper
Comparison of participants reporting self vs. other-directed transgressions						
1	Total model Mediator: fear	1.503	1.539	-0.358	-1.974	1.975
2	Total model Mediator: negative cognitions about self-blame	1.501	4.454	-2.338	-7.847	0.223
3	Total model Mediator: negative cognitions about the self	1.361***	2.639	2.618	-0.899	7.485
4	Total model Mediator: negative cognitions about world	2.644***	7.419*	-2.161	-6.727	2.283
5	Total model Mediators:		6.981*			
	Negative cognitions about self-blame	0.687		-1.262	-4.999	2.048
	Negative cognitions about self	2.200***		-1.802	-5.604	1.919
	Negative cognitions about world	0.697*		1.341	-0.033	5.863
Comparison of participants reporting self-directed vs. dual transgressions						
1	Total model Mediator: fear	6.229**	5.888**	0.340	-1.311	2.205
2	Total model Mediator: negative cognitions about self-blame	0.716*	6.916*	0.119	-2.912	2.367
3	Total model Mediator: negative cognitions about self	1.361***	2.856	4.179	0.513	9.854
4	Total model Mediator: negative cognitions about world	2.644***	4.371	2.665	-1.838	8.584
5	Total model Mediators:		2.885			
	Negative cognitions about self-blame	0.687		-0.210	-1.493	1.031
	Negative cognitions about self	2.204***		2.221	-1.798	7.354
	Negative cognitions about world	0.697*		2.139	-0.033	5.863

Table 7 continued

Model	Mediating variables	Total Effect (c)	Direct Effect (c')	Unique Indirect effects (a × b)	Bias corrected and Accelerated 95% CI	
					Lower	Upper
Comparison of participants reporting other-directed vs. dual transgressions						
1	Total model Mediator: fear	4.725	4.349	0.376	-1.268	2.216
2	Total model Mediator: negative cognitions about self-blame	0.716*	-0.680	2.457	-0.480	6.360
3	Total model Mediator: negative cognitions about self	1.361***	0.217	1.560	-1.293	5.075
4	Total model Mediator: negative cognitions about world	2.644***	-3.049	4.926	1.141	9.873
5	Total model Mediators:		-4.097			
	Negative cognitions about self-blame	0.687		1.052	-1.681	4.357
	Negative cognitions about self	2.204***		4.023	0.675	8.811
	Negative cognitions about world	0.697*		0.799	-0.696	2.971

Note. CI = confidence interval; * $p < .05$, ** $p < .01$, *** $p < .001$.

4. DISCUSSION

We found that most participants experienced a moral conflict as a result of dual transgressions, followed by self-directed transgressions and other-directed transgressions. These results confirm the distinction between self-directed and other-directed moral transgressions in a general population, which is in line with findings in occupational groups (Litz et al., 2018; Nash & Litz, 2013). In addition, our results underscore the need to focus on dual transgressions as well. The most frequently reported memory of a morally distressing event was about physical/verbal violence, followed by sexual assault, and sharing personal information about oneself or others. Interestingly, different types of morally distressing events were associated with different moral conflicts. For instance, experiences of sexual assault elicited a moral conflict because of regret, doubt, or guilt about one's own actions (or omissions), whereas physical or verbal violence primarily elicited moral conflict due to the actions (or omissions) of others. Although the nature of the morally distressing events in our study differs from those observed in other groups (e.g., military veterans), a closer analysis of the moral conflicts also reveals similar themes (e.g., "Should I betray

another person?"). The appraisal of betrayal is often described in military people (Currier et al., 2015; Nash et al., 2013) and acting to prevent harm to others or failing to help others in need have been reported by refugees (Mooren et al., 2022) as well as by police officers (Blumberg et al., 2020). Hence, individuals face similar types of moral conflicts, despite differences in context and the severity of those consequences in terms of danger or harm.

Furthermore, results showed that participants reporting self-directed transgressions or dual transgressions experienced higher levels of shame and guilt than participants reporting other-directed transgressions. Interestingly, participants who reported other-directed transgressions or dual transgressions showed higher levels of anger than participants who reported self-directed transgressions. This is consistent with previous research suggesting that self-directed transgressions are more likely to result in internalizing emotions, while other-directed transgressions lead to externalizing emotions (Bryan et al., 2016; Litz et al., 2018; Litz & Kerig, 2019; Schorr et al., 2018; Stein et al., 2012). Our study contributes to existing research by demonstrating that exposure to dual transgressions increases emotional burden compared to self-directed or other-directed transgressions alone. A similar pattern was observed for the development of negative cognitions after experiencing morally distressing events. Our study found that participants reporting moral conflicts stemming from self-directed or dual transgressions reported more negative cognitions about self-blame and the self than those with other-directed transgressions. Additionally, participants with other-directed or dual transgressions reported more negative cognitions about the world compared to those with self-directed transgressions. This suggests that experiencing a moral conflict as a result of dual transgressions exerts a greater impact on how one perceives the self and the world than self-directed or other-directed transgressions alone. A possible explanation is that situations that involve both self-directed and other-directed transgressions create a more complex moral conflict, leading to more severe disruptions in both self and world perception.

Interestingly, participants reporting self-directed, other-directed, or dual transgressions did not differ in terms of PTS or depression symptoms. This is not in line with studies in clinical and severely traumatized populations that showed differences between self-directed and other-directed transgressions regarding PTS as well as depression symptoms, although the results were mixed (Bryan et al., 2016; Currier et al., 2018; Litz et al., 2009; Nash & Litz, 2013; Nickerson et al., 2018). Morally distressing events in clinical groups often include situations with high levels of distress, such as in combat or severe traumatic incidents. Whereas morally distressing events, in the general population, encompass a broader spectrum of situations where the moral

conflict is more subtle or intertwined with everyday ethical dilemmas. This may lead to moral distress, but not to severe psychological complaints.

Our last aim was to investigate mediators in the linkage between different moral transgressions and PTS. Negative cognitions about the self was only a mediator for the comparison between other-directed and dual transgressions and negative cognitions about the world was a mediator only for the comparison between self-directed and dual transgressions. This indicates that participants reporting dual transgressions exhibit more negative self- and world cognitions, which was associated with elevated levels of PTS. The influence of negative post-trauma cognitions has been studied extensively in relation to traumatic experiences and PTSD (Brown et al., 2019; Ehlers & Clark, 2000) and more severe negative cognitions are generally associated with more PTSD symptoms (Ter Heide et al., 2017; Zhou et al., 2015). Our findings are broadly consistent with prior research showing that similar cognitive processes may be involved in the development of PTS following a morally distressing event, specifically highlighting the role of negative self-perceptions (Held, Klassen, Zalta et al., 2017). This aligns with research studies showing that negative beliefs about the self and self-blame are often significant manifestations of moral injury (Currier et al., 2018; Litz & Kerig, 2019). Such cognitive distortions, including pervasive thoughts of self-worthlessness and blame, may exacerbate the psychological impact of morally distressing events. This study underscores the importance of addressing these negative cognitive processes in therapeutic interventions, as they appear to be important in the development and persistence of PTS symptoms.

This study is among the first to explore how different types of moral transgressions relate to psychological outcomes in emerging adults from the Dutch general population. However, there are limitations. First, our sample consisted mainly of highly educated young females, who are statistically more likely to report certain types of trauma (e.g., sexual assault), while they are less likely to encounter events like accidents, non-sexual assaults, witnessing death or injury, disasters, fires, or combat (Tolin & Foa, 2006). This may have affected the nature of reported morally distressing events. Additionally, 65.2% scored above the clinical threshold for PTSD symptoms, likely due to the inclusion criteria requiring prior traumatic experience. Future research should aim for a more diverse and representative sample to enhance generalizability across populations. Second, due to the cross-sectional design, causal relationships between morally distressing events and psychological outcomes cannot be determined. While our study serves as an initial exploration of morally distressing events concerning various psychological outcomes, future research should consider utilizing experimental designs to better elucidate causal relationships.

Despite these limitations, the study indicates that events involving both self- and other-directed moral conflict are associated with greater emotional and cognitive burden than singular transgressions. This highlights the need to assess how individuals interpret moral aspects of traumatic events, as these perceptions influence psychological symptoms and may require tailored therapeutic interventions. More systematic research is necessary to understand the relationship between morally distressing events and subsequent psychological well-being. Future studies should examine how morally distressing events impact mental health, considering factors such as the intensity of moral conflict, the personal significance of the event, and the context in which the event occurred.

