University of Southampton

Faculty of Environmental and Life Sciences

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Prevalence and contributing factors towards moral injury within a homeless population.

by

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Thesis for the degree of Doctorate in Clinical Psychology

September 2024

University of Southampton

Abstract

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The first chapter is a systematic review of the associations between moral injury (MI) and social support (SS) across any population. The databases PsycINFO, MEDLINE, Web of Science, CINAHL, and Cochrane Library, were used to conduct literature searches. 13 studies were found and thematically fell into two groups for analysis, the social support group, and the social disconnection group. The analysis utilised two synthesis methods, summary of effects and narrative synthesis. The summary of effects showed that SS was negatively associated with MI-related constructs and social disconnection was positively associated with MI-related constructs. The narrative synthesis revealed the most consistent result related to the negative association between other-directed MI and SS. However, the outcomes of other types of MI, such as self-directed and betrayal, showed more inconsistent results. Explorations were made into the sources of support, and the role of SS in the relationship between MI and other mental health symptoms. This systematic review tentatively suggests that SS has an under-researched role in the experience of MI which could be further explored in future research. Suggestions of research topics are presented and considerations of how measures are used within MI research are discussed.

The second chapter reports on an empirical study, which had two aims relating to the exploration of MI within the homeless population in Hampshire. The first was to understand MI prevalence by comparing the scores on an MI measure between a homeless group (n=113) and a non-homeless group (n=408). MI was present in 60% of the homeless group sample. A t-test found a significant difference (t(151.41)= 2.56, p=0.006), between the groups and the mean difference = 4.12 (95% CI =.944, 7.285) indicating the homeless group has a higher rate of MI compared to the control group. The second aim was to consider if factors associated with homelessness (discrimination, adverse childhood events (ACEs), illegal activity, gender, generational poverty and substance use) alongside the transition into identifying as homeless, predicted MI. Analysis used multiple linear regressions and mediation analyses. ACEs and discrimination significantly predicted the MI total scores and were then used in the mediation analysis. It was found that PTSD symptoms mediated both variable's relationship to MI, however only discrimination had a significant direct pathway to MI. Results are linked to theory and clinical practice, providing clinical suggestions for the inclusion of shame-informed practice into homeless services.

Table of Contents

Abstract 2

Table of Contents 4

Table of Tables 7

Table of Figures 8

Research Thesis: Declaration of Authorship 9

Acknowledgements 10

Definitions and Abbreviation 11

Chapter 1: A systematic review of the association between social support and the experience of moral injury in adults 13

1.1 Abstract 13

1.2 Introduction 14

- 1.2.1 Moral Injury 14
- 1.2.2 Moral Injury and PTSD 16
- 1.2.3 Moral Injury and Depression 18
- 1.2.4 Moral Distress 19
- 1.2.5 Social Support 19
- 1.2.6 Objectives 22

1.3 Methods 23

- 3.1 Overview 23
- 1.3.2 Eligibility Criteria 23
- 1.3.3 Information Sources 24
- 1.3.4 Search Strategy 24
- 1.3.5 Data Collection Process 26
- 1.3.6 Data Items 26
- 1.3.7 Risk of Bias 27
- 1.3.8 Effect Measures 27
- 1.3.9 Synthesis Methods 28

1.4 Results 28

- 1.4.1 Study Selection 28
- 1.4.2 Study Characteristics 30
- 1.4.3 Risk of Bias 30
- 1.4.4 Summary of Effects 36
- 1.4.5 Results of Narrative Synthesis 38

1.5 Discussion **42**

1.6 Conclusion **46**

Chapter 2: Prevalence and contributing factors towards moral injury within a homeless population. **47**

2.1 Abstract **47**

2.2 Introduction **48**

- **2.2.1 Moral Injury** 48
- **2.2.2 Homelessness and Moral Injury** 49
- **2.2.3 Aims** 56

2.3 Method **57**

- **2.3.1 Design** 57
- **2.3.2 Participants** 57
- **2.3.3 Measures** 58
- **2.3.4 Procedure** 60
- **2.3.5 Ethics** 61
- **2.3.6 Planned Analysis** 62

2.4 Results **64**

- **2.4.1 T-test results** 64
- **2.4.2 Multiple Regression** 67
- **2.4.3 Summary of Results in Relation to Hypotheses** 71

2.5 Discussion **71**

- **2.5.1 Limitations** 77
- **2.5.2 Future Directions** 78
- **2.5.3 Clinical Applications** 79

2.6 Conclusion **80**

3. References **82**

Appendix A - PRISMA Checklist **100**

Appendix B - Full Search Strategy **101**

Appendix C - Screening Tool **104**

Appendix D - Data Extraction Table Social Support Group **105**

Appendix E - Data Extraction Table Disconnection Group **108**

Appendix F - JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies **110**

Appendix G - JBI Critical Appraisal Checklist for Case Series **111**

Appendix H - Moral Injury Events Scale- Civilian (MIES-C) **112**

Appendix I - Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5) **113**

Appendix J - Adverse Childhood Experiences (ACEs) Questionnaire **114**

Appendix K - Homelessness Questionnaire **115**

Appendix L – Ethical Approval **118**

Appendix M - Participant Information Sheet for the study whose data was used as the non-homeless group. **119**

Appendix N - Participant Information Sheet for the homeless group **122**

Appendix O - Consent Form **126**

Appendix P – Debriefing Form **127**

Appendix Q - Graphs Comparing the Data for The Homeless Group and Non-homeless Group. **129**

Appendix R – Summary of MI subscale's multiple linear regression **131**

Appendix S - Submission Guidelines **132**

Table of Tables

Table 1 PICOSS table summarising decisions made for scoping searches........ 23

Table 2 Search terms used for each database 25

Table 3 JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies...31

Table 4 JBI Critical Appraisal Checklist for Case Series 32

Table 5 Descriptive information for studies within the social support group.......33

Table 6 Descriptive information for studies within the disconnection group.......36

Table 7 Demographics for the homeless and non-homeless groups...................64

Table 8 Independent T-test results for MIES-C totals and subscales between the homeless and non-homeless groups 65

Table 9 Regression results for predictors of moral injury within a homeless population 67

Table of Figures

Figure 1 PRISMA 2020 flow diagram 29
Figure 2 Bronfenbrenner's (2000) Ecological Systems Theory 48
Figure 3 Accommodation type for the homeless group 66
Figure 4 Participants in the homeless group with a mental health diagnosis....... 66
Figure 5 Path model of the relationships between ACEs, PTSD and MI. Path coefficients are unstandardised regression coefficients 68
Figure 6 Path model of the relationships between Discrimination, PTSD and MI. Path coefficients are unstandardised regression coefficients................ 69

Research Thesis: Declaration of Authorship

Print name: Holly Cameron

Title of thesis: Prevalence and contributing factors towards moral injury within a homeless population.

I declare that this thesis and the work presented in it is my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. None of this work has been published before submission;

Signature: Holly Cameron Date: 19/09/2024

Acknowledgements

I would like to thank all the participants who took the time to take part in this study and the staff across the Hampshire homeless services for their support in the recruitment process. Those from Two Saints services, Trinity Winchester, The Booth Centre, and Home Group; it was a pleasure to encounter such welcoming and passionate teams. I would have struggled to recruit without your knowledge and skills of working with those experiencing homelessness.

I would also like to express my gratitude to Dr David Beattie and Professor Nick Maguire for their supervision and guidance across this project. I was new to the term moral injury before meeting with David and I thank you for introducing such an interesting research area to explore. I have greatly appreciated the wisdom and insights that you both have provided, which has helped me develop my research skills as well as wider clinical thinking. I also would like to thank Dr Warren Dunger for being such a fantastic tutor throughout my time on this course.

The biggest thank you will always go to my husband Tim, who has not only proofread everything I have ever written, but he has also been a constant source of love and support. With my excessive commuting you have kept me fed, ensured an endless supply of caffeine, and patiently listened to my venting! I wouldn’t have been able to get through this experience without you. Although I can’t share the Dr title with you, with all those skills you’re pretty much a psychologist already!

Definitions and Abbreviation

ACEs	Adverse Childhood Experiences
APA	American Psychological Association
CBT	Cognitive Behavioural Therapy
CFT	Compassion-focused Therapy
CI	Confidence intervals
DSM-5	The Diagnostic and Statistical Manual of Mental Disorders Fifth Edition
E.g.	For example
EST	Ecological Systems Theory
H (1)	Hypothesis
ICD	The International Classification of Diseases
JBI	Joanna Briggs Institute
LGBTQ+	People identifying as lesbian, gay, bisexual, transgender, queer/questioning in addition to other terms such as intersex, asexual, non-binary and pansexual.
M	Mean
MD	Moral Distress
MI	Moral injury
MIES(-C)	Moral injury events scale (civilian)
N	Number of participants
NICE	National Institute for Health and Care Excellence
OR	Odds ratio
PCL-5	Post-traumatic Stress Disorder Checklist for DSM-5
PICOSS	Population, Intervention, Comparison, Outcomes, Study and Setting
PMIE(s)	Potentially Morally injurious events

Definitions and Abbreviations

PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols
PTSD	Post-traumatic stress disorder
ROBIS	Tool to assess the risk of bias in systematic reviews.
SS	Social support
UCLA	University of California, Los Angeles
UK	United Kingdom
USA	United States of America
SD	Standard deviation
SWiM	Synthesis Without Meta-Analysis
WHO	World Health Organisation

Chapter 1: A systematic review of the association between social support and the experience of moral injury in adults

1.1 Abstract

The research base exploring moral injury (MI) has grown over the last 20 years, helping to refine how it is defined and used. The symptoms of MI are related to the social emotions of shame and guilt, however, there is little research into the relationship between social support (SS) and MI. This systematic review aims to explore the evidence of how SS relates to MI. Literature searches were conducted across six databases known for their connection to psychology and sociology research, in November 2023. Studies were required to have measured a form of MI and SS, in addition to reporting on a quantitative analysis between both variables. Two synthesis methods were used in the review of 13 studies: summary of effects and narrative synthesis. The majority of studies reported a negative association between SS and MI, indicating that less support is associated with higher levels of MI. The results were split into two groups, defined by how SS was conceptually measured, either by its presence or its absence. Topics explored connected to how different forms of SS may present, and how SS relates to the relationships between MI and other variables. Limitations of this systematic review are discussed, with recommendations provided for future research around MI. This includes considerations of how MI is measured and the cultural differences in expectations of SS.

Keywords: Moral Injury, Social Support, Social Isolation, Emotional Support, Systematic Review

1.2 Introduction

1.2.1 Moral Injury

Moral Injury (MI) is broadly considered to occur when one's moral codes or values are broken, though acts or omissions by the self or others. As a concept, MI has been going through the process of refinement since it was first used by Shay (1994) in the context of traumatic experiences in the Vietnam War. Shay considered MI as a form of betrayal, where leaders with authority acted immorally in high-stakes situations. Litz et al. (2009) expanded on this definition to include the individuals' experiences of breaking their own moral code. Litz et al. defined MI as the violation of deeply held moral beliefs through presenting as a victim, witness, or perpetrator to an event, either through action or omission. A shared outcome of both definitions of MI is the emotional responses (shame, guilt, and/or anger), a loss of trust, alongside continued lasting suffering due to psychological, behavioural, relational, spiritual and/or social dysfunction (Farnsworth et al., 2017). The changes to trust relate to the impact on self-confidence and/or the expectations of others, where the trust to act ethically is reduced (Litz et al., 2009). There is continued debate over the role of physical responses within MI. Litz et al. (2009) suggested that MI does not produce physiological arousal, whilst Shay (2014) claims otherwise citing his practice-based evidence. He suggests that this difference in MI symptomology may relate to whether the source of the MI is from others or the self, with acts from others potentially linking to hyperarousal (Shay, 2014).

The concept of MI has developed over the past 20 years, from research into trauma responses which were incongruent with the diagnostic criteria of post-traumatic stress disorder (PTSD). Although MI does not have diagnostic criteria itself, it is considered to be a vulnerability factor to developing other mental health issues, such as PTSD and depression (Fani et al., 2021). Frankfurt and Frazier (2016) argue that the lack of diagnostic criteria has reduced conceptual clarity in research. For example, exposure to potentially immoral acts has been conflated with experiencing MI. This is an issue, as although exposure to potentially immoral events is required for subsequent MI, it in itself does not determine MI's development (Jordan et al., 2017). Similarly to wider trauma experiences, this is due to the role of perceptions and appraisals of the event being a key factor in establishing if moral rules have been broken (Lancaster & Erbes, 2017). In their MI research review, Frankfurt and Frazier (2016) acknowledged how MI research is in its infancy alongside MI's theoretical development. This understandably leads to changes in how MI is used conceptually and measured across time as our understanding progresses. This was demonstrated within the systematic review and content analysis of MI measures (Houle et al., 24). It demonstrated how most MI outcome measures have been developed within the last 10 years, showing how relatively new the process is. Houle also highlighted how most measures were below adequate in their structural validity for MI. Comprehensive reviews such as this allow for the quality of research around MI to improve moving forward, whilst holding in mind the issues with previous research in the area. For this systematic review, consideration will be held for how MI is conceptualised and measured. However, studies will not be excluded for methods in which they measured MI, as this would severely limit research to draw upon within the topic area. It would also ignore the context of when the research was completed e.g. the limitations of tools available to measure MI. Instead, this systematic review will present the current understanding of the relationship between SS and MI alongside understanding the limitations of previous MI research.

It is also important to consider overlapping or co-occurring concepts within a systematic review relating to MI, as this will guide the search process for papers. This will be done by clarifying the definition of MI used in this review and maintaining broad initial searches across concepts to prevent early exclusion of papers. PTSD and depression are frequently reported to be co-occurring with MI. This was demonstrated in a prevalence study which found that veterans with probable PTSD or depression were more likely to have encountered a potentially morally injurious event (Norman et al., 2022). Below is an exploration of how the conditions differ and relate.

1.2.2 Moral Injury and PTSD

The International Classification of Diseases (ICD) states a PTSD diagnosis occurs following exposure to a threatening or horrifying event, which results in re-experiencing symptoms, avoidance of internal and external triggers and persistent hypervigilance (World Health Organization, 2023). Additionally, these symptoms should persist beyond several weeks and have a significant impact on a person's ability to function within important areas of their life. e.g., socially or occupationally. However, the Diagnostic and Statistical Manual of Mental Disorders' (DSM-5; APA, 2013) diagnostic criteria for PTSD differs slightly. Here traumatic events are specified as "actual or threatened death, serious injury, or sexual violence" (APA, 2013, p. 271), in addition to requiring the experience of negative cognitions and emotions to either start or worsen at the time of the trauma. The cognitive model of understanding PTSD sees the traumatic event as interrupting the normal memory processes within the brain. This causes issues of integrating the meaning of the event into established narratives, which in turn impacts belief systems (Ehlers & Clark, 2000).

MI shares features of its presentation with PTSD, such as symptoms of re-experiencing, avoidance (Litz et al., 2009) and emotional responses of shame/guilt, which was added to the PTSD diagnostic criteria in the DSM's forth revision (APA, 2013). It has also been noted how in some cases traumatic experiences cannot be simplified to either life threatening or morally injurious (Stein et al., 2012), which highlights how PTSD and MI can simultaneously occur. Additionally, there is evidence of an interaction between the two constructs, with trauma-related shame shown to predict PTSD symptom severity within veterans (Cunningham et al., 2018). This shows that these two concepts have the potential to overlap, co-occur and influence one another. However, the research also shows that they are conceptually different.

A key difference between these constructs is the emotional experience, with PTSD relating primarily to fear due to the loss of safety, and MI relates to shame, guilt or anger due to the loss of trust (Litz et al., 2009; Stein et al., 2012). This is supported further in an MRI study exploring the neurological pathways for trauma responses (Ramage et al., 2016), which showed PTSD related to brain activation within the Amygdala, an area related to fight or flight response and anxiety. Comparatively, for those who experienced non-threat-based trauma (which was inclusive of MI), the Precuneus was primarily activated. Similarly, another MRI study with military veterans found dissociable neural pathways between participants who had experienced a PMIE compared to with PTSD symptoms (Sun et al., 2019).

The experience of traumatic events is also a source of difference between PTSD and MI. The DSM-5 (APA, 2013) require the traumatic event for PTSD to relate to death, serious injury or sexual violence. Comparatively, the experience resulting in MI is referred to as potentially morally injurious events (PMIEs), in which the only criterion for PMIE is the subsequent presence of MI (Litz & Kerig, 2019).

Lastly there are discussions into the role of MI in the complexity of trauma presentations within clinical practice. Shay (2014) noted how he sees distinguishing features between MI and PTSD from his practice-based experience. He reports that PTSD (as defined by the diagnostic criteria and without comorbidity) did not link to addiction, suicidal ideation, risk, or aggression, which are associated with MI. When this was explored within a systemic review, Griffin et al., (2019) endorsed the association from MI to risk and suicide when compared to PTSD populations, although the results were mixed in studies exploring aggressive behaviours or substance misuse. However, as this systemic review acknowledged, these are under researched areas and there are few studies available to draw conclusions from, reducing the certainty around findings. A study by Litz et al. (2018) adds to this comparison between MI and PTSD. Through a cross-sectional cohort study, they compared outcomes between those who have experienced life-threatening trauma (as defined by criteria A in DSM-5's PTSD diagnostic criteria) and those who experienced PMIEs. The measures in the study were chosen to assess what clinicians have observed to be the most challenging to veterans' identity and wellbeing within trauma work. Here they found the MI group to have significantly higher scores of reexperiencing symptoms, sense of responsibility, sense of wrongdoing, negative self-cognitions and sadness, compared to the PTSD group. Similarly, Koenig et al., (2020) found through multivariate analysis between veterans scores on a MI symptom measures and the PTSD DSM criteria, that the strongest overlap in symptoms is related to negative cognitions and emotional responses. The combination of these studies indicates that although there is an overlap in symptomology for PTSD and MI, when directly compared, MI is associated to the more challenging experiences seen within trauma response and potentially more complexity in treatment settings.

Although there can be shared symptomology when considering the impacts on function, cognition and at times emotions, there is evidence to show that MI and PTSD are conceptually and mechanically different.

1.2.3 Moral Injury and Depression

Similarly to PTSD, depression also produces symptoms akin to MI, in addition to there being comorbidity (Williamson et al., 2018). The overlapping symptoms include the association and risks established between depression/MI and suicidal ideation (Bryan et al., 2014; Pompili, 2019), the negative social functional impact (Hirschfeld et al., 2000), and negative beliefs about the self or others (Beck & Beck, 2011; Griffin et al., 2019). However, a key difference lies in how the concept of morals can present in both conditions. In depression, there may be a disconnection or concern about alignment to moral values, whereas within MI there are established rules which are subsequently broken (Currier et al., 2021). There is also evidence which suggests that MI has a greater negative impact on functioning within maintaining health, work and relationships compared to depression (Maguen et al., 2022). A final difference is presented in the origins of both conditions. MI can only develop following a PMIE, whereas the cause of depression is still debated with theories developing in biological, psychological and social approaches (World Health Organization, 2024). For example, a leading theory and the basis for cognitive behavioural treatment (CBT), suggest depression is facilitated by the cognitive triad, a negative view of self, world and future (Beck & Beck, 2011). A systemic point of view considers how societal power is experienced and its impacts on depression (Neitzke, 2016). From a biological perspective, there is evidence of reduced neuroplasticity and heritable traits that link to depression (Dean & Keshavan, 2017). All of these perspectives contribute and acknowledge their limitations in fully explaining the range of experiences within depression, demonstrating the complexity of the condition.

1.2.4 Moral Distress

The final concept to consider and distinguish between, is MI and Moral Distress (MD). The concept of MD was developed within healthcare settings, to understand the psychological impact of acting incongruently with one's own ethics (Jameton, 2013). A systematic review looked to define MD and concluded that it required exposure to a "moral event", where there is a moral dilemma or uncertainty, which provokes psychological distress (Morley et al., 2019). The emotional response in both MI and MD are shame, guilt or anger, which Farnsworth (2017) related to having an adaptive function of promoting group cohesion through shared moral beliefs. This would encourage individuals to prioritise group needs and therefore increase chances of survival. MD differs from the MI definitions through the lack of lasting impact on function and beliefs. Litz and Kerig (2019) envisioned these concepts as sitting on a continuum relating to the degree of harm and impact upon the person's life. On this continuum, they considered moral frustrations to be at the least degree of harm, MD at a mid-point and MI to be the highest degree of harm. Similarly, as you moved up the degrees of harm, the frequency of encountering these concepts was reduced. This indicates that MD is less impactful, causes less harm and is more common than MI.

1.2.5 Social Support

Social support (SS) can be defined as the access to psychological, emotional and material resources provided to an individual through interpersonal interaction (Rodriguez & Cohen, 1998). At the time of writing there are no systemic reviews exploring the relationship between MI and SS, although it does present as a subtheme in other reviews, such as Griffin et al,'s (2019) systematic review. This would be a useful topic to explore further within a future systematic review, as there are links between SS and general health/wellbeing, correlate conditions of MI such as PTSD, as well as MI itself. With MI being in the early stages of conceptual development and as a research topic, there are fewer papers to draw upon to explore the interaction between SS and MI. However, the evidence of its effects within wider physical and mental health indicate it is an area which could be understood better in MI.

There is a growing body of evidence around the effects of SS and its connection to mental and physical health. A meta-analysis (Holt-Lunstad et al., 2010) exploring how relationships influence risk factors for mortality showed stronger social relationships increased the odds of 'survival' by 50%. The inclusion of cohort studies in this meta- analysis adds support the direction of this relationship but acknowledges that it cannot be presented as a causal relationship due to the lack of control for confounding variables (e.g. gender, physical ability). However, it was able to compare its findings to well-established risks to health e.g. smoking, to highlight the comparable effect. Similarly, longitudinal research found that older adults experiencing loneliness had shorter and less healthy lives than their peers who did not report loneliness (Malhotra et al., 2021). In considering wellbeing, a meta-analysis exploring the mental health of parents and the support they receive (Dunst, 2023) indicated that both formal (from services or systems) and informal (personal relationships) forms of support were positively correlated with improved well-being (weighted average r=.13 and r=.30 respectively). However this meta- analysis was based on cross-sectional studies and so causation cannot be inferred due to the lack of longitudinal information. Additionally, it appears that the quality of social connections was associated with mental health, with dissatisfaction being the strongest predictor of negative mental health (Borowski & Stathopoulos, 2023). This study utilised survey outcomes in a structural equation model to understand the direct and indirect effects of social connectedness and physical location on mental health. These examples are used to demonstrate the breadth of research across a lifespan to consider how SS and health (both physical and mental) are connected.

As discussed, depression and PTSD share an overlap of symptoms and processes to MI, and these conditions are also significantly related to SS. The research has seen SS as a protective factor for depression across all life stages, although the importance of who is providing the support will change depending on the life stage (Gariépy et al., 2016). Within PTSD research a strong link was demonstrated between SS and PTSD symptoms, with both concepts mutually predicting the other's severity (Wang et al., 2021). This indicated that SS could lessen the impact of PTSD symptoms, but equally PTSD symptoms can reduce access to SS. This relationship was further explored in a meta-analysis which indicated that trauma with interpersonal elements had a stronger effect size for the relationship between PTSD symptoms and SS, compared to traumas relating to natural disasters (Zalta et al., 2021). Although the studies in this meta-analysis did not consider MI, the interpersonal element is a factor of MI and therefore it would suggest that a similar relationship would exist between MI and SS.