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Artificial Intelligence tools

The authors used Grammarly and ChatGPT (OpenAI, 2025) to refine the clarity and grammar of the manuscript. No AI-generated content was included without human review.

Author Contributions

NM: conceptualization, methodology, formal analysis, writing – original draft preparation. SdlR: writing – review and editing, supervision. PB: writing – review and editing, supervision.

Data availability statement

The data are not publicly available due to their containing information that could compromise the privacy of the participants. Also, participants were not asked to give consent of saving their data in a public data repository.

Disclosure statement

No potential conflict of interest was reported by the authors.

Ethics approval statement

The study was approved by the ethics committee of the faculty of Social and Behavioural Sciences of Utrecht University (file number 22-0133).

Transparency and openness

This study was not preregistered. We reported on data exclusions and all measures in the study. The dataset used in the current study have also been utilized in a separate research article that examined the event-centrality and memory characteristics of trauma memories with and without moral conflict. However, the research questions, analyses, and findings presented in this paper are distinct from those in the other research article that was submitted elsewhere.

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GENERAL DISCUSSION

SUMMARY AND DISCUSSION

The overall aim of this dissertation was to contribute to the understanding of how exposure to moral transgressions impacts mental health across diverse populations.

Our main objective was threefold:

1 To examine the nature and psychological impact of morally distressing events and moral conflicts across diverse trauma-exposed populations.
2 To examine if subgroups could be identified that differed in terms of moral injury appraisals and posttraumatic stress (PTS) and to examine correlates of subgroup membership.
3 To investigate the characteristics and event-centrality of memories of moral transgressions (self-directed, other-directed, and dual) and associations with emotional-cognitive functioning, PTS, and depression.

In this last chapter, we will summarise and discuss the main findings, outline this dissertation's limitations, strengths, clinical implications, and address recommendations for future research.

Summary of main findings

In **Chapter 2,** we aimed to study the nature of potentially morally injurious events among refugees. We presented a retrospective study (secondary data analysis) based on clinical file studies involving 183 traumatized refugees who were referred to ARQ Centrum'45. Based on established definitions of a potentially morally injurious event (Litz et al., 2009, 2019), participants were assigned to a *moral injury group* if they reported experiencing lasting distress after exposure to an event that transgressed their moral beliefs. The remaining participants were allocated to the *group with no moral injury*. The type of events were categorized using a qualitative approach, and the groups were compared in terms of posttraumatic stress disorder severity, feelings of guilt, and general mental health symptoms. Of the total sample, 55 participants reported one or more acts of transgression (MI group) and 128 reported no acts of transgression (No-MI group). Analyses of events revealed six themes including 1) failing to prevent harm to others (23.6%), 2) not giving aid to people in need (16.4%), 3) leaving family members behind that consequently lead to injury or death of others (14.5%), 4) making indirect and direct moral decisions leading to injury or death of others (30.9%), 5) betrayal (3.6%), and 6) engaging in the harm of others (9.1%). No differences were found between groups on the clinical outcomes, except for feelings of guilt. This study offers insight into the types of moral transgressions refugees face and gives a broader picture of the moral challenges they encounter.

In **Chapter 3,** we aimed to identify classes of moral injury appraisals and PTSD symptoms among trauma-exposed refugees and to investigate differences between these classes in terms of demographics, general psychopathology, and depression. In total, 136 treatment-seeking refugees referred to ARQ Centrum'45 were asked to complete questionnaires on demographics, self-directed and other-directed moral injury appraisals, PTSD symptoms, general psychopathology, and depression. Latent profile analysis was conducted to identify classes, and regression analyses were conducted to explore correlates of class membership. The following three classes were identified: a "below average MI and below average PTSD class" (39%), an "average MI-self, below average MI-other and low PTSD class" (10%), and an "above average MI and above average PTSD class" (50%). Classes differed in terms of general psychopathology and depression, but not age and gender. The results of this study emphasize that moral injury can occur alongside PTSD but can also occur without PTS. This study highlights the importance of assessing and recognizing MI appraisals within treatment-seeking refugees to foster the application of customized treatment interventions for both moral injury and PTSD.

In **Chapter 4,** we examined a sample of trauma-exposed and treatment-seeking police officers. We aimed to identify classes of moral injury appraisals and PTSD symptoms among these police officers, while also investigating potential clinical differences between classes. In total, 421 trauma-exposed police officers referred to ARQ Centrum'45 completed measures on demographics and several clinical measurements, including moral injury appraisals (self-directed and other-directed), PTSD severity, and general psychopathology. Latent class and regression analyses were conducted to examine the presence of different classes and class differentiation in terms of demographics, general psychopathology, PTSD severity, mistrust, guilt, self-punishment, and feelings of worthlessness. The following five classes were identified: (1) a "Low MI, high PTSD class" (28%), (2) a "High MI, low PTSD class" (11%), (3) a "High MI, high PTSD class" (17%), (4) a "Low MI, low PTSD class" (16%), and (5) a "High MI-other, high PTSD class" (27%). There were significant differences between the classes in terms of age, general psychopathology, PTSD severity, mistrust, guilt, and self-punishment, but no differences for gender and feelings of worthlessness. Our results suggest that experiencing moral injury appraisals adds additional burden on top of experiencing PTSD in terms of concurrent psychopathology. Also, police officers in our sample were less inclined to appraise moral transgressions about themselves (self-directed transgressions). Taken together, this study underscores the importance of measuring and identifying moral injury in this particular group, as it can inform the improvement of treatment interventions for police officers exposed to different types of moral transgressions.

In **Chapter 5,** we aimed to examine the event-centrality (the extent to which a traumatic or significant event becomes a core part of a person's identity and life story) and memory characteristics of trauma memories with and without a moral conflict and associations with emotional distress and PTS in emerging adults. In total, 459 trauma-exposed university students were asked to recall a memory of a traumatic life event. Respondents who recalled trauma memories with a moral conflict were compared to respondents whose trauma memories did not involve a moral conflict in terms of the event-centrality of the trauma memory, memory characteristics, emotional distress, and PTS. Additionally, we examined associations of event-centrality with PTS and memory characteristics. Respondents recalling trauma memories with a moral conflict experienced more shame, guilt, disgust, and horror during the traumatic event and reported more PTS and current emotional distress. Also, their memories were more central, self-defining, and more often recalled from an observer perspective with greater self-distance than memories without moral conflict. Event-centrality was positively correlated with PTS. This study highlights that event-centrality and memory characteristics are important for trauma memories with moral conflicts. Being exposed to moral conflicts during traumatic events can result in increased emotional burden and PTS and should receive more attention in both research and clinical practice.

In the study in **Chapter 6,** we explored differences in psychological outcomes among 206 trauma-exposed emerging adults (undergraduate students) who recalled a morally distressing event as a result of self-directed, other-directed, or dual (both self-directed and other-directed) transgressions. The dataset used in this study has also been utilised in the study described in Chapter 5. However, the research questions, analyses, and findings presented in this paper are distinct from those in the other research article that was submitted elsewhere. We compared differences between self, other, and dual transgressions in terms of emotions (fear, shame, guilt, and anger), clinical outcomes such as PTS and depression, and negative cognitions about self-blame, the self, and the world. Additionally, we explored potential mediators between moral transgressions and PTS. It was shown that exposure to dual transgressions results in elevated emotional and cognitive burden compared to exposure to self- or other-directed transgressions alone, but no elevated PTS or depression. Mediation analyses revealed that, compared to participants reporting self-directed or other-directed transgressions only, participants who experienced dual transgressions reported more negative self- and world-cognitions, which were associated with increased PTS. Our study indicates that events involving both self- and other-directed moral conflict are associated with greater emotional and cognitive burden than singular transgressions. This highlights the need to assess how

individuals interpret moral aspects of traumatic events, as these perceptions influence psychological symptoms and may require tailored therapeutic interventions.

Discussion and integration

Our first aim was to gain insight into the nature of morally distressing events and their psychological impact across diverse trauma-exposed populations. Historically, research on moral transgressions focused on military populations (Currier et al., 2015; Nash et al., 2013). This dissertation broadened the scope by demonstrating that exposure to moral transgressions also occurs across various populations, including refugees, police officers, and trauma-exposed emerging adults. This thesis highlights both the differences and similarities in the moral conflicts encountered by these populations.