Within MI research there is evidence of changes to relationships, which in turn impacts access to support. A McCormack & Ell, (2017) qualitative study looking at veterans with MI, found that there was a theme of disconnection and rejection both within personal relationships, but also at an organisational level. For these participants it was noted how disengagement from their support systems led to intensified emotional experiences. Reduced social support also mediated a positive relationship between MI and substance use (Feingold, 2019), which indicated when SS is present, it can be a protective factor, but in its absence, it can be a risk factor to substance misuse. This shows how SS can be seen as an adaptive coping mechanism for those experiencing MI, whilst other research indicates SS to be a protective factor for preventing MI in military populations (Farnsworth et al., 2014; Harper et al., 2020).

The combination of these studies indicates there is a relationship between MI and SS to be explored further, and understanding the literature's current stance on this could support the direction of future research. It would also support clinical practice to consider different levels of interventions, as whilst trauma support is often individualised therapy, working at a system level can also help individuals to build resilience (Sippel et al., 2015). Within MI, shame and guilt are key emotional responses which are also considered to be social emotions; in that they only occur in the context of other people and the social norms of society (Sznycer et al.,2021). Therefore, considering the social context and how the individual interacts with that context would logically be an important element to account for.

1.2.6 Objectives

This systematic review is guided by the research question, “How does social support relate to the experience of moral injury in adults?”. As the concept of MI has developed over its short history within research, this review will be using the broadest definition of MI, to account for changes to how MI has been categorised over time. This definition will be of individuals experiencing lasting suffering inclusive of shame/guilt/anger and any form of dysfunction, following experience of an PMIE from transgressions to self, other or betrayal.

Social support within this review will be defined as a person’s ability to access any form of support (e.g. emotional, physical) from other people. Other people will be inclusive of any person or organisation. Studies will be required to measure how the individual is or is not accessing the resources from others. Studies which are only recording the presence of relationships or contact with others will not be included, as being around other people does not equate to gaining support.

Clinically this review could potentially help with the structuring of services working with MI (e.g. veterans services) to consider how SS is utilised to support their clients. This could include signposting to non-psychological services which provide community support.

1.3 Methods

3.1 Overview

A scoping search was completed to refine the research question, as well as consider search terms and inclusion criteria (Boland et al., 2017). The results of which can be found in the PICOSS in Table 1.

The reporting for this review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA; Page et al., 2021) which can be found in Appendix A. This review was registered with Prospero under identification number CRD42023489682, where the review protocol can be found.

Table 1

PICOSS table summarising decisions made from scoping searches.

Population	Adults (18+), any condition, who have experienced moral injury
Intervention	Any questionnaires measuring (a) a form of social support or connection, and (b) moral injury.
Comparator	Any form of analysis between social support and moral injury.
Outcomes	Health-based outcomes (subjective and objective) and social-based outcomes (subjective and objective).
Study design	Quantitative
Setting	All settings

1.3.2 Eligibility Criteria

Studies included in this review were (a) within an adult population, (b) using quantitative methodology, (c) using questionnaires to measure moral injury and social support and (d) analysing the relationship between social support and moral injury. Results were excluded if they were (a) not available in the English language, (b) published before 1994 and (c) not original/completed research. Date limitations were based on when the term "moral injury" was first defined and used within research (Shay, 1994).

1.3.3 Information Sources

The following databases were used for their connection to psychology and sociology research; PsycINFO, MEDLINE, Web of Science Core Collection, CINAHL Plus with Full Text (Cumulative Index of Nursing and Allied Health Literature), and Cochrane Library. Excluded databases included Scielo, due to a lack of English language results, ERIC due to the focus on education outcomes, Global Index Medicus due to a medical focus, EMBASE due to a pharmacological focus and Scopus due to its cross-over with the Web of Science.

1.3.4 Search Strategy

The search terms for each database can be found in Table 2, full search strategy can be reviewed in Appendix B. All results were exported and stored on Endnote (The EndNote Team, 2013).

Table 2

Search terms used for each database

Date of search	**Version of database**	**Interface**	**Syntax**
21.11.23	PsycINFO	EBSCO host	("Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”) AND (“Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organi?ation* support") AND (("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) N5 (question* or scale or measure))
21.11.23	MEDLINE	EBSCO host	("Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”) AND (“Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organi?ation* support" or (MH "Social Isolation") or (MH "Social Support+") or (MH "Interpersonal Relations+") or (MH "Social Environment+") AND (("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) N5 (question* or scale or measure))
21.11.23	Web of Science Web of Science Core Collection	Clarivate	("Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”)AND (“Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organisation* support") AND (Morally Injurious Events Scale or Moral Injury Events Scale or Expressions of Moral Injury or Scale Moral Injury Scale for Youth or Moral Injury Symptom Scale or Moral Injury Questionnaire or Moral Injury Appraisals Scale or Moral distress scale)
21.11.23	CINAHL Plus with Full Text	EBSCO host	("Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”) AND (“Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organi?ation* support" or (MH "Social Isolation") or (MH "Social Support+") or (MH "Interpersonal Relations+") or (MH "Social Environment+") AND (("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) N5 (question* or scale or measure))
21.11.23	Cochrane Library	Wiley	("Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”) AND (“Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connection” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relationships” or Mentor or “Social functioning” or “Social withdrawal” or “Peer relationship” or loneliness or “community support” or "organizational support") AND (("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) Next (questionnaire or scale or measure)):

Search terms were defined through exploration of each topic on the databases. In searching for papers relating to MI, the search terms were expanded to include “moral distress” to ensure studies were not excluded early if the terms had been used interchangeably. The terms “compassion fatigue” and “spiritual distress” were excluded as possible search terms due to the concepts and search results being thematically different to MI. Additionally, some search terms were altered depending on the databases and how subjects were coded. For example, “social networks” was only used on databases which had subject codes for the interpersonal connection definition of the term rather than the social media term.

No limiters were applied to limit bias in the form of uncategorised papers being excluded from the results. All results were published post 1994 which fulfilled one of the inclusion criteria.

1.3.5 Data Collection Process

Once references were collected in Endnote, duplicates were removed. A screening tool (Appendix C) was used as a guideline against the titles and abstracts of papers and those which met the exclusion criteria were removed. In situations where it was unclear if the paper met the inclusion criteria, they were retained to be reviewed further. Full-text versions of the remaining papers were collected, and the screening tool was completed for each paper. No automation tools were used.

1.3.6 Data Items

Data extraction included authors, year of publication, peer-reviewed status, study design, analysis method, location of study, sample size, population, inclusion criteria, demographics (age, sex, ethnicity, occupation), outcome measures used, descriptive statistics of the social support or MI variables used, and relevant results. As studies often included additional variables (e.g., PTSD measures) which are not related to the research question, only results relating to the measures of SS and MI were extracted. Missing data was assumed to have not been collected in the original study.

1.3.7 Risk of Bias

To minimise the risk of bias, ROBIS (Whiting et al., 2016) was used in conducting the review. This tool consists of four domains; eligibility criteria, selection of studies, data collection and synthesis, with each domain using criteria to identify areas of bias and check the suitability of the review. This tool was used by the researcher in the design of the review to minimise the risk of bias, and then used independently by another person at the end of the review. Scoring on this tool falls into the categories low or high bias with the option for unclear if required. Both the researcher's and independent checker's results indicated low bias across the four domains.

Resources were limited for the recruitment of a second screener to complete a full dual screening. The primary researcher completed the systematic review process in its entirety before a research assistant re-ran the searches and screened 20% of the papers for eligibility and data extraction. Setting a 20% check of searches was based on the Cochrane Rapid Review guidance (Garritty et al., 2020), which is designed for systematic reviews which are limited in resources e.g., time. Both researchers worked independently and compared results once each stage was completed. A Kappa statistic was used to assess interrater reliability (McHugh, 2012). Any discrepancies found were discussed to decide upon the inclusion of the paper in question in the study.

1.3.8 Effect Measures

The measures of interest are those that examine moral injury and social support in a quantitative approach. For each concept, there are multiple versions of idiosyncratic or standardised measures which could potentially be used.

1.3.9 Synthesis Methods

A narrative synthesis and summary of effects were used as the synthesis methods. The inclusion of a summary of effects was informed by the Synthesis Without Meta-Analysis (SWiM) guidelines (Campbell et al., 2020). SWiM suggests that using only a narrative approach for studies using quantitative data will increase bias, privileging some results over others without considering the effect. The narrative synthesis aims to describe the overall effect and variations across the studies to generate a new perspective on data and allow for the relationship between SS and MI to be explored (Popay et al., 2006).

Two subgroups were created during this analysis, named social support and disconnection. These groups were created due to the shared thematic constructs of the measures used within the studies. Social support included measures which accounted for the practical and emotional support that a person has access to through their relationships. Disconnection included measures of thwarted belonging and loneliness, which both measure a lack of connection to the people around them.