In terms of similarities, both police officers and emerging adults were exposed to road traffic accidents, physical violence, and situations where they had to cope with people who attempted to commit suicide. In addition, failing to prevent harm to others and not giving aid to people in need were indicated as moral transgressions for both refugees, undergraduate students, and police officers (Blumberg et al., 2020). In the sample of emerging adults, some reported betrayal, for instance, if they would conceal information about the cheating of a friend. Betrayal is often described in military personnel (Currier et al., 2015; Nash et al., 2013), although the context in which betrayal takes place in this group (e.g., war and combat) is fundamentally different from young adults. We also identified situations that were uniquely reported by a specific population. For instance, resuscitation was only reported by police officers, and leaving family members behind was only reported by refugees.

Overall, our results suggest that moral injury may be shaped not only by individual appraisals, but also by the social and occupational roles individuals occupy. It may be hypothesized that certain types of moral transgressions – such as those involving care and protection (e.g., failing to save someone, leaving someone behind) – are particularly salient and morally distressing in individuals whose identities are closely tied to caregiving, duty, or family responsibility. When people strongly identify with roles like caregiver, protector, or responder, perceived failures in these domains may evoke intense guilt, shame, or existential distress. Individuals whose self-concept is engulfed by caregiving or duty (sometimes called "*role engulfment*") (Skaff & Pearlin, 1992) may be especially vulnerable when moral transgressions conflict with that identity. In these cases, violations of caregiving expectations might trigger deeper moral distress and increased risk of PTSD or moral injury.

It was interesting to discover that emerging adults reported a range of morally distressing events, from relatively mild incidents, like relationship breakups or social rejection, to severe events such as rape and physical violence. This indicates that severe moral transgressions (which could be considered as *potentially morally injurious events*) might also be present in individuals without specific occupations that include high levels of threat and danger, such as military or police officers. This calls for a broader perspective on exposure to morally distressing or injurious events. However, further clarity is required to determine whether it is more appropriate to use the term *morally injurious events* or *morally distressing events*. Furthermore, research studies on PTS tend to focus on threats to life and physical danger, whereas this might be too limited. For instance, severe threats to one's social integrity, such as emotional abuse and bullying, can also lead to PTS and other mental health issues (Neuner, 2023). These threats may involve the violation of social motives and principles (e.g., status and belonging) (Neuner, 2023). Our research, described in this dissertation, accords with this perspective and demonstrates that the concept of "*threat*" should be interpreted more broadly. In the case of moral transgressions, the threat pertains to moral identity and the violation of significant moral values. Such threats may manifest even in the absence of physical risk, yet carry comparable psychological weight. Taken together, our findings support the notion that moral distress, and ultimately moral injury, is not exclusively connected with war-related trauma only but can arise in any context where individuals perceive a violation of deeply held moral beliefs, and this might be shaped by social or occupational roles. Overall, this asks for a more inclusive and generalizable framework for understanding the impact of moral transgressions during trauma.

One of the key theoretical contributions of this dissertation, in line with our second aim, is its identification of distinct subgroups based on moral injury (appraisals) and PTSD symptom profiles in refugees and police officers. Our findings emphasize that appraisals of moral injury can co-occur with PTSD but may also be experienced without PTSD symptoms. This aligns with scientific literature showing that moral injury represents a unique manifestation of trauma-related distress that is not fully captured by traditional PTSD frameworks (Barnes et al., 2019; Frankfurt & Frazier, 2016; Hall et al., 2021; Litz et al., 2009) and other studies using a person-centred approach (Mensink et al., 2022). Our results suggest that moral injury may be best conceptualized as a *dimensional* construct. This accords with transdiagnostic models of mental health that emphasize symptom continuums rather than strict categorical classifications (Litz et al., 2025).

Our results provide further support that exposure to moral transgressions during traumatic events may lead to additional mental burden in terms of emotional, cognitive, and clinical outcomes in comparison to exposure to traumatic events without moral conflict. This builds on previous studies on the co-occurrence of moral injury and PTSD (Currier et al., 2015; Nash & Litz, 2013) and emphasizes the importance of recognizing moral distress as a source of suffering. Traumatic events involving moral conflict activate both fear-based networks – linked to threats to life and safety – and moral-emotional and belief systems, which challenge core assumptions about the self, others, and the world. This convergence of threat and moral violation may contribute to the heightened complexity and difficulty in processing such experiences.

For our third aim, we investigated the characteristics and event-centrality of memories of moral transgressions and the associations with emotional-cognitive functioning, PTS, and depression. Our overall findings suggest that exposure to dual transgressions (a combination of self-directed and other-directed transgressions) is associated with elevated emotional burden, but not elevated PTSD and depression, compared to exposure to self-directed or other-directed transgressions alone. These findings contribute to theoretical models of moral injury by emphasizing the importance of distinguishing between these subtypes in both research and clinical assessment. Interestingly, most instruments that assess moral transgressions and/or moral injury do not differentiate between self-directed and other-directed moral transgressions, and, therefore, there is a lack of knowledge on the impact of dual transgression exposure on psychological well-being (Griffin et al., 2025).

Individuals can focus on *external reconciliation* (e.g., forgiving others or seeking justice for what others did) when they attribute the situation as an other-directed moral transgression or *internal reconciliation* (e.g., forgiving oneself and dealing with shame and guilt) if they attribute the event as a self-directed transgression (e.g., failing to prevent the situation). However, when individuals experience both types of transgressions simultaneously, they must navigate between both internal and external conflicts at once, which can be mentally exhausting and emotionally highly complex. In addition, exposure to dual transgressions may also lead to greater social isolation, as individuals might fear judgment for their own actions while simultaneously struggling with mistrust toward others due to how they were treated.

Lastly, the dissertation's findings on characteristics of trauma memories provide new insights into how memories with moral conflict are encoded and recalled in autobiographical memory. In other words, the findings indicate that memories involving moral conflicts influence how individuals process and store these

memories, affecting their perceived importance to personal identity. These findings align with theoretical models such as the Self-Memory System (Conway, 2005), which posits that autobiographical memories serve to maintain a coherent sense of self. In addition, from the perspective of SMS-theory, it could be postulated that moral transgressions may be particularly disruptive to one's self-concept, contributing to negative cognitive appraisals and prolonged distress. The role of event-centrality and autobiographical memory processes may pose value in explaining why experiencing moral transgressions leads to additional mental burden. It could be hypothesized that traumatic events involving moral conflict, as being more self-defining and central, may pose a greater challenge to personal integrity and the self-concept compared to events without moral conflict, which makes it difficult to maintain a coherent and positive self-image. Individuals who engaged in moral transgressions are more likely to blame themselves and develop a negative self-concept (Held et al., 2017). These internalized judgments can significantly impact how they process and make sense of their experiences.

Our research findings highlight that negative cognitions about the self and the world serve as key mediating factors in the relationship between exposure to moral transgressions and PTS. This suggests that it is not only the exposure to morally distressing events themselves that leads to psychological distress, but also how individuals appraise and integrate these experiences into their belief systems. This accords with cognitive models of PTSD (Ehlers & Clark, 2000), suggesting that the appraisal of the event is critical in affecting the outcomes of the traumatic event. When individuals begin to view themselves as inherently bad or the world as fundamentally unsafe or unjust, this might increase the risk of developing PTS symptoms.

Strengths

One of the primary strengths of this dissertation is its broad examination of moral transgressions across multiple populations, including refugees, police officers, and individuals from the general population (emerging adults). For instance, studying emerging adults allows moral stress to be viewed and studied from a developmental perspective as well. By exploring both clinical and non-clinical populations across various age groups, this research offers a more nuanced understanding of how exposure to moral transgressions manifests and impacts individuals – ranging from experiences of moral distress to the development of moral injury.

Also, this dissertation employs a combination of quantitative and qualitative research methods, which enhances the depth of the findings. In addition to standardized self-report measures, qualitative analyses provide rich insights into the nature

of morally distressing experiences. In addition, the use of latent class and profile analyses allows for the identification of distinct subgroups within trauma-exposed populations, offering a more refined understanding of the co-occurrence of emotional consequences of moral transgressions and PTS. Our research contributes to the ongoing debate about whether moral injury should be considered a distinct construct or a subtype of PTSD terminology (Griffin et al., 2025), by examining how moral transgressions were associated with PTSD symptom severity and other clinical outcomes. Our findings suggest that moral injury should be considered a distinct construct rather than merely a subtype of PTSD. This is because some individuals experience moral distress alongside PTS, while others experience moral distress independently.

A key innovation of this dissertation is the exploration of memory characteristics associated with trauma memories that include moral conflict. While prior research has extensively examined event-centrality and memory processing in PTSD (Silva et al., 2016; Gehrt et al., 2018; Robinaugh & McNally, 2010, 2011), our research is among the first to compare memory characteristics of morally distressing events to those of other traumatic experiences. This contributes to a deeper understanding of how events that involve moral injury are encoded in autobiographical memory and subsequently retrieved.

Limitations

An important limitation of this research is its reliance on cross-sectional data. While our studies identify significant associations between moral transgressions, PTSD symptoms, and cognitive-emotional responses, they do not establish causality. Future longitudinal studies are needed to examine whether moral transgressions contribute to the development of PTSD over time or whether individuals with pre-existing vulnerabilities are more likely to perceive traumatic events as morally injurious.

Secondly, the studies in this dissertation rely on retrospective self-report measures, which are subject to *recall bias*. That is, memories of morally distressing events may be reconstructed in ways that are influenced by current emotional states or cognitive distortions, leading to potential biases. For instance, individuals experiencing depression or PTSD may be more likely to recall events through a negatively biased lens, which can alter both the content and emotional tone of the memory over time (Woud et al., 2017). Another potential source of bias in trauma memory research is *social desirability*. Participants may alter their recollections – either consciously or unconsciously – to present themselves in a more favourable light or to avoid feelings of shame, judgment, or rejection. This is particularly relevant when recalling morally

sensitive events, where admitting moral failure or harm to others may carry significant emotional or social consequences.

Thirdly, although this dissertation includes multiple populations, the findings may not be generalizable to all trauma-exposed individuals. The samples of refugees and police officers reflect specific occupational and situational contexts of individuals seeking treatment at a specialized trauma centre. Consequently, it is challenging to generalize these findings to refugees or police officers who are not seeking help. Also, the student samples only consisted of highly educated females. Additionally, cultural differences in moral appraisals and distress responses were not systematically examined, limiting the ability to generalize findings across different cultural backgrounds.

Moral values, perceptions of wrongdoing, and emotional responses to moral conflict can vary significantly between cultures. For example, collectivist cultures may emphasize loyalty to the group or authority more strongly, potentially shaping moral appraisals differently than in individualistic cultures, where personal autonomy and justice may be prioritized. And even within a specific culture, *contextual factors* are important (Molendijk et al., 2025). For instance, two individuals are witnessing a person having a heart attack on the street, but one is a trained emergency nurse, the other a high school student walking home from school. Although the event is similar, the psychological impact may differ significantly due to different roles. Future research should incorporate culturally and contextually sensitive frameworks and cross-cultural comparisons to better understand how cultural norms shape moral conflict and its psychological consequences.

Lastly, while this dissertation focuses on the negative psychological consequences of moral transgressions, it does not explore *resilience factors* that may buffer against moral distress. Protective factors such as social support, meaning-making, and forgiveness could play a crucial role in mitigating the impact of moral distress (Zerach et al., 2023). Future studies should examine these factors to develop interventions that help individuals process and integrate morally distressing experiences more healthily.

Despite these limitations, this dissertation makes an important contribution to the understanding of the exposure of moral transgressions in diverse populations and across different types of trauma. By addressing methodological and theoretical

challenges, future research can build on these findings to further refine the conceptualization of moral injury, improve assessment tools, and develop effective interventions to support individuals affected by morally distressing events.

Clinical implications

The findings of our studies tentatively suggest that exposure to moral transgressions during traumatic events may contribute to an increased psychological burden (in terms of emotional, cognitive, or clinical outcomes) compared to exposure to traumatic events without moral conflict. Also, exposure to self- and other-directed transgressions simultaneously might be more burdensome than exposure to self-directed or other-directed transgressions alone. These findings mark the importance of recognizing signs of moral distress or moral injury at an early stage. An important implication of these findings is the need to investigate the presence of potentially morally injurious or distressing events using validated moral injury questionnaires alongside traditional PTSD assessment, exploring whether individuals have been exposed to moral transgressions during assessment procedures, and to differentiate between self-directed and other-directed transgressions. Currently, numerous questionnaires address moral injury or moral distress in various ways, often failing to separate the morally distressing events from potential outcomes (e.g., shame, loss of trust), failing to distinguish self-directed from other-directed transgressions, and being limited to specific target groups (e.g., military personnel or nurses). This variability complicates the comparison of research studies and hinders the development of a standardized approach.

Although there is no universally applicable measurement for measuring moral injury or morally injurious events, a recent systematic review (Houle et al., 2024) showed that the Moral Injury Outcome Scale (MIOS) (Litz et al., 2022) is most promising for both clinical practice and research. In contrast to other instruments that were developed for specific occupational groups (e.g., Moral Injury Events Scale; Nash et al., 2013), the MIOS is suitable for all trauma-exposed individuals. This instrument evaluates both self-directed and other-directed transgressions, distinguishes exposure to morally injurious events from potential outcomes, verifies if the event meets the A-criterion for PTSD, and assesses both emotional responses (e.g., “I am angry all the time”) and cognitive appraisals (e.g., “People would hate me if they really knew me”). This instrument represents a significant improvement over other measurements, including those used in this dissertation, as it is context-independent and can be applied across various research studies with different samples.

In addition, a new clinical interview has recently been developed to assess moral injury in military personnel (de Goede et al., 2025). This interview explores moral emotions, cognitive processes, coping strategies, social and functional impacts, as well as desired changes. It has been demonstrated to be feasible, well-accepted by participants, and useful for treatment planning (de Goede et al., 2025). Furthermore, the MIOS and the clinical interview for moral injury may help clinicians determine whether an individual has experienced moral transgressions and if these experiences are contributing to significant psychological distress. Such insights could inform treatment decisions.

Interestingly, Litz and his colleagues (2025) revised their former definition of moral injury, and the distinction between moral distress and moral injury is now more clearly defined:

> *"We distinguish MI from moral distress by virtue of the former being a potential clinical problem, which means that the intensity of MI symptoms and the degree of functional impact related to the moral harm and current symptoms are at a threshold such that a person may need additional reparative resources to recover, professional or nonprofessional. In other words, the symptoms and impairment may be overwhelming, and attempts at coping, mitigation, and recovery may not be helping" (p. 10).*

This revised definition could also assist clinicians in determining if "*regular*" trauma-focused interventions might be sufficient in case of moral distress or if additional intervention strategies are required to address moral injury. Traditional trauma treatments, such as Prolonged Exposure (PE) therapy or Cognitive Behavioural Therapy (CBT), are designed to reduce fear-based responses in PTSD. For individuals who face both moral distress and PTSD, these interventions might be effective. However, moral injury is primarily associated with shame, guilt, and identity-related distress rather than fear. As a result, treatment approaches for moral injury also include meaning-making, values reconciliation, and moral repair. Adaptive Disclosure (Litz, 2009), Acceptance and Commitment Therapy (ACT), Brief Eclectic Psychotherapy for Moral Trauma (BEP-MT; de la Rie et al., 2021), the Trauma-Informed Guilt Reduction Therapy (TIGRT; Norman, 2022), and an online supportive treatment module for moral injury (Ter Heide et al., 2022), may all be promising.

The findings of this dissertation underscore the relevance of cognitive appraisals and negative thinking about the self, others, and the world. CBT interventions (e.g., Socratic dialogue) may be particularly beneficial in helping individuals to reframe maladaptive beliefs and reduce self-criticism. However, a point of criticism of CBT interventions for moral injury is that individuals may have distressing beliefs that are not distorted or inaccurate, but in fact, may be appropriate given the circumstances (Gray et al., 2016). In these circumstances, transdiagnostic interventions such as ACT, mindfulness, or person-centred psychotherapy might be more appropriate. ACT, for instance, is based on the principles of mindfulness and focuses on psychological flexibility, which is the ability to be present in the moment, with full acceptance and mindfulness (Fletcher & Hayes, 2005). One of the six core principles of ACT (e.g., acceptance, cognitive diffusion, values) is "self-as context" (Hayes et al., 2006). This principle suggests that an individual cannot be equated with the content of their thoughts or feelings, and within therapy, individuals are taught *"that their person exists in the experience, but the experience does not define their person"* (Boals et al., 2021, p.6). This might be particularly relevant for addressing the event-centrality of traumatic experiences, as it helps individuals to separate their identity from the trauma they have endured. Recognizing that their worth and identity are not solely defined by these traumatic events may reduce the centrality of these events in autobiographical memory.

So far, two studies have investigated the "self-as-context" interventions from ACT in individuals with PTSD (Boals et al., 2015; Boals & Murrell, 2016) as an intervention strategy to reduce the event-centrality of a traumatic event. Although both studies showed that the interventions were successful in reducing event-centrality and PTSD (only in Boals et al., 2015), there were methodological issues that limited the generalizability of the findings. Nonetheless, the usage of "self-as context" interventions might be promising in the context of moral injury because they help individuals to create psychological distance from painful self-judgments and moral emotions such as shame and guilt. It enables individuals to view themselves as "*more*" than their moral failures and fosters a sense of psychological distance between their identity and the immoral acts (or failures to act) associated with the event, while still acknowledging the seriousness of the wrongdoing. Similarly, person-centred therapies that foster self-acceptance and forgiveness might be helpful.