1.4 Results

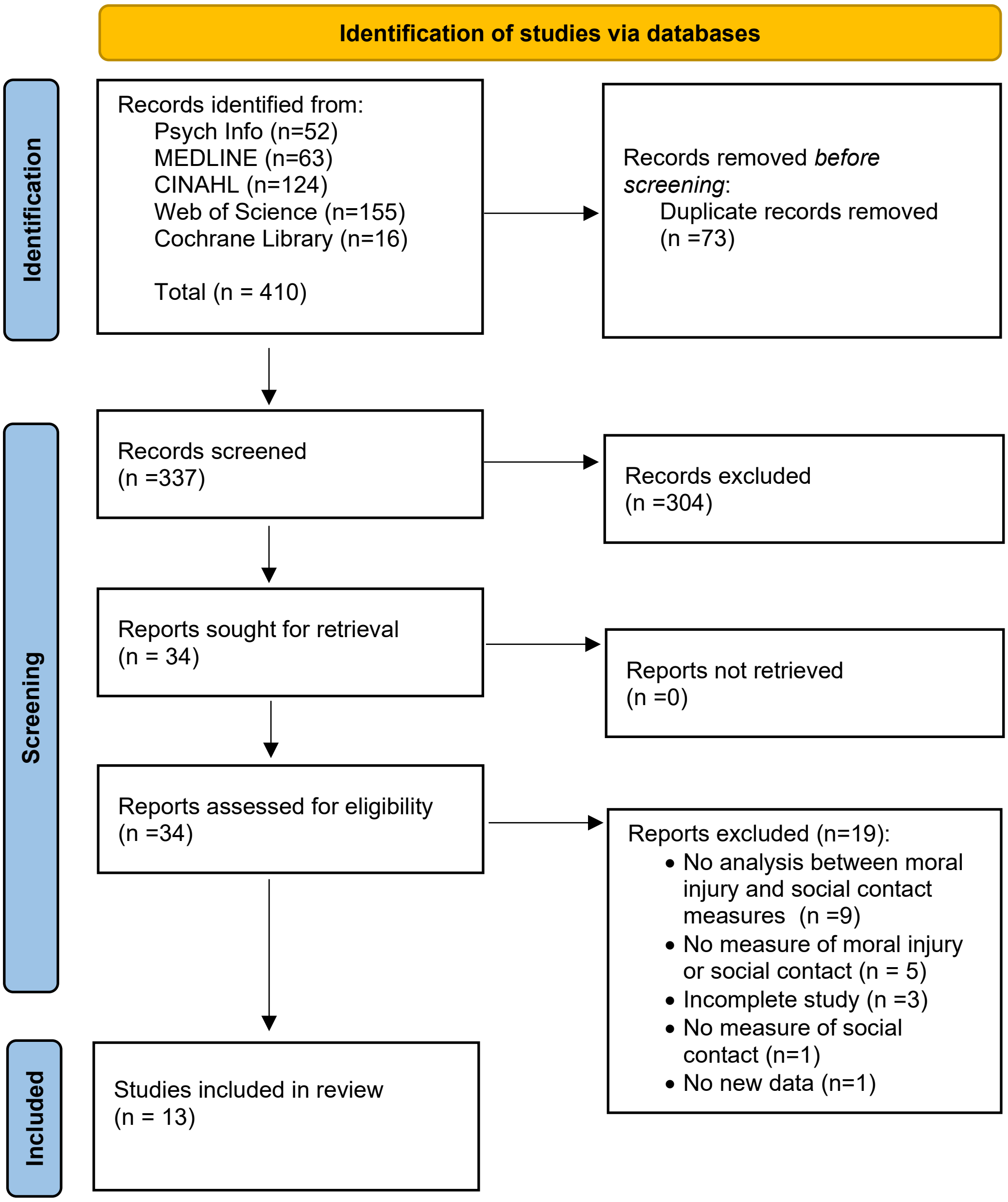
1.4.1 Study Selection

A summary of the process can be seen in the PRISMA flow diagram in Figure 1. This demonstrates that 410 records were identified across 5 databases, of which 73 were duplicate studies. The screening of titles and abstracts saw 304 records excluded according to the inclusion/exclusion criteria. 34 records had full text pulled for review, of which 13 met the inclusion criteria for analysis and were used for data extraction. An independent researcher re-ran the search protocols and obtained the same result from each database. Inter-rater reliability for dual screening was calculated for each stage, this was a substantial agreement at initial screening (k=0.79) and full-text screening (k=0.71). The papers in which there was a disagreement about their inclusion/exclusion were discussed and jointly agreed upon their outcome. An example of a discussion of a paper at full-text screening was Fernandez and

Currier (2023). This appeared to meet the criteria for one reviewer, however, the measure used was assessing the individual's functioning within a spousal relationship rather than access to SS. It was agreed this did not conceptually match the requirements for SS measures and was excluded.

Figure 1

PRISMA 2020 flow diagram



1.4.2 Study Characteristics

A summary of descriptive information for each of the eligible studies can be found in Tables 3 and 4, with full results in appendices D and E. Most studies were cross-sectional by design with two using a case series design. Except for one thesis, all studies were peer-reviewed. The studies took place in the USA (n=8), Israel (n=3) and the UK (n=1), with one study across the USA and Europe. The populations studied were mostly military/veterans (n=9) with other studies considering healthcare workers (n=3), journalists (n=1) and a general population with trauma (n=1).

1.4.3 Risk of Bias

All studies included were assessed for their rigour and relevance to the aims of this review through an exploration of bias and error. Two quality assessment tools were used for this process, the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (Appendix F) and the JBI Critical Appraisal Checklist for Case Series (Joanna Briggs Institute, 2020) (Appendix G). Two assessment tools were chosen to analyse the specific aspects of cross-sectional and case series design, which represents the studies selected for this review. To allow for comparison between these tools, they were chosen from the same organisation (Joanna Briggs Institute). The results of the quality assessments for cross-sectional studies can be found in Table 3, and Table 4 shows the case series quality assessment. These tools were not used with the intent of exclusion, but rather to inform the interpretation of the results found across the studies.

Table 3

JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies

Study	Were the criteria for inclusion in the sample clearly defined?	Were the study subjects and the setting described in detail?	Was the exposure measured in a valid and reliable way?	Were objective, standard criteria used for measurement of the condition?	Were confounding factors identified?	Were strategies to deal with confounding factors stated?	Were the outcomes measured in a valid and reliable way?	Was appropriate statistical analysis used?
Benatov et al., 2022	N	Y	Y	Y	Y	Y	Y	Y
Biscoe et al., 2023	Y	Y	Y	Y	Y	Y	Y	Y
Feingold et al., 2019	Y	Y	Y	Y	Y	Y	Y	Y
Feinstein et al., 2018	N	Y	Y	Y	Y	Y	Y	Y
Hagerty & Williams, 2022	Y	Y	Y	Y	Y	Y	Y	Y
Harper et al., 2020	Y	Y	Y	Y	Y	Y	Y	Y
Houtsma et al., 2017	N	Y	Y	Y	Y	Y	Y	Y
Kelley et al., 2019	N	Y	Y	Y	N	NA	Y	Y
Koster, 2020	Y	Y	Y	Y	N	NA	Y	Y
Levi-Belz et al., 2022	Y	Y	Y	Y	Y	Y	Y	Y
Ray et al., 2021	Y	Y	Y	Y	Y	Y	Y	Y

Y Yes, item is adequately addressed, N No item is not adequately addressed, U Unclear, NA Not applicable.

Table 4

JBI Critical Appraisal Checklist for Case Series

Study	Were there clear criteria for inclusion in the case series?	Was the condition measured in a standard, reliable way for all participants included in the case series?	Were valid methods used for identification of the condition for all participants included in the case series?	Did the case series have consecutive inclusion of participants?	Did the case series have complete inclusion of participants?	Was there clear reporting of the demographics of the participants in the study?	Was there clear reporting of clinical information of the participants?	Were the outcomes or follow-up results of cases clearly reported?	Was follow-up complete, and if not, were the reasons to loss to follow-up described and explored?	Was there clear reporting of the presenting site(s)/ clinic(s) demographic information?	Was statistical analysis appropriate?
Chestnut et al., 2020	N	Y	Y	Y	N	Y	NA	Y	Y	Y	Y
Hines et al., 2021	N	Y	Y	Y	N	Y	NA	Y	Y	Y	Y

Y Yes, item is adequately addressed, N No item is not adequately addressed, U Unclear, NA Not applicable.

Table 5

Study	N	Population	Age	Gender	MI measure	SS	Association between MI and SS (+/-)	Pearson's r	P-value
Chesnut et al. (2020)	Baseline = 9,566 Endpoint = 6,480	Veterans	not reported	81.8% Male 18.2% Female	Moral Injury Events Scale (MIES)	item modified Medical Outcomes Study Social Support Survey (mMOS-SS)	-	N/A	N/A
Feingold et al. (2019)	191	Veterans	M= 25.39 (SD=2.37)	85.4% Male 14.6% Female	Moral Injury Event Scale (MIES)	Multidimensional Scale of Perceived Social Support (MSPSS).	-	−.18	<0.05
Feinstein et al. (2018)	80	Journalist	M= 42.95 (SD = 8.44)	58.8% Male 41.2% Female	Moral Injury Events Scale (MIES-R).	A questionnaire was created for the study exploring the work environment.	-	-.23	.046
Harper et al. (2020)	109	Veterans	M=50.19 (SD=11.89)	90.8% Male 9.2% Female	Moral Injury Event Scale (MIES)	Multidimensional Scale of Perceived Social Support (MSPSS).	-	-0.2	<.05
Hines et al. (2021)	96	Healthcare workers	M=40 (SD=10.4)	49% Male 51% Female	Moral Injury Events Scale (MIES).	The questionnaire created for the study was based on domains of resilience and workplace support.	-	N/A	N/A
Houtsma et al. (2017)	937	Military personnel	M=28.67 (SD =8.19)	84.1% Male 15.9% Female	Moral Injury Events Scale (MIES)	Deployment Risk and Resilience Inventory (DRRI)	-	-0.21	<0.01
Kelley et al. (2019)	189	Veterans	M= 43.14 (SD = 12.23)	96.8% Male 3.2% Female	Expression of Moral Injury Scale–Military Version (EMIS-MV)	Friendship Scale	-	−.52	<.05
Koster (2020)	203	Military and veterans	M=40.9, (SD=12.8)	60.6% Male 38.4% Female 0.5% Male-to-Female Transgender 0.5% Female-to-Male Transgender	Moral Injury Questionnaire-Military Version (MIQ-M) and The Expressions of Moral Injury Scale-Military Version	Adult Toolbox Social Relationship Scales-Social Support (NIH_SS)	-	-0.36	<.001

Levi-Belz et al. (2022)	191	Veterans	M= 25.4 (SD= 2.15)	88% Males 12% Female	Moral Injury Event Scale (MIES).	Multidimensional Scale of Perceived Social Support (MSPSS).	-	-0.18	< .05

Descriptive information for studies within the social support group.

Table 6

Descriptive information for studies within the disconnection group

Study	N	Population	Age	Gender	Moral Injury Measures	Social support measure	Association between MI and disconnection +/-	Reported effect	P-value
Benatov et al. (2022)	296	Health and social care workers	M=40	22% Male 78% Female	Moral Injury Symptom Scale – Health Professional Questionnaire and Moral Injury Event Scale	Interpersonal Needs Questionnaire	+	r= 0.43	< .001
Biscoe et al. (2023)	428	Veterans	M = 50.4 (SD =0.9)	97.4% Male 2.6% Female	Moral Injury Outcome Scale	UCLA Loneliness Scale	+	b= 5.89	0.012
Hagerty and Williams (2022)	1,122	Health care workers	M=39.29	11.2% Male 88.8% Female	Moral Injury Events Scale	DeJong Gierveld Loneliness Scale	+	b = 1.92	< 0.001
Houtsma et al. (2017)	937	Military personnel	M=28.67 (SD =8.19)	84.1% Male 15.9% Female	Moral Injury Events Scale	Interpersonal Needs Questionnaire	+	r= 0.31	<0.01
Ray et al. (2021)	147	The general population with trauma experience	M=35.92 (SD =11.72)	43.86% Male 56.14% Female	Moral Injury Questionnaire	Interpersonal Needs Questionnaire	+	r= 0.37	< 0.001

1.4.4 Summary of Effects

A meta-analysis was not viable due to the variance of how measures were used across the studies and how the subsequent data was reported. Despite the studies often using the same or similar measures, the analysis utilised different combinations of subscale scores and total scores for both SS and MI measures. For example, Feingold et al., (2019) reported correlations between the subscales on a MI measure and the total only for a SS measure, whilst Harper et al., (2020) provided subscales only for both measures, without total scores. It was not possible to combine the subscale's correlations to give an indication of what the total scores correlations would accurately be. Five authors of the studies were emailed requesting additional information to support a meta-analysis, but unfortunately only one author responded to the request. Therefore, using a meta-analysis approach would not have produced valid or meaningful results as indicated in suitability guidance (Higgins, 2023).

It was not possible to include all studies in the summary of effects due to the variety of reporting. Chesnut et al. (2020) and Hines et al. (2021) were excluded from this summary due to their case series design and use of parallel growth curve modelling in the analysis. These differed from the remaining studies which had cross-sectional approaches using correlation and regression analysis. Two studies used a longitudinal approach, meaning they have accounted for time as a variable in the design and analysis, which was not possible within the cross-sectional studies. This could skew the summaries of effects and so the focus will be on majority of results which are directly comparable. The main effects and p-values were extracted. In the case of Feinstein et al. (2018) their t-test reported Cohen's D as their effect, which was then converted to person's r to aid comparison. Biscoe et al. (2023) and Hagerty and Williams (2022) reported unstandardized beta values from their regression models in which loneliness was the predictor variable to MI. Both studies did not report the standardise Beta or R^2, which did not allow for the conversion of these studies' effects to persons r.

When pulling summary data, the following rules were applied for prioritising reports of effects when multiple measures or scales are reported, as suggested within the Cochrane Handbook for systematic reviews (Higgins, 2023). For the MI-related measures, if the total score was not available, the strongest effect was chosen as any subscale demonstrates a form of MI. For social support measures, the measures which conceptually connected to social support the most were prioritised. This was done through examining the properties of the measures and the researcher using their own judgment on which measures aligned best to the definitions of SS used for this review. The results table can be found in Table 5.