Lastly, the dissertation's findings suggest that individuals from different populations (e.g., refugees, police officers, and emerging adults) experience significant moral

distress, albeit in different ways. For refugees, moral transgressions may stem from war-related experiences, forced decisions for survival, or perceived failures to protect loved ones. For police officers, moral conflicts may arise from split-second decisions in high-stress situations or perceived violations of ethical duties. For emerging adults, moral conflicts may be experienced during a variety of negative life events at a crucial phase of their development. Clinicians working with refugees should be aware of the violation of human rights and culturally specific moral narratives, while those working with first responders should address institutional and systemic factors that contribute to moral distress. And in the context of treating emerging adults, clinicians should focus on developmental and identity-related aspects of moral conflict, recognizing that emerging adulthood is a formative period during which moral values, self-concept, and social roles are actively being shaped. A broader view of various *contexts* indicates that interventions and diagnostics should be customized to the specific occupational and cultural backgrounds of the affected individuals. Effective dialogue with individuals facing moral conflict requires a nuanced awareness of the contextual factors surrounding their experiences of moral transgressions. Also, providing a clear explanation of moral injury and its psychological impact could serve as a valuable psychoeducational intervention for individuals suffering from moral distress. Complementarily, equipping healthcare professionals with training to enhance their understanding of moral injury may further improve support and outcomes.

Directions for future research

To advance our understanding of moral transgressions about trauma and their implications for mental health outcomes, the following recommendations are made. First, most research, including this dissertation, has relied on cross-sectional designs. Although this provides valuable insights, it cannot establish causality or track the long-term consequences of exposure to moral transgressions. Longitudinal studies are needed to determine how outcomes after exposure to moral transgressions, such as shame, guilt, and negative thinking, develop and change over time. *Do memories of moral transgressions become more or less distressing as individuals reconsolidate these memories over time? Does the centrality of trauma memories with moral conflict fluctuate across time or remain relatively stable?* Understanding these trajectories will be critical for designing effective interventions.

Secondly, it is important to expand research by focusing on less studied emotions in the context of moral distress, such as disgust and horror. In one of our studies (*see Chapter 5*), we found that participants recalling trauma memories with moral conflict

reported higher levels of horror and disgust during the traumatic event. However, little is known about disgust and horror in relation to morally distressing events. Some studies described the experience of *moral disgust* in response to immoral behaviour (Oaten et al., 2018; Schaich Borg et al., 2008; Taylor & Uchida, 2022). Also, studies describe that individuals who engage in morally wrong behaviour restore moral self-worth in response to past transgressions, referred to as *moral cleansing* (West & Zhong, 2015). Examples are volunteering at a nursing home or donating money. This behaviour is driven by the motivation to maintain a positive (moral) self-image and to eliminate apparent gaps between one's perceived self-image and one's desired self-image.

Our findings suggest that events involving violations of moral values can evoke a broader range of emotions, such as disgust and horror. Therefore, it would be useful for future research to further explore the role of (moral) emotions in traumatic life events to understand why traumatic events with moral conflict elicit higher levels of disgust and horror compared to those without moral conflict. Also, the concept of moral cleansing might be relevant to study. For instance, *making amends* is a process of addressing and rectifying past wrongs or mistakes, often by taking responsibility and making efforts to repair the harm caused (e.g., apologizing or compensating those who were harmed). In some intervention strategies for moral injury (e.g., Cognitive Processing Therapy), making amends is part of the treatment protocol and could be observed as a form of moral cleansing. It would be interesting to study the effectiveness of this specific intervention in improving psychological well-being and restoring one's self-image after exposure to moral transgressions.

Thirdly, this dissertation demonstrated the potential value of event-centrality and memory characteristics in the way morally distressing events are recalled from autobiographical memory. Research on moral injury within clinical populations consistently demonstrates that exposure to moral transgressions can profoundly affect an individual's identity and self-concept, often leading to maladaptive cognitions, self-blame, and in some cases, self-harming behaviours (Litz et al., 2019; Nash et al., 2013). Although the Self-Memory System theory (Conway, 2005) and the concept of event-centrality might be valuable in explaining why morally distressing memories may be particularly challenging for maintaining a positive self-image, more research is necessary. Future studies could, for instance, further investigate how the event-centrality of memories with moral conflict contributes to the development and persistence of moral distress after exposure to moral transgressions. Additionally, research could examine whether cognitive reappraisal techniques, such as "self-as

context" interventions, could serve as an effective treatment strategy for individuals suffering from moral distress.

Fourthly, further exploration is needed to better understand why some individuals experience significant distress from moral transgressions while others do not. There are studies and research papers that point out the relevance of *moral rationalization* after the event (Mulder & van Dijk, 2020), the role of *empathy* (ter Heide, 2020), and *personality factors* such as poor emotion regulation (Levi-Beltz et al., 2023). Also, the appraisal or perception of moral transgressions might be shaped by cultural and societal factors. For instance, what is considered a moral violation in one culture may not be perceived as such in another. Future studies could examine how different cultural backgrounds or personality traits influence the appraisal of moral transgressions and subsequent psychological distress.

Lastly, while much of the existing research focuses on risk factors for moral injury and distress, future studies could also examine *protective factors* that may mitigate their negative psychological impact. Factors such as social support, meaning-making, and self-compassion could play a role in reducing moral distress. Understanding how some individuals can process and integrate morally distressing experiences – without experiencing long-term psychological harm – will be key for developing targeted interventions and resilience-building strategies. Most attention has been given to the impact of moral transgressions on emotional and cognitive functioning, with less focus on their impact on *social functioning*. In the revised model proposed by Litz and colleagues (2025), the impact of moral transgressions on social functioning is emphasized in their definition of moral injury: "*Social standing, trust, and social resources may be severely threatened and potentially lost"* (Litz et al., 2025, p. 12). Future studies could explore how individuals rebuild trust in relationships after experiencing betrayal and moral wrongdoing by others. Additionally, one could examine the role of *forgiveness* and emotional support in the healing process. Addressing these research gaps will not only enhance theoretical models of moral injury and trauma but also inform clinical interventions and public health strategies. Future research can provide a more comprehensive understanding of how moral transgressions impact mental health and how individuals can recover from the profound distress associated with moral injury.

Author's reflection on personal (moral) challenges

Conducting this research and writing this dissertation has been an intellectually enriching but challenging journey. This section presents the most important reflections from a personal point of view.

One important challenge was navigating through the numerous different terms and definitions: moral violations, moral wrongdoing, immoral acts, moral transgressions, moral conflicts, moral dilemmas, acting morally wrong, unethical acts, moral injury, moral distress, moral repair, moral pain, moral trauma, and so on. On the one hand, this wide variety of concepts and terms offered different ways to explore the topic. But on the other hand, I struggled with disentangling one concept from the other. This became particularly evident in the qualitative parts of my research, where defining and categorizing moral transgressions proved to be an ongoing challenge. What one person perceives as a moral violation may not hold the same weight for another. This subjectivity is not just a theoretical nuance – it is essential in how people experience, articulate, and express their morally distressing experiences. In addition, my struggle with language and terminology is not unique – it mirrors a broader issue in moral injury research. A persistent challenge in the field is the lack of consensus on definitions and terminology (Griffin et al., 2025). The absence of universally accepted measurement standards makes it difficult to compare findings across studies, impeding replicability and generalizability. Without a shared vocabulary, it is difficult to transfer scientific findings.

Furthermore, I struggled with moral challenges myself while conducting the research studies. For instance, when we designed the survey for undergraduate students (*see Chapter 5 and 6*), we wanted to gain insight into self-directed moral transgressions. I suggested we could ask participants: "Did you harm or fail to prevent harm to other people?" At first, I believed this question could be effective. But upon reflection during research meetings, we questioned the ethics of asking participants to confess to immoral acts that could, potentially, be serious criminal offenses. In addition, for the research studies in clinical groups (*see Chapter 2, 3, and 4*), I struggled with the moral dilemma of whether it was right to explicitly inquire about moral transgressions – potentially serious and deeply buried – among patients already experiencing high levels of mental distress. Interestingly, clinicians who were involved in these research studies raised similar concerns: "*Is the additional emotional burden on these patients justified by the knowledge gained for research*"? And: "*If we recognize moral injury in our patients, what are the treatment options in our centre"?* During the time I conducted this research, only a few therapists at our centre were offering treatment specifically for moral injury. This made me realize how limited the support options are compared to the established treatments available for PTSD.