For the social support group, two studies were not included in this summary due to the differences in data collection and analysis (Chesnut et al., 2020; Hines et al., 2021). For the remaining seven studies, all reported significant negative correlations between MI-related constructs and SS. The range of r-values was between -.52 to -.18, with the mean r-value = -.27 and a standard deviation of .13. As all p-values were provided as estimates, a conservative approach was taken, and the highest value was used. P-values ranged .001 to .05, the mean P-value = .03, with a standard deviation of .022.

In the disconnection group, three studies reported r-values and two reported unstandardized betas as their main effects. For the correlation studies, the range of r-values was between .31 to .43, with the mean r-value = .37 and a standard deviation of .06. P-values ranged .01 to .001, with the mean P-value = .004, with a standard deviation of .005. These showed a positive association between social disconnection and MI-related constructs. For the two studies using regression analysis, the mean b value = 3.91 with a standard deviation of 2.81. The mean p-value for the regressions was .0065 with a standard deviation of 0.008. Both showing loneliness to significantly predict MI-related constructs.

1.4.5 Results of Narrative Synthesis

Nine studies were included in the social support group and five within the disconnection group. Houtsma et al. (2017) appears in both groups due to their use of multiple scales, one for social support and one for thwarted belonging.

1.4.5.1 Social Support

Seven studies were set within a military or veteran context, the remaining two studies were within journalist and healthcare populations. Seven studies used the Moral Injury Events Scale, whilst the remaining two used the Moral Injury Questionnaire and The Expressions of Moral Injury Scale. For SS measures, three studies used the Multidimensional Scale of Perceived Social Support, two created idiosyncratic questionnaires for their studies, one Medical Outcomes Study Social Support Survey, one Deployment Risk and Resilience Inventory, one Friendship Scale, and one Adult Toolbox Social Relationship Scales-Social Support. Sample sizes ranged from 80 to 6480.

Overall SS was reported to be negatively associated with MI-related constructs, indicating that when there is less SS there are higher scores on MI measures (Chesnut et al., 2020; Feingold et al., 2019; Houtsma et al., 2017; Kelley et al., 2019; Koster, 2020). However, the combination of analyses across the studies produced more complex results and interactions.

1.4.5.1.1 Subscales of MI. The most common result reported across the studies was a significant but weak negative correlation between scores on the other-directed MI subscale and having a form of SS (Houtsma et al., 2017; Feingold et al., 2019; Koster, 2020; Harper et al., 2020; Levi-Belz et al., 2022).

There were mixed results around the strength of the negative correlations between self-directed MI and SS, with some studies finding weak significant associations (Feingold et al., 2019; Houtsma et al., 2017; Koster, 2020) whilst others did not find a significant correlation (Levi-Belz et al., 2022; Harper et al., 2020). The Kelley et al. (2019) study was somewhat of an outlier compared to these studies. Although their results were in line with the negative correlations previously established, they found stronger associations in the form of moderate negative correlations in both self- and other-directed MI towards SS. This discrepancy in effect could be stemming from either unaccounted confounding variables as indicated through the quality assessment (see Table 3) or the measure used for SS, which aimed to assess access to SS but also incorporated social disconnection (Hawthorne & Griffith, 2000).

Finally, the betrayal subscales also had mixed results with a significant weak negative correlation reported by Levi-Belz et al. (2022) and Houtsma et al. (2017) but non-significant associations were also found (Feingold et al., 2019; Harper et al., 2020) or not reported on due to how the MI concepts were measured (Kelley et al., 2019; Koster, 2020).

These results show the most consistent evidence appears to indicate that higher other-directed MI correlate to less SS. When other forms of MI are measured, through self-directed MI and betrayal, the results are mixed in ascertaining if there is a significant negative association to SS.

1.4.5.1.2 Forms of Support. Most studies considered a broad perspective of support, using total scores on measures rather than subscales in their reporting. The exception is in the Harper et al. (2020) study, which reported significant associations between SS and MI only occurring when considering support from family rather than receiving this from significant others or friends.

Other studies explored organisational support with mixed results. Feinstein et al. (2018) reported that lower levels of support from the workplace for journalists within warzones significantly related to other-directed MI. Similarly, Hines (2021) reported an almost significant negative association between workplace support and MI in healthcare workers. However, both studies did not use standardised measures of support which reduces the quality of the studies' results. All three studies consider different populations with different access to support systems, which makes it challenging to draw clear conclusions about what type of support is associated to experiences of MI.

1.4.5.1.3 SS Role Between MI and Other Variables. Lastly, four studies explored the moderating effects of SS on the relationship between MI and other constructs of interest through moderation or mediation analyses. SS was seen to have a significant moderating effect on the association between MI and suicidality (Kelley et al., 2019; Levi-Belz et al., 2022), which indicates SS to buffer the relationship between the variables. Harper et al. (2020) saw SS from family or significant others, to be a protective factor in the relationship between MI betrayal and PTSD, but only when betrayal was at low or moderate levels. When betrayal was high, this became non-significant. However, support from friends did not significantly impact the relationship between MI and PTSD. Only one study considered SS as a mediator (Feingold et al., 2019), which saw SS mediate the pathway between MI to higher levels of distress which in turn connected to drug use.

This shows that SS can impact the relationships between MI-related concepts and other distressing mental health symptoms. However, these studies explore conceptually differing mental health symptoms and are few in numbers, which weakens any conclusions drawn.

1.4.5.2 Disconnection

This group consisted of five studies, with two from a military/veteran's context, two within healthcare settings, and one within a general population who have experienced trauma. Three studies used the Moral Injury of Events Scale, one used the Moral Injury Questionnaire, and one used the Moral Injury Outcome Scale. The measures of disconnection included three Interpersonal Needs questionnaires, one UCLA loneliness scale and one DeJong Gierveld Loneliness Scale. The sample size ranged from 147 to 1,122 participants.

Overall, a reported positive association was found between social disconnection and MI (Benatov et al., 2022; Ray et al., 2021; Hagerty & Williams, 2022; Biscoe et al., 2023; Houtsma et al., 2017). This was seen as a low moderate correlation between thwarted belonging and MI (Benatov et al., 2022; Ray et al., 2021; Houtsma et al., 2017) and loneliness being significantly higher in those who have experienced PMIE than those who had not (Biscoe et al., 2023).

These initial associations were expanded on within the studies by Benatov et al. (2022) and Ray et al. (2021), which explored thwarted belonging's impact on the relationships between MI and depression. Thwarted belonging was not found to be a significant mediator between MI and depression, unless it was moderated by emotional dysregulation (Ray et al., 2021). However, Benatov et al. (2022) found thwarted belonging to be a moderating factor in the relationship between MI and depressive symptoms. Both studies were similar in quality despite working with differing populations (health care workers, general public), locality (Israel, USA) and sample sizes (293, 147). Although these are only two studies it does indicate that thwarted belonging has a role in the relationship between MI and depression that could be further explored.

Loneliness was shown to be a predictor of MI though linear regression models (Hagerty & Williams, 2022; Biscoe et al., 2023) although these studies vary in their sample size (n=1122 and 428 respectively) they both presented with significant models. The size of the effect is larger within the smaller sample, however the difference between the b values (3.97) could be accounted for as smaller sample sizes are prone to higher variability in effects found. Nevertheless, it is not possible to draw clear conclusions on the size of this effect as there are only two studies to draw data from.

Although few studies were exploring social disconnection, the results demonstrate the impact of the absence of social support. The consistent results across the studies indicate that high levels of disconnection are associated with and a significant predictor of higher scores on MI-related measures.

1.5 Discussion

This systematic review was guided by the research question “How does social support relate to the experience of moral injury in adults?”. The results of this indicated higher levels of SS were associated with lower levels of MI, although the strength of this relationship varied. Most studies showed good quality in their design and reporting as shown in tables 3 and 4, limiting the risk of reporting bias. When exploring the subscales of MI, the significant results were mixed. The other-directed MI subscale presented as the most consistent report of significant associations to SS, compared to self-directed MI and betrayal. As the scoping searches indicated few papers explored the relationship between SS and MI, a broad approach was taken for this systematic review, through the definitions of concepts used and the search strategies designed to prevent early exclusion. This in the hope it can guide future research on the topic.

The results from this systematic review are presented tentatively due to the low number of papers inputting into topics. However, the results indicated several areas which would be interesting to expand upon with in future research. This included the effects of different forms of relationships and social disconnection. Harper et al. (2020) suggested family relationships were more impactful in buffering the effects of MI than other close relationships, but this was the only study with standardised measures which considered specific types of SS and its effects. This study highlights a potentially under-researched area, of how different forms of SS from varying sources could interact differently with MI. Similarly, it would also be interesting to consider if these forms of SS and their impact change depending on the context of the person. For example, culture informs expectations around SS, as culture holds the norms for how the individual and their characteristics (e.g., gender, physical ability) interact with the systems around them. For example, differences are noted between individualistic societies, where self-reliance and individual needs are prioritised, compared to collective societies, where the needs of the community are held as more important (Hofstede, 2001). For those from individualistic societies which are often related to Western cultures, there may be an increased willingness to use their social networks for support, compared to collectivistic societies where there can be the negative cultural assumption that seeking SS burdens others (Kim et al., 2008). Most studies in this review were from a Western, individualist culture with a majority white ethnic background. Additionally, with eight studies from a military/veteran background, most participants were male compared to a more equal split of gender among the remaining five studies (further details can be found in the data extraction table in Appendices D and E). These factors bring into question how generalisable the findings are across culture and gender. However, with three studies from Israel, which is considered a collectivist society, there is an indication that these effects may be maintained across different populations. Although further research would be needed to establish this.

There could also be a clinical impact of understanding how different forms of SS impact MI research, with healthcare workers demonstrating that MI can be associated with poor mental well-being and lack of resources (Williamson et al., 2023). This study was within the context of NHS workers during the Coronavirus pandemic, however, there has been a continuation of challenges since then with high levels of staff turnover, reduced resources, and low levels of staff wellbeing. Daniels et al. (2022) highlighted that a combination of issues and the economic impact on the NHS, meant that poor well-being was costing an estimated £12 billion a year. In an environment where staff can encounter PMIEs, a better understanding of what form of SS is helpful in buffering the impact of MI could guide staff wellbeing services in directing support, and could be another route for future research.

A limitation of this review was the potential for reporting bias to be present, through the different approaches of analysis across the studies. For example, Feingold et al. (2019) and Harper et al. (2020) both used the same measures of MI and SS. However, Feingold et al.

reported on correlations between the subscales of MI against the total score of SS, whereas Harper et al. reported on all MI subscales against all SS subscales. This is an issue, as we were unable to compare like-for-like what has been measured as MI or SS. If all subscales were reported alongside the totals, this would allow for better comparisons through a meta-analysis as well as a clearer picture of how different forms of MI might relate to SS. As this review utilised a broad definition of MI, the differences in how it is reported are less impactful, as all subscales represent a form of MI (Litz et al., 2009; Shay, 2014). However, the mixed finding around the associations between self-directed or betrayal MI and SS highlights the need for further research. As an emerging concept, MI has yet to be clearly defined, and models to understand the underlying mechanisms are being developed. Understanding if there is a disparity in how different forms of MI relate to SS would aid the theoretical understanding of MI, by providing evidence of how SS may interact with maintenance factors e.g. rumination or avoidance. For example, in Farnsworth's descriptive-prescriptive framework (Farnsworth, 2019) they consider how, although the emotional reaction to PMIEs is not pathological, the subsequent responses could prolong moral suffering. This framework is rooted in functional contextualism (Farnsworth, 2019) which aims to consider how social context impacts a person's experience of MI. Therefore, understanding the differences between self-directed, other-directed and betrayal forms of MI and how they connect to SS, could inform a wider understanding of barriers to moral healing.