Furthermore, I studied 936 descriptions of morally distressing events and traumatic events of undergraduate students, refugees, and police officers – often with horrifying details of rape, dead bodies, murder, torture, and other misery. Despite my

experience as a clinical psychologist, I must acknowledge that repeatedly reading and visualizing participants' traumatic experiences affected me more than I expected – perhaps more than hearing similar stories directly from patients face to face. While the impact of listening to trauma stories is often discussed in the context of clinicians, its impact on researchers is less acknowledged. I believe we need to raise awareness of this issue and integrate discussions of emotional and moral impact into research meetings or supervision. I am grateful for the social network that supported me in sharing my experiences, both as a clinician and researcher. This inspired me to offer the same support to my patients and colleagues.

Writing this dissertation led to several important insights. First, I became aware that moral dilemmas are not limited to people with mental issues seeking help – they also affect us as healthcare professionals and researchers. Creating space to openly discuss these dilemmas in research meetings can be both valuable and necessary. Second, ethical considerations are even more important when researching moral injury. Especially when handling sensitive information about morally transgressive acts. Ensuring confidentiality and approaching these stories with care is essential. Third, because treatment options for moral injury are still limited in some clinical centres, researchers have a responsibility to ensure participants who disclose such experiences have access to appropriate support or referrals. We must be mindful of the emotional toll that participation in research may have on them. Despite all challenges, I feel committed to this work and truly hope that our findings resonate with the experiences of individuals who suffer from moral transgressions each day.

Conclusion

Our findings collectively underscore the importance of moral conflict in the aftermath of trauma. The research supports the notion that when traumatic events involve moral transgressions – whether self-directed, other-directed, or both – their psychological impact is amplified. The elevated levels of guilt, shame, and negative cognitions observed particularly in cases of dual transgressions highlight that moral conflict significantly contributes to trauma-related psychopathology. Furthermore, our studies reveal that moral injury is not confined to traditionally high-risk groups but is also relevant in populations such as refugees, police officers, and emerging adults. This broadens the scope of moral injury research, indicating that moral conflict is a universal experience with important implications for understanding trauma responses.

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Forgiveness does not relieve someone of responsibility for what they have done. Forgiveness does not erase accountability. It is not about turning a blind eye or even turning the other cheek. It is not about letting someone off the hook or saying it is okay to do something monstrous.

Forgiveness is simply about understanding that every one of us is both inherently good and inherently flawed. Within every hopeless situation and every seemingly hopeless person lies the possibility of transformation. [...]

We are not responsible for what breaks us, but we can be responsible for what puts us back together again. Naming the hurt is how we begin to repair our broken parts.[2]

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2 Desmond & Mpho Tutu (2014). The Book of Forgiving: The Fourfold Path for Healing Ourselves and Our World

ADDENDUM

DUTCH SUMMARY - NEDERLANDSE SAMENVATTING

Het doel van dit proefschrift is om een bijdrage te leveren aan kennis over de invloed van moreel belastende ervaringen op de mentale gezondheid bij diverse populaties.

Dit doel bestaat uit drie subdoelen:

1 Het onderzoeken van de (kwalitatieve) aard en psychologische impact van moreel belastende ervaringen bij individuen uit diverse populaties die zijn blootgesteld aan traumatische ervaringen.
2 Het identificeren van verschillende subgroepen bij vluchtelingen en politieagenten die zijn blootgesteld aan traumatische ervaringen op basis van hun gerapporteerde posttraumatische stress symptomen en subjectieve belevingen van moral injury. Daarnaast is het doel om verschillen in demografische en klinische profielen te onderzoeken tussen de gevonden subgroepen.
3 Onderzoeken hoe centraal herinneringen aan moreel belastende ervaringen zijn in het autobiografisch geheugen, welke karakteristieken deze herinneringen hebben en wat het verband is tussen deze herinneringen en emotioneel-cognitieve processen, posttraumatische stress en depressie.

Hieronder volgt een samenvatting van de belangrijkste bevindingen van ieder hoofdstuk.

Als eerste beschrijft **Hoofdstuk 2** een retrospectieve studie met een dataset van 183 getraumatiseerde vluchtelingen die op intake kwamen bij ARQ Centrum'45. We hebben deze groep onderverdeeld in twee subgroepen, namelijk een *moral injury groep* en een groep *zonder moral injury.* Deze indeling hebben we gemaakt op basis van de beschrijvingen van traumatische gebeurtenissen die vluchtelingen gaven tijdens de intake. Vervolgens werden zij ingedeeld in de moral injury groep als zij een gebeurtenis hadden meegemaakt die sterk inging tegen belangrijke morele overtuigingen en als zij ook stress rapporteerden door deze ervaring. Deze categorisatie was gebaseerd op veelgebruikte definities van een moreel belastende ervaring en moral injury, beschreven door Litz en zijn collega's (2009). De aard van de traumatische ervaringen werd ook kwalitatief geanalyseerd zodat we een indruk kregen van de soort ervaringen die vluchtelingen als moreel belastend rapporteerden. Daarnaast vergeleken we de twee groepen op basis van posttraumatische stressklachten, gevoelens van schuld en algehele psychische klachten. Er waren in totaal 55 vluchtelingen die moreel belastende ervaringen hadden gerapporteerd en 128 die dat niet hadden gerapporteerd. De resultaten van de kwalitatieve analyses lieten zes soorten moreel belastende ervaringen zien: 1) het

niet kunnen voorkomen dat anderen iets werd aangedaan (23.6%), 2) andere mensen geen hulp kunnen bieden (16.4%), 3) het achterlaten van familieleden die vervolgens te maken kregen met verwonding of zelfs de dood (14.5%), 4) het maken van directe of indirecte beslissingen die leidden tot verwonding of dood van anderen (30.9%), 5) verraad (3.6%), en 6) zelf een ander iets aandoen (9.1%). Er waren geen verschillen tussen de groepen wat betreft PTSS klachten of algemene psychische klachten maar de moral injury groep rapporteerde wel meer schuldgevoelens. Op basis van deze studie concludeerden we dat een aanzienlijk deel van de getraumatiseerden vluchtelingen die psychische hulp zoekt, te maken heeft gehad met moreel belastende ervaringen. Dit hing echter, in deze onderzochte groep althans, niet direct samen met meer posttraumatische stress of een slechter psychisch welbevinden. Deze studie biedt inzicht in de soorten morele overtredingen waarmee vluchtelingen worden geconfronteerd en geeft een breder beeld van de morele conflicten die zij ervaren.

In **Hoofdstuk 3** beschrijven we een studie met een groep getraumatiseerde vluchtelingen waarbij we verschillende groepen wilden identificeren, op basis van subjectieve belevingen van moral injury en PTSS symptomen. Daarnaast onderzochten we of deze groepen van elkaar verschilden in demografische variabelen, algemene psychische klachten en depressie. In totaal onderzochten we een groep van 136 vluchtelingen die hulp zochten bij ARQ Centrum'45 en we vroegen hen tijdens de intake om een aantal vragenlijsten in te vullen. Vervolgens deden we een Latente Profiel Analyse om te kijken of we groepen van individuen van elkaar konden onderscheiden. Met een regressieanalyse keken we vervolgens naar verschillen tussen deze groepen wat betreft demografische variabelen, algemene psychische klachten en depressie. Er werden uiteindelijk drie groepen gevonden: een "benedengemiddelde MI en benedengemiddelde PTSS" groep (39%), een "gemiddelde MI-zelf, benedengemiddelde MI-ander en lage PTSS" groep (10%) en een "bovengemiddelde MI en bovengemiddelde PTSS" groep (50%). Deze drie groepen verschilden significant van elkaar in algemene psychische klachten en depressie maar niet in leeftijd en geslacht. De resultaten van deze studie benadrukken dat moral injury samen kan gaan met PTSS maar ook zonder PTSS kan voorkomen. Het is belangrijk om subjectieve belevingen van moral injury te herkennen bij hulpzoekende vluchtelingen zodat zij ook behandelinterventies kunnen krijgen die zowel gericht zijn op PTSS als op moral injury.

In **Hoofdstuk 4** hadden we een vergelijkbare opzet als bij het derde hoofdstuk alleen onderzochten we een groep getraumatiseerde politieagenten die hulp zochten voor hun psychische klachten bij ARQ Centrum'45. Het was ons doel om te kijken of we

subgroepen konden identificeren en of deze van elkaar verschilden in demografische variabelen, algemene psychische klachten, wantrouwen, schuld, zelfbestraffing en gevoelens van waardeloosheid. In totaal analyseerden we de data van 421 getraumatiseerde politieagenten die tijdens een intake vragenlijsten invulden. We gebruikten een Latente Klassen Analyse om verschillende subgroepen te ontdekken en regressie analyses om de groepen met elkaar te vergelijken. Op basis van de analyses konden we in totaal vijf verschillende groepen identificeren: (1) een “lage MI, hoge PTSS” groep (28%), (2) een “hoge MI, lage PTSS” groep (11%), (3) een “hoge MI, hoge PTSS” groep” (17%), (4) een “lage MI, lage PTSS” groep (16%), en (5) een “hoge MI-ander, hoge PTSS” groep (27%). We ontdekten dat deze groepen significant van elkaar verschilden in leeftijd, algemene psychische klachten, PTSS, wantrouwen, schuld en zelfbestraffing. Er waren geen verschillen in gender of gevoelens van waardeloosheid. Deze studie benadrukt dat moral injury samen kan gaan met PTSS maar ook zonder PTSS kan voorkomen. Het is belangrijk om moral injury bij politieagenten tijdig te meten en te erkennen omdat de aanwezigheid van moral injury kan vragen om een aangepaste psychologische behandeling.

In **Hoofdstuk 5** onderzochten we de centraliteit van traumaherinneringen met en zonder moreel conflict in een niet-klinische groep jongvolwassenen. Centraliteit is de mate waarin een traumatische of ingrijpende gebeurtenis een kernonderdeel wordt van iemands identiteit en levensverhaal. Daarbij onderzochten we de samenhang tussen centraliteit, geheugenkenmerken (bv. hoe levendig of gedetailleerd een herinnering is), emotionele stress en posttraumatische stress. In totaal vroegen we 459 universiteitsstudenten die waren blootgesteld aan één of meerdere traumatische ervaringen in hun leven, om een herinnering op te schrijven over een van deze ervaringen. Vervolgens vroegen we hen of zij tijdens of na deze gebeurtenis een moreel conflict hebben ervaren. Op basis hiervan verdeelden we de groep in twee subgroepen, een groep jongvolwassenen die een traumaherinnering rapporteerde waarbij zij een moreel conflict ervaren hebben en een groep jongvolwassenen die een traumaherinnering rapporteerde waar geen moreel conflict ervaren werd. Uit de resultaten bleek dat jongvolwassenen die een traumaherinnering rapporteerden met een moreel conflict, meer gevoelens van schaamte, schuld, walging en afschuw hadden ervaren tijdens de traumatische ervaring. Ook hadden zij meer posttraumatische stress en riep de herinnering meer emotionele stress op dan bij de jongvolwassenen die geen moreel conflict hadden ervaren tijdens de traumatische gebeurtenis. Bovendien waren de herinneringen van de jongvolwassenen die een moreel conflict hadden ervaren centraler, meer bepalend voor hoe zij naar zichzelf keken en werden de herinneringen vaker vanuit de derde persoon en met veel afstand tot zichzelf ervaren. Verder vonden we dat, hoe centraler de traumaherinnering was,

hoe meer posttraumatische stress jongvolwassenen rapporteerden. Deze studie laat vooral zien dat centraliteit en geheugenkenmerken een belangrijke rol kunnen spelen bij traumatische gebeurtenissen met een moreel conflict. Bovendien lijkt deze studie te laten zien dat het ervaren van een moreel conflict tijdens of na een traumatische gebeurtenis voor meer psychische belasting zorgt dan het meemaken van gebeurtenissen zonder moreel conflict. Het wel of niet meemaken van morele conflicten en dilemma's zou daarom, zowel in onderzoek als in de klinische praktijk, goed nagevraagd moeten worden.

In **Hoofdstuk 6** onderzochten we moreel belastende ervaringen bij een groep van 206 jongvolwassenen die blootgesteld waren aan één of meerdere traumatische ervaringen. Universiteitsstudenten werden gevraagd om een moreel belastende ervaring te rapporteren en vervolgens werd hen gevraagd of zij tijdens of na deze ervaring een moreel conflict hebben ervaren (1) door hun eigen gedrag (of nalaten) in de situatie, (2) door het gedrag (of nalaten) van anderen, (3) of door een combinatie van beide (respectievelijk aangeduid als zelf-gerichte morele transgressies, ander-gerichte transgressies of duale transgressies). Vervolgens vergeleken we deze drie groepen met elkaar in emotioneel-cognitieve en klinische uitkomsten. Ook onderzochten we verschillende mediators in de relatie tussen het type morele transgressie (zelf, ander of duaal) en posttraumatische stress. Onze resultaten lieten zien dat jongvolwassenen die duale transgressies rapporteerden meer negatieve cognities over zelfverwijt, zichzelf en de wereld hadden en meer schaamte, schuld en woede voelden dan jongvolwassenen die óf alleen zelf-gerichte óf alleen ander-gerichte transgressies rapporteerden. Er waren geen verschillen in posttraumatische stress en depressie. De mediatie analyse liet zijn dat jongvolwassenen die duale transgressies rapporteerden meer negatieve cognities hadden over zichzelf en over de wereld, wat vervolgens samenging met meer posttraumatische stress. Deze studie benadrukt dat het meemaken van een combinatie van zelf-gerichte én ander-gerichte morele transgressies samengaat met een toename in emotioneel-cognitieve belasting. Het is daarom belangrijk, zowel in wetenschappelijk onderzoek als in de klinische praktijk, om het type morele transgressie goed uit te vragen omdat personen met duale transgressies mogelijk een meer complex palet aan negatieve emoties en cognities kunnen ervaren, wat belangrijk is voor de therapie.

Conclusie en implicaties

Dit proefschrift laat in de eerste plaats zien dat blootstelling aan morele transgressies voorkomt in uiteenlopende populaties, waaronder vluchtelingen, politieagenten en jongvolwassenen die traumatische ervaringen hebben meegemaakt. Dit proefschrift belicht zowel de verschillen als de overeenkomsten wat betreft de morele conflicten

waarmee deze populaties te maken krijgen. Of een gebeurtenis uiteindelijk als moreel belastend wordt ervaren, lijkt sterk afhankelijk te zijn van de subjectieve beleving van de persoon, die onder andere is ingegeven door persoonskenmerken maar ook door sociale en beroepsmatige rollen. Er kan worden verondersteld dat bepaalde typen morele transgressies – zoals transgressies die betrekking hebben op zorg en bescherming (bv. iemand niet redden, iemand achterlaten) – in het bijzonder opvallend en moreel belastend zijn voor personen wiens identiteit nauw verbonden is met zorg, plichtsbesef of familieverantwoordelijkheid. Gezamenlijk ondersteunen onze bevindingen de gedachte dat morele stress en uiteindelijk morele verwonding, niet uitsluitend verbonden zijn aan oorlogstrauma, maar kunnen ontstaan in diverse contexten waarin individuen een schending ervaren van diepgewortelde morele overtuigingen. Dit vraagt om een inclusiever en algemener kader voor het begrijpen van de impact van morele transgressies tijdens trauma.

Een van de belangrijkste theoretische bijdragen van dit proefschrift, overeenkomstig met ons tweede doel, is de identificatie van verschillende subgroepen op basis van morele verwonding en PTSS-symptoomprofielen bij vluchtelingen en politieagenten. Onze bevindingen benadrukken dat morele verwonding kan samenhangen met PTSS maar ook ervaren kan worden zonder PTSS symptomen. Dit sluit aan bij wetenschappelijke literatuur die aantoont dat morele verwonding een unieke manifestatie is van traumagerelateerde stress, die niet volledig gedekt wordt door traditionele PTSS-kaders (Barnes et al., 2019; Frankfurt & Frazier, 2016; Hall et al., 2021; Litz et al., 2009).

Op de derde plaats benadrukken de bevindingen van dit proefschrift de impact van het meemaken van een moreel conflict tijdens of na traumatische gebeurtenissen. Ons onderzoek laat zien dat het ervaren van een moreel conflict tijdens een traumatische ervaring samengaat met meer emotionele stress en meer posttraumatische stress. Met name als personen het gevoel hebben dat zowel zijzelf als de ander iets gedaan of nagelaten hebben tijdens de gebeurtenis, kan er sprake zijn van een grote impact op het psychische welbevinden. Wanneer mensen een morele transgressie toeschrijven aan anderen, richten zij zich vaak op externe verzoening (bv. vergeving schenken of gerechtigheid zoeken). Bij zelfgerichte transgressies ligt de nadruk juist op interne verzoening (bv. zelfvergeving en omgaan met schaamte of schuld). Wanneer beide typen transgressies gelijktijdig worden ervaren, moet men echter zowel interne als externe conflicten hanteren, wat mentaal uitputtend en emotioneel complex kan zijn.