A challenge of this literature review was in exploring the concept of MI which currently lacks definitive boundaries between itself, other conditions, and MD. This brings to question the concept validity of how MI was measured across studies. As discussed, MI can only occur following a PMIE, whereby the symptoms (e.g., shame) then follow. Across the studies, some utilised questionnaires which are measuring PMIEs (e.g., MIES), whilst others look at symptoms of MI (e.g., MIOS). This is a common issue within MI research as noted in a systematic review by Houle et al. (2024) which concluded that exposure to PMIEs is often conflated with experiencing MI. However, it could also be argued that MI symptom measures provide the same issue, as the symptoms of shame, guilt and loss are shared with other mental health conditions. Out of the 13 studies used in this review, only two used a measure of MI symptoms and PMIE. This validity issue in measuring MI reduces the certainty that a true effect is being reported within the majority of studies. Therefore, the conclusions of how MI and SS relate within this review, must also be held tentatively. It is the hope that in highlighting these issues, future research into MI will be able to consider more robust measures as part of their design. As a whole MI research would benefit from including measures of both symptoms and events to strengthen concept validity. Similarly, the need for measures which incorporate both would better the research and clinical ability in assessing MI, such as the Moral Injury and Distress Scale which links PMIE to distress (Norman et al., 2023).

The formation of two groups (social support and disconnection) was informed by how the questionnaires were conceptually measuring SS, either through its presence or its absence. These groups may link to the distinction between whether someone has access to practical SS compared to the individual’s ability to engage in SS. As MI does not yet have its own framework to apply this idea to, this could instead be considered within the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1987). This is a well-established model for how people cope with distress; through first appraising the event, then appraising one’s own resources, both of which informs the coping strategy used. Within this model, the primary appraisal of the stressors would relate to the interpretation of moral rules being broken. The secondary appraisal involves evaluating the resources available both internally and externally, which would include SS. Within MI the key emotional responses (shame and guilt) in themselves can be a barrier to accessing SS. Nathanson (1994) categorised common responses to shame as attacking (either oneself or others) avoidance or withdrawal, all of which would increase difficulties accessing SS. This has been seen within wider trauma research which showed shame to be a mediator in the relationship between PTSD and negative expectations/perceptions of social networks (Dodson & Beck, 2017). It could be argued that this idea of resources and coping also presented itself in the Benatov et al. (2022) study which saw emotional dysregulation to be the moderating factor in SS mediating the relationship between MI and depression. Those who are emotionally dysregulated have reduced internal coping strategies to manage distress, therefore external support becomes more important. This could be another potential route to research in the future, to see how internal/external support impacts MI. Clinically this would then help in the recognition of resources available internally and externally with clients, and guide where to focus on building new resources to gain balance.

1.6 Conclusion

This systematic review indicates there is evidence that the access to SS is associated with lower scores of MI measures. However, these results are held tentatively within the context of limited papers inputting into the results, an awareness of MI as an emerging concept over the last two decades and the regular use of measures with poor conceptual validity with MI research. These elements limit the certainty of reported results and therefore the certainty of conclusions drawn in this systematic review. This review was hoping to provide an overview of the current understanding of how SS and MI interact, to provide a foundation for further research. To explore if these associations continue with more robust measures and across different populations would better the understanding of the effects between MI and SS.

Chapter 2: Prevalence and contributing factors towards moral injury within a homeless population.

2.1 Abstract

Moral injury (MI) has mostly been researched in populations based on occupation, within military/veteran or emergency services. This study aims to understand the prevalence rate of MI within a homeless population and explore predictive factors. 113 homeless participants were recruited from Hampshire charity services, between September 2023 and February 2024. This was a cross-sectional design where participants were asked to complete four questionnaires. A secondary data set, consisting of 408 general population participants was used as a control group for scores on MI measures. Predictive factors of MI within the homeless population included a history of addiction, adverse childhood experiences (ACEs), experiences of discrimination, gender, generational poverty, transition to homelessness and criminal encounters. Independent t-tests were performed on MI scores for the homeless and non-homeless groups. A linear regression informed predictive factors and mediation analyses looked at how PTSD symptoms may relate to these relationships. Results found that 60% of the homeless participants presented with MI symptoms and these scores were significantly higher than the non-homeless group. ACEs and discrimination predicted MI scores and mediation analyses showed a significant pathway through PTSD symptoms for both ACEs and discrimination to MI. However, the direct pathway between ACEs and MI was insignificant. Implications include considering how MI and complex PTSD are presented within the homeless community, suggestions for further research and how this could inform clinical practice are discussed e.g., building on trauma-informed care within services to include shame-informed practice.

Keywords: Moral injury, homeless, trauma, trauma-informed

2.2 Introduction

2.2.1 Moral Injury

Moral injury (MI) is the suffering which results from transgressions against one's moral rules, either through one's actions/omissions or through the actions of others (Litz et al., 2009). Moral rules are social constructs, impacted by socioeconomic and cultural factors (Litz et al., 2009). Therefore, determining if moral rules have been broken is dependent on the context and perception of the person.

The research into MI has predominantly taken place within a military context, which has consequently influenced the language used in outcome measures and research (Shay, 2014). For example, the literature often considers power imbalances as the ranking of position within the military, or the application of high-stakes situations such as active duty and war zones. As MI's applications have broadened out to other occupations (e.g. emergency services (Williamson et al., 2018)) and certain populations (e.g. refugees (Hoffman & Nickerson, 2022)), translations of these concepts are needed in formulations and outcome measures. The established links between MI and trauma or PTSD symptoms (Currier et al., 2021) indicate that there is scope for people to experience MI outside of an occupational context, although this is less researched. One study (Fani et al., 2021) exploring the civilian experience of MI, found that exposure to trauma, especially during childhood, was associated with MI. When considering other sources of MI, it was suggested by Borges et al. (2022) that social determinants of health may increase exposure to potentially morally injurious events (PMIEs). These social determinates were considered at an individual level of gender, sexual orientation , and ethnicity, as well as at an environmental level through adverse childhood experiences or interactions with justice systems. One of these social determinants of health was homelessness, as several correlates of MI are associated with aspects of the homeless experience. This includes the high levels of exposure to trauma and the occurrence of PTSD symptoms when compared to the general population as shown in a systematic review (Kim &

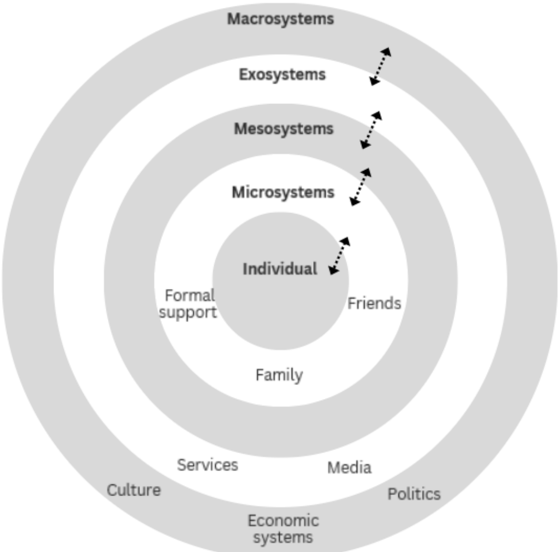
Ford, 2006), and the crossover of symptoms for PTSD and MI (Litz et al., 2009). Moreover, it has been shown that the homeless population experience social exclusion (Shinn, 2010), substantial levels of mental health difficulties and substance misuse (Gutwinski et al., 2021) in addition to stigmatisation (Boydell et al., 2000) in comparison to the general population. Similarly, MI is associated with social issues, relational difficulties, substance misuse and mental health issues (Farnsworth et al., 2014). These factors suggest there is the potential for MI to be present within the homeless community and that further exploration is required.

2.2.2 Homelessness and Moral Injury

At the time of writing, no studies have explored the experience of MI within a homeless population. To consider this further, the links between homelessness research and MI will be explored through the lens of Ecological Systems Theory (EST) (Bronfenbrenner, 2000). This provides a framework to present complexity in how an individual interacts with and is influenced by the systems around them. As shown in Figure 2, the individual can be seen at the centre of this ecosystem with expanding systems forming around them, from microsystems of friends or family, exosystems of policies or services and macrosystems of culture or values. Each layer exists and influences the experience of the individual at the centre.

Figure 2

Bronfenbrenner's (2000) Ecological Systems Theory



Although this study will be focusing on the individuals' experience of MI, awareness of the role and impact of other systems will aid the understanding of the homeless experience and how it may relate to MI. Due to the lack of research exploring MI within the homeless population, we will instead consider where the symptoms of MI may present for a person experiencing homelessness. The research into the experience of homelessness has seen the common occurrence of shame, which is maintained across cultures (Sutton et al., 2014). As shame is also an emotional response of MI, this will guide the exploration within the systems to consider how MI may connect to the homeless community. It should also be held in mind that it is not possible to infer that any presentation of shame relates to a MI. As we do not have the information around how these experiences of shame relate to the other MI features such as exposure to traumatic events or lasting suffering. The use of shame as a guide is to build hypotheses for topics to explore within this study.

Shame is considered to be a social emotion, in that the emotion exists in relation to how we are perceived by others (Gilbert, 2003). Social Functionalism is a framework based on evolutionary theory which considers emotions to be serving a purpose towards survival (Keltner et al., 2006). Human evolution has been influenced by the formation and maintenance of groups and relationships, which lessens the risks of encountering harm, increases resources and supports reproduction (Foley & Gamble, 2009). Tangney and Dearing (2003) described the MI emotions of shame and guilt as impacting both the individual and relational experiences. At the individual level, emotions encourage self-evaluation to guide learning and future behaviour. At the relational level, they can impact connections to others and systems over time, with shame/guilt influencing the ability to reengage with relationships, e.g. shame often provokes avoidance and distancing from others. Although shame and guilt have similar desired outcomes, they differ in functions as shame is self-focused in considering how acceptable we are to others and guilt is other-focused, in reflecting on how others are impacted (Gilbert, 2003). This was supported in research using a computer model exploring the evolution of shame and guilt within human societies (Shen, 2018). In this model they saw differing pattens in the behavioural responses to shame and guilt. Shame-hiding behaviours were only adaptive at an individual level if the group were unaware, whilst guilt-amending behaviours were adaptive both individually and within the group. Adaptive behaviours in this context were defined as ones that enhanced social connection. Within this context, the function of guilt and shame is to maintain a connection to the wider group by discouraging associated behaviours (Keltner et al., 2006).

The homeless community encompasses a broad range of demographics, whose shared characteristic is their socioeconomic position within society. When discussing homelessness within this study, it is inclusive of any individual without a permanent residence, such as those who are sleeping on the streets, or staying in temporary accommodations, hostels, supported housing, or couch surfing.

Macrosystems

Within EST, Macrosystems are considering the wider cultural and societal context, this includes the epidemiology and cultural beliefs towards homelessness. An ongoing challenge for those monitoring homelessness has been in how it is recorded and who is accessed. The “hidden homeless” are considered to be a proportion of people who are not known to homeless services and are more likely to be women, young people and those from minority backgrounds (Office for National Statistics, 2023). This has led to an underrepresentation and underestimation of the people and experiences within statistics relating to the homeless community.

The homeless charity Crisis has been running ongoing longitudinal studies into the trends of homelessness within England since 2011. Its yearly reports give insights into how changing political and economic factors impact the homeless population. Within the 2023 report (Fitzpatrick et al., 2023), they highlight that rough sleeping has increased by 26% within the year and “Core homelessness”, a term used to describe the most acute experiences of homelessness, has risen over the last 10 years. This report also anticipated rates of homelessness to increase significantly within the next year, based on experiences of poverty, lack of social letting options and issues within the private renting market.

In the UK as a whole, poverty has increased, based on the latest data collection in 2021 (Joseph Rowntree Foundation, 2023), indicating a cost of living crisis. It was noted that this data collection was completed during the Coronavirus pandemic which may have impacted results, but also highlighted that trends indicate living standards have continued to fall since, due to the global economy being affected by factors such as Brexit and the war in Ukraine. In relation to housing, demand for temporary accommodation has increased to its highest number since records began (Department for Levelling Up, 2023), and affordable housing stock is declining (Williamson & Perry, 2023). Within private renting, the Local Housing Allowance is a form of housing benefit which goes through regular periods of being frozen for several years, limiting the amount available to claim (Treasury, 2023). Alongside increased rental prices, and “no-fault” evictions where tenants can be evicted without reason, there has been a growth in demand for homeless prevention services (Fitzpatrick et al., 2023). Overall, this shows within the UK there is an increase in people experiencing homelessness and a reduction in resources, which consequently puts more demand and pressure on supporting services.

When considering culture, Farrugia (2016) argues that a capitalist society influences societal beliefs, leading to self-worth and morality being linked to material gain. This is due to the assumption that one’s societal position is self-determined. Therefore, a capitalist perspective sees those from a lower economic status, reflect lower morality. This creates a social hierarchy, which could be reflected in the UK's class system. Savage et al. (2001) described the UK class descriptions as a “loaded moral signifier” (p. 889), in that it is used more to indicate values and politics of a person, rather than simply used as an identification system. The cultural meaning of the UK's class descriptors relates to how people connect and respond to their societal position (Sayer, 2007) e.g., having pride or shame in identifying with a particular class. The social perceptions of those on welfare or low income can be seen in the derogatory use of the term underclass, both historically and currently (Garrett, 2019). Further support comes from research into experiences of poverty, with a cross-cultural study in seven countries finding shame, a negative moral emotion, to be a shared experience of those in poverty, despite differences in culture and resources (Walker et al., 2013). Walker related this to a shared public discourse which views poverty negatively, which Lister (2015) noted often results in "othering", where there is an attempt to create social distance from those perceived negatively. For example, the social stigma attached to services such as food banks is seen to be a barrier to accessing their support, as it would be an outward sign of poverty (Garthwaite, 2016).

These macrofactors demonstrate a negative cultural perception towards poverty and homelessness, and within the context of the UK there is an increase in experiences of both. These cultural perceptions are important to consider as they can be incongruent with the evidence within research. This is shown in a study by Bramley and Fizpatrick (2018), which demonstrated through surveys that there is a public misconception in regards to the causes of homelessness. The assumtion is that individual factors such as addiction or mental health cause homelessness, rather than systemic structural factors, such as discrimination or generational poverty. However, these perceptions do not align with the evidence which shows homelessness to result from an accumulation of individual and systemic risk factors (Bramley & Fitzpatrick, 2018).

Exosystems

The exosystems consider the role of policies and services, which are influenced by the culture and values they exist within. The cultural belief that homelessness is a problem located in the individual influences those who create and maintain policies and services. For example, at the time of collecting data for this study, the Home Secretary was pushing for the criminalisation of those rough sleeping and using tents, due to seeing homelessness as a choice (Crisis, 2023). This shows how a politician holding the cultural perspective that the problem is within the individual rather than systemically, then has the power to influence laws and affect the life of the individual.

At a service level, there are frequently barriers for those who are homeless in accessing many different forms of services, based on individual factors such as addictions and criminal involvement (Bramley et al., 2015). This limits access to mainstream services and could account for higher rates of those who are homeless attending Accident and Emergency compared to the general population (Hertzberg & Boobis, 2022). The exclusion from early intervention or preventative services is thought to influence the perceptions of those experiencing homelessness in what support they can access, leading to an avoidance of treatment for physical health. This was demonstrated by a study indicating a third of deaths among the homeless population were related to treatable healthcare needs (Aldridge et al., 2019).

Microsystems

Through exploring the macrosystems and exosystems, it is noted how homelessness is culturally viewed negatively, which impacts the way services and policies are structured. This in turn impacts how people experiencing homelessness and their support networks interact with these systems. When returning to Social Functionalism, the interactions between the culture/systems and becoming homeless would logically evoke shame, as at multiple levels there is exclusion from society (Shinn, 2010). This is also aligned with the reported experiences of the homeless community, who expressed the signifiers of being homeless (e.g. attending services for homeless people) and being identified as homeless, provoked shame (Farrugia, 2016). This was presented through narrative analysis of qualitative data gained from young

Australian people experiencing homelessness, although the exact method of analysis was not reported. Additionally, there is research indicating that becoming homeless is associated with a loss of identity (Boydell et al., 2000). This study highlighted how those who were newly homeless would describe themselves in relation to the negative cultural expectations of what it means to be homeless, e.g., "I'm not a violent homeless person, I am gentle". This indicated the struggle with losing their identity, alongside not wanting to connect to a new potential identity of being homeless. This paper noted that a common way of coping with identifying as homeless was to "other" from the homeless stereotypes. A survey into the experience of loneliness among the homeless community (Sanders & Brown, 2015) saw 61% state they were lonely, which was three times higher compared to those of the general population most at risk of loneliness (aged 52+). It was also noted that people report feeling undeserving of support due to general negative experiences of others, feelings of shame and the stigma around being homeless.

Individual Factors.

There are established individual risk factors related to becoming homeless, which include mental health and addiction (Bramley & Fitzpatrick, 2018). The homeless community sees higher rates of mental health diagnoses than the general public, with indications that this is increasing. A Homeless Link audit found diagnosis frequency moved from 45% in 2014 to 82% in 2021 (Hertzberg & Boobis, 2022). Comparatively, the general population rate of mental health diagnosis in the same period was 12% (NHS, 2022). The relationship between homelessness and mental health can be bi-directional with 75% of people surveyed in the audit having pre-existing mental health conditions, which were then exacerbated by the challenges of being homeless. Amongst this cohort, 25% of respondents reported having a clinical diagnosis of PTSD, and comorbidity was common with 81% expressing having at least two mental health conditions. The use of alcohol and drugs to self-medicate mental health difficulties was reported in 45% of respondents. Additionally, the homeless population has higher rates of exposure to trauma, both as an adult and through adverse childhood experiences (ACEs) (Liu et al., 2021).

As discussed, there is evidence to show the connection between the symptoms of MI and the experience of homelessness. However, there is a lack of evidence exploring the contributing factors. Within MI research, transitioning between social contexts has been seen to increase the risks of experiencing MI in military populations, as people adapt to shifting moral rules between military and civilian contexts (Farnsworth et al., 2014). The combination of people experiencing a transition across societal positions and the evoked feelings of shame related to this transition could be an indication of a PMIE. However, there is also evidence that the individual factors e.g., trauma histories, and systemic factors e.g., generational poverty, could also be a source of MI for this population. This study will aim to understand the prevalence rates of MI within a homeless population and consider what factors contribute to its development.

2.2.3 Aims

This study is aiming to address the following research questions:

1. What is the prevalence of moral injury within the homeless population?
2. Does the transition from identifying as non-homeless to homeless relate to moral injury?
3. Is moral injury influenced by individual or systemic factors related to the homeless experience?

From these research questions, the following hypotheses were established:

H1: There will be evidence of MI in the homeless population, separate from PTSD occurrences.

H2: There will be higher rates of MI in the homeless population compared to a control group.

H3: The transition into identifying as homeless will relate to experiencing MI.

H4: Risk factors for becoming homeless (history of addiction, adverse childhood experiences, discrimination, gender, generational poverty, criminal encounters) will predict moral injury.

2.3 Method

2.3.1 Design

The first element of the study was to compare the levels of MI within the homeless population group to a control group. The participants for the homeless group were recruited for this study and the control group was a general population sample, which was a data set collected as part of a separate research study at the University of Portsmouth.

The second element is to explore the relationships between factors of homelessness and MI. The factors associated with homelessness include a history of addiction, adverse childhood experiences, discrimination, gender, generational poverty, and criminal encounters. PTSD symptoms will also be measured to assess if MI is occurring independently as a concept and the degree of comorbidity.

2.3.2 Participants

Participants for the homeless group (*n*=113) were recruited through convenience sampling at charity services for the homeless in Hampshire, England. This included hostels, supported accommodation and day centres. Consideration was given to gaining a representative sample of those experiencing homelessness, resulting in multiple sites being approached. The use of hostels and day services was based on research indicating these sampling sites to be just as effective at gaining representative samples when compared to using a broader range of locations, such as inpatient services and on the street (Toro et al., 1999). Specialist services (women-only and LGBTQ+ services) were approached to improve diversity, but unfortunately were unable to offer recruitment.

G*Power was used to calculate the minimum sample size required for the homeless group. For a one-tailed between-group t-test, 88 participants were required in each group. To power a multiple regression with seven independent variables, 145 participants were needed for the homeless group. The latter calculation was completed using an estimate for a medium effect size, based on a study for MI within a health worker population, which used two multiple regressions with both reporting the same effect size through R^2 (Litam & Balkin, 2021).

Inclusion criteria for the study were to (a) currently be experiencing some form of homelessness, (b) to be 18 or above in age, and (c) to speak and understand English, to ensure participants can understand and accurately respond to questionnaires. Participants were excluded from the study if they had a moderate to severe cognitive impairment or were intoxicated at the time of completing questionnaires, as this would impact their ability to provide informed consent. These criteria were assessed by asking the participant about each element.

The control group data set consisted of UK adults recruited through Prolific in 2022. Due to the original study exploring rates of MI in police populations, this group has excluded people who work in the police. Additionally, the data was screened and removed incomplete data (n=4) or participants who answered in less than 200 seconds (n=6), as this indicated poor attention. This resulted in 408 participants.

2.3.3 Measures

The participants were asked to complete four questionnaires; three standardised measures and one designed with an expert by experience, to collect demographic information and a history of homelessness. Copies of these measures can be found in the appendices.

Moral Injury Events Scale-Civilian (MIES-C): This is a measure for establishing the presence of MI in the last six months through nine self-report questions, using a 7-point Likert scale (1= strongly disagree to 7 strongly agree). There are three subscales measuring the exposure to and impact of perceived transgressions by the self, transgressions by others and betrayal by others. It has been adapted from the Moral Injury Events Scale (MIES; Nash et al., 2013) which showed the scale as a whole to have excellent internal consistency (α= .90). Bryan et al., (2016) supported the formation of the three subscales through exploratory and confirmatory factor analyses, which reported a three factor solution using two military populations. This study reports good internal consistency for each of the subscales (transgressions from self, α=.79; transgressions from others, α=.94; betrayal, α=.83). Bryan et al, also reported significant positive Pearson's correlations between the subscales and other measures of psychological distress. They found that transgression from others strongly associated to a PTSD symptom measure, transgression from self were strongly associated with hopelessness, pessimism and anger intensity, whilst betrayal was associated with PTSD symptoms and anger. They concluded that these results supported the concept validity of the measure in demonstrating the associations between the subscales and trauma/distress measures. The adaptations used by Thomas et al. (2021) include changes to language, which increases applicability to outside the military context. The MIES-C has been validated against MIES, demonstrating construct validity in comparison to moral injury scales and well-being measures (Thomas et al., 2021).