Tot slot laat dit proefschrift zien dat hoe centraler de herinnering is voor iemand (de mate waarin een traumatische of ingrijpende gebeurtenis een onderdeel wordt van

iemands identiteit), hoe meer impact die herinnering heeft op de posttraumatische stress die wordt ervaren. Ook de geheugenkenmerken van een herinnering (bv. of een herinnering gedetailleerd of levendig is) zijn verschillend voor traumaherinneringen mét moreel conflict en zonder conflict. Jongvolwassenen die een traumaherinnering rapporteerden met een moreel conflict, hadden meer gevoelens van schaamte, schuld, walging en afschuw tijdens de traumatische ervaring en ook hadden zij meer emotionele en posttraumatische stress dan de jongvolwassenen die geen moreel conflict hadden ervaren tijdens de traumatische gebeurtenis. Dit kan mogelijk verklaard worden door de hypothese dat morele transgressies het zelfconcept in het bijzonder ontwrichten, mede omdat deze ervaringen sterk ingaan tegen het zelfbeeld wat iemand graag zou willen hebben. Hierdoor kunnen moreel belastende herinneringen bijdragen aan negatieve zelfveroordelingen en aanhoudende stress.

De klinische implicaties van dit proefschrift zijn met name dat zorgprofessionals zich ervan bewust moeten zijn dat getraumatiseerde cliënten niet alleen last kunnen hebben van angst gerelateerde klachten, die primair samengaan met posttraumatische stress, maar ook last kunnen hebben van (andere) emoties en/of negatieve veroordelende gedachten die samenhangen met het meemaken van een moreel conflict. Het is belangrijk om hier navraag naar te doen en daarbij ook onderscheid te maken in het type morele transgressie (bv. zelf-gericht, ander-gericht of duaal). Zeker wanneer cliënten het gevoel hebben dat zówel zijzelf als de ander iets gedaan hebben wat tegen hun morele principes inging, kunnen zij last hebben van een opeenstapeling van negatieve gedachten en gevoelens van schaamte, schuld en woede. Dit vereist een aanpak waarbij al deze facetten meegenomen worden. Professionals moeten bij cliënten bij wie vermoed wordt dat morele belasting speelt, bedacht zijn op de aanwezigheid van (sterke) negatieve overtuigingen over zichzelf, de ander of de wereld en dit onderwerp van gesprek maken. Ook het navragen van hoe centraal de herinnering is voor het narratief dat de cliënt over zichzelf heeft is belangrijk. Een traumatische gebeurtenis kan zó centraal zijn komen te staan, dat de gehele identiteit en eigenwaarde hiervan afhankelijk zijn geworden. Het weer in perspectief plaatsen van de traumatische en/of moreel belastende ervaring in het gehele levensverhaal van de cliënt (bv. door middel van “zelf-in-context” interventies uit de Acceptance and Commitment Therapy of Narratieve Exposure Therapie) is dan waardevol voor de therapie.

REGISTER

(Potentially) morally injurious events	Events in which a person perpetrates, fails to prevent, or bears witness to moral transgressions that transgress deeply held moral beliefs and expectations, in a high-stakes environment, that occur rarely, with high impact on psychological well-being.
Morally distressing events	Events in which a person perpetrates, fails to prevent, or bears witness to moral transgressions that transgress deeply held moral beliefs and expectations, in a low-stakes environment, with moderate impact on psychological well-being.
Morally challenging events	Events in which a person perpetrates, fails to prevent, or bears witness to minor moral transgressions that occur very often and have a low impact on psychological well-being.
(Potentially) traumatic events	Events in which the person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, in the following way(s): direct exposure, witnessing, learning that the trauma happened to a close relative or close friend, or indirect exposure to aversive details of the trauma (usually in professional duties).
Moral transgressions	All acts (or failures to act) that transgress important moral values and beliefs.
Moral conflict	The internal struggle between personal moral values and exposure to moral transgressions.
Self-directed moral transgressions	Actively committing moral transgressions or failing to prevent moral transgressions.
Other-directed moral transgressions	Being exposed to the moral transgressions of others.
Dual moral transgressions	Experiencing both self-directed and other-directed moral transgressions simultaneously.

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"Wat is belangrijker," vroeg Grote Panda,
"de reis of de bestemming?"
"Het gezelschap," zei Kleine Draak.

James Norbury (2021)

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ABOUT THE AUTHOR

Nora Mooren obtained her Bachelor's degree and Honours degree in Psychology from the Radboud University Nijmegen in 2011. Her Bachelor's thesis, under the supervision of Prof. Dr. Agnes van Minnen, resulted in her first publication in an international journal. She was subsequently admitted to the Research Master's program Behavioural Science at the Radboud University, where she graduated *cum laude* in 2013. Concurrently, she pursued a Master's in Clinical Psychology, which she completed in 2013. During her Research Master's, she received a grant to conduct research at the University of New South Wales in Sydney under the supervision of Dr. Julie Krans and Prof. Dr. Michelle Moulds. This resulted in two publications on the vantage perspective in trauma memories in international peer-reviewed journals. Her interest in trauma deepened during her clinical internship at Overwaal Pro Persona Centre for Anxiety Disorders in 2014, where she was inspired by professionals who combined clinical work with scientific research.

After gaining experience in clinical practice for a few years, she was accepted into the TOPKLAS program at ARQ Centrum '45 in 2018. The TOPKLAS is a six-year integrated program that combines training as a healthcare psychologist (*GZ-psycholoog*) and clinical psychologist/psychotherapist *(klinisch psycholoog/psychotherapeut)* with the completion of a PhD. This is an initiative of the Foundation for TOPKLAS Psychological Specialists in Healthcare and is designed in collaboration with vLOGO. As part of this program, she conducted research on multiple projects, while also providing clinical care across various departments of ARQ Centrum'45 (Diemen and Oegstgeest) and the Leo Kannerhuis in Amsterdam. In her clinical practice, she provided trauma-focused treatment to diverse populations, including refugees, adults with histories of childhood trauma, and members of law enforcement and emergency services, such as military personnel, firefighters, and police officers.

Currently, Nora is working at GGz Breburg as a clinical psychologist/psychotherapist and senior researcher at the department of child and adolescent mental health and *Het WetenschapsHuis*. Her clinical work focuses on treating adolescents and young adults with trauma- and personality-related disorders. Her research is centred on trauma, recovery, and mental health in emerging adults. Also, she is a member of the Ethics Committee for Scientific Research and het *Kennisnetwerk Trauma* of GGz Breburg.

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Nora Mooren

The Moral Weight of Trauma

Understanding the Psychological Impact of Moral Conflict

Moral values are central to how we perceive ourselves and shape our understanding of who we are and what gives life meaning. We generally tend to perceive ourselves as morally right and act according to our moral compass, navigating between what is right and wrong. However, in certain circumstances, our moral compass falters, and we may act in violation of our moral standards or witness others doing so. Such moral transgressions can range from seemingly minor acts, such as dishonesty, to severe moral violations, including physical harm. Moral transgressions often generate moral conflict and, in some cases, lasting psychological consequences resulting in moral distress and ultimately moral injury.

This dissertation examines the impact of moral transgressions on mental health in three distinct groups using mixed-methods designs: refugees, police officers, and emerging adults. Each group is confronted with traumatic and morally distressing events, albeit in different contexts. The findings demonstrate that moral injury and posttraumatic stress can appear as separate constructs but may also co-occur, intensifying psychological distress. Exposure to both one's own moral violations and those committed by others is associated with a greater mental health burden than exposure to either type of transgression alone. Furthermore, the results underscore how negative thoughts and the way we remember events —such as the details of those memories and how central they feel to our life story— play a role in how individuals experience and cope with moral conflict.

By integrating perspectives across populations and highlighting key emotional-cognitive processes, this dissertation contributes to a deeper understanding of trauma and moral conflict. These insights have significant implications for the development of targeted interventions designed to alleviate the mental health burden of individuals exposed to moral transgressions.

Nora Mooren currently works as a clinical psychologist/psychotherapist and senior researcher at the department of child and adolescent mental health of GGz Breburg.

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