Post-traumatic Stress Disorder Checklist for DSM-5 (PCL-5): This is a measure based on the diagnostic criteria for PTSD, measuring the self-reported intensity of symptoms for PTSD within the last month, on a Likert-scale (0= not at all, to 4= extremely). It was found to have excellent internal consistency (α= .95) and construct validity through comparison to the Impact of Events Scale (Ashbaugh et al., 2016).

Adverse Childhood Experiences (ACEs) questionnaire: This is a measure to quantify the number of adverse childhood events the participant has encountered before their 18th birthday. It consists of 10 questions requiring a ”Yes” or “No” response to adverse experiences. This measure was developed from research into the long-term impact of childhood trauma, which found a score of 4 or more on this measure relates to higher rates of mental health issues and drug abuse (Felitti et al., 1998). Five items relate to personal experiences of abuse and five items relate to the experience of others within the household. It has been shown to have good construct validity when compared to another trauma scale (Schmidt et al., 2020).

Homelessness questionnaire: This form was amended from a questionnaire used routinely in services to collect demographic details and experience of homelessness. This provided details for a history of addiction, gender, ethnicity, generational poverty, and criminal encounters. One additional question was added to the form for this study, asking the participant to indicate whether the responses on the MIES-C related to their experience of homelessness. It was designed collaboratively with an expert by experience to consider the phrasing and relevance of questions.

2.3.4 Procedure

The researcher pre-arranged dates and times of their visit with the staff at the recruitment sites so that risk assessments could be completed, and service users could be informed. Participation consisted of a one-off contact with the researcher, where they were provided with a participant information sheet (appendix M) and consent form (Appendix N) to take part in the study. They were then asked to complete the questionnaires and the researcher was able to support with any literacy needs. Participants were compensated for their time and expertise with a £5 shopping voucher.

As the topic of this study involved trauma, the design was led by a trauma-informed practice (UK Government, 2022). Safety was promoted through completing the questionnaires in services that are familiar to the participants and with staff support available. Trustworthiness and choice were demonstrated in the informed consent, whereby it was highlighted to all participants that some questions related to trauma, and they had a choice to participate as well as the right to withdraw at any time.

To monitor distress provoked by the questionnaires, a self-rating of distress from 0 (no distress) to 10 (extremely distressed) was asked before and after the questionnaires were completed. If distress increased, grounding techniques were provided and staff were informed with the permission of the participant. The debriefing form signposted participants to longer-term support if required.

2.3.5 Ethics

This project gained ethical approval from the University of Southampton's Ethics Committee through the Ergo system (Appendix L; reference: 80843). Additionally, at each site for recruitment, discussions were held with managers about the ethical considerations in the design of the study, and any queries were addressed before sampling commenced. Some organisations had internal ethical processes for research which were completed upon request.

The homeless population is associated with substance misuse (Advisory Council on the Misuse of Drugs, 2019), and therefore considerations should be made towards how this impacts informed consent. This is based on how intoxication can impair judgement and ability to understand/retain information (Aldridge & Charles, 2008), elements which are required for informed consent. However, excluding participants who use substances would impact representation, as it is estimated that a third of those homeless in the UK have problematic substance use (Pleace & Bretherton, 2017). This is a particular issue within trauma research, as substance use is a common maladaptive coping strategy for distress and trauma (Van den Brink, 2015). Therefore, excluding those with substance misuse would exclude a significant proportion of the homeless population and potentially the participants experiencing MI following traumatic experiences.

It is difficult to gauge a formal cut-off for consumption of substances impacting the ability to consent, as individual differences will occur depending on the history of consumption and factors relating to accumulated tolerance (Elvig et al., 2021). Additionally, requiring abstinence could risk withdrawal symptoms and increase distress. Participants in the homeless group were asked if they had consumed any substance before they signed a consent form or started the questionnaires. Discussions about the type, quantity of substance, and the time frame of consumption were used to support the researcher's judgement as to whether the participant was intoxicated. Intoxicated participants were assumed not to be able to consent. Recommendations were followed that observable signs of intoxication through behaviours and speech result in being screened out and that asking the participant to explain their understanding of the study (the process, benefits, and risks) demonstrated informed consent (Aldridge & Charles, 2008).

2.3.6 Planned Analysis

To understand the prevalence rates of MI within both the homeless and non-homeless groups, a rule for interpreting the MIES-C was followed. As there is no formal score to indicate the presence of MI on the MIES-C, MI was assumed to be indicated when there was a positive endorsement of an exposure and impact item on any of the subscales. This approach was used, as total scores could be skewed to underrepresent MI if only one form of MI (transgressions by the self, other or betrayal) was present. The frequency of cases of MI occurring without the presence of PTSD was determined through considering the scores on the PCL-5 for the endorsed MI cases. When scores were higher than 33, this was considered to be indicative of probable PTSD. Although the cut off across research for the PCL-5 can range from 31-33, this cut-off score is based on a study indicating the higher cut-off score on PCL-5 has a higher level of agreement through Kappa statistics to the DSM-5 criteria (Murphy et al, 2017).

When exploring PTSD within the homeless population, research more often uses symptom frequency/intensity measures rather than diagnostic measures, as indicated in a research systematic review by Ayano et al., (2020).

There were two stages of formal analysis for this study, with each stage having primary and secondary analyses. The first stage utilised one-tailed independent t-tests. One was performed to determine if there was a significant difference between the scores on the MIES-C scores between the homeless and non-homeless groups, addressing hypothesis 2. This was then expanded upon in a secondary analysis, to complete three separate t-tests on the subscales of the MIES-C scores between the two groups.

The second stage utilised a multiple linear regression, performed on the homeless group's data. This was to see if the dichotomous factors of addiction, gender, discrimination, poverty, criminal encounters, transition into homelessness, and the continuous factor of ACEs, predicted MI. This analysis addressed hypotheses 3 and 4 and was conducted on the total MIES-C score, before mediation analyses were used to explore PTSD symptoms' role within these relationships, addressing hypotheses 3 and 4. The secondary analysis explored the MIES-C's subscales' relationships to the variables through regressions. Although the transgressions from self-subscale would not be expected to return a significant relationship to discrimination due to the source of the actions being from other people, the analysis was retained to test this assumption.

Mediation analyses were chosen in this instance to help understand if the relating factors found in the regressions, were only producing a significant relationship due to a mediating effect of PTSD. This would aid the consideration of PTSD as a separate concept to MI, which would not be possible to infer from a moderation analysis. There are limitations to using this form of analysis within a cross-sectional design, as data is collected at a single time-point creating the assumption that these effects must occur instantaneously and are not impacted by time. This increases the potential for bias in effects found for both direct and indirect pathways as the stability of each variable over time cannot be accounted for (Cain et al., 2017). A longitudinal mediation would allow for the consideration of time as a variable, increasing the validity of effects found, however this is not feasible within the design of this study. As this is the first study exploring MI within the homeless population, it is useful to explore these mediation analyses whilst being mindful of the limitations in drawing conclusions, as this can still support direction for future research.

2.4 Results

2.4.1 T-test results

The samples for each group consisted of 408 participants for the non-homeless group and 113 participants for the homeless group. The demographics for both groups can be found in Table 7. Scores on the MIES-C indicate that 60% of the homeless group were showing symptoms of MI, compared to 43% within the control group. Before conducting the analysis, the data for both groups was explored for outliers and the distributions were checked. The graphs for these can be found in Appendix P, which showed similar distributions and no outliers.

Table 7

Demographics for the homeless and non-homeless groups.

Demographic Characteristics	Homeless group (n=113)	Non-homeless group (n=408)
Gender		
Non-binary (%)	0 (0)	6 (1)
Male (%)	86 (76)	125 (31)
Female (%)	27 (24)	276 (68)
Ethnicity		
Asian British (%)	0 (0)	1 (0.3)
Asian South(%)	3 (3)	5 (1)
Asian Other (%)	0 (0)	5 (1)
Black African (%)	1 (0.9)	2 (0.5)
Black British Caribbean (%)	0 (0)	5 (1)
Black Caribbean (%)	1 (0.9)	0 (0)
Black Other (%)	1 (0.9)	0 (0)
Latina (%)	0 (0)	1 (.3)
Middle Eastern (%)	0 (0)	1 (.3)
Mixed other (%)	0 (0)	2 (0.5)
Mixed White and Asian (%)	0 (0)	2 (0.5)
Mixed White and Black (%)	3 (3)	1 (0.8)
White British (%)	88 (78)	378 (93)
White Irish (%)	4 (3)	0 (0)
White Other (%)	12 (11)	3 (0.7)
Age, mean (SD)	43 (13)	40 (14)

Total MIES-C t-test

The Levene's test for equality of variance was significant (F=15.42, p=<.001) so equal variance between the groups was not assumed. The mean scores on the MIES-C for the homeless group (M= 37.98, SD=15.79) were significantly higher than the non-homeless group (M= 33.87, SD= 12.27), with *t*(151.41)= 2.56, p=0.006, and a mean difference of 4.12, 95% CI [.944, 7.285]. The effect size was small *d*= 0.31, 95% CI [0.11, 0.53], although a good power was found (.90) indicating there is a 90% probability that a type II error has not been made.

Exploratory t-test analyses were used to investigate the differences between the group's subscales for the MIES-C. These subscales were transgressions-others, transgressions-self, and betrayal.

Subscales t-tests

A summary of results for all t-tests can be found in Table 8. Bonferroni corrections were applied to all p-values due to multiple t-tests being performed on the same data set. All t-tests reported a significant Levene's test (transgressions-others, F=7.93, p=.005; transgressions-self, F=10.99, p=<.001; betrayal, F=14.93, p=<.001), indicating inequality of variance. When the subscales were analysed, initially transgressions-others was the only subscale not to show a significant difference between the two groups, *t*(157)= 1.32, p=.095.

The transgressions-self subscale initially showed significant differences *t*(157)= 2.20, p=.015 with the homeless group scoring higher (M= 15.05, SD= 8.00) than the non-homeless group (M= 13.25, SD= 6.63), however, the Bonferroni corrected p-value indicates this was not statistically significant (p=0.06). The subscale for betrayal had sustained a significant result from initial analysis *t*(152)= 2.84, p=.003, to the Bonferroni corrected p=0.048. Indicating confidence in the significantly higher average score within the homeless group (M=13.77, SD6.14) compared to the non-homeless group (M=12.00, SD=4.79).

Table 8

Independent T-test results for MIES-C totals and subscales between the homeless and non-homeless groups.

	Means (SD) for homeless group	**Means (SD) for non-homeless group**	**t**	**p**	**Mean difference (95% CI)**	**Cohen's d (95% CI)**	**Bonferroni correction p-value**
MIES-C total	37.89 (15.79)	33.87 (12.27)	2.56	.006*	4.12 (1.38, 6.85)	0.31 (.11, .52)	0.024*
Transgressions from others	9.16 (2.97)	8.62 (3.29)	1.32	.095	0.54 (-0.27, 1.34)	0.16 (-.05,.36)	0.38
Transgressions from self	15.05 (8.00)	13.25 (6.63)	2.20	.015*	1.81 (.18, 3.43)	0.26 (.05, .47)	0.06
Betrayal	13.77 (6.14)	12.00 (4.79)	2.84	.003*	1.77 (.54, 3.01)	0.35 (.14, .57)	0.048*

Note: *Significant result

2.4.2 Multiple Regression

Additional information about the homeless group was collected to understand their context, which can be found in Figures 3 and 4. The average length of time that people had been experiencing their current episode of homelessness was 22.7 months, with a mode of 12 months and a range between 1 to 240 months. On average participants had been homeless 3.5 times in their life with the mode of 2 and range 1 to 16. Instances were low for MI being present without clinically indicated PTSD symptoms, occurring for only 11 participants (9.7%).

Figure 3

Accommodation type for the homeless group.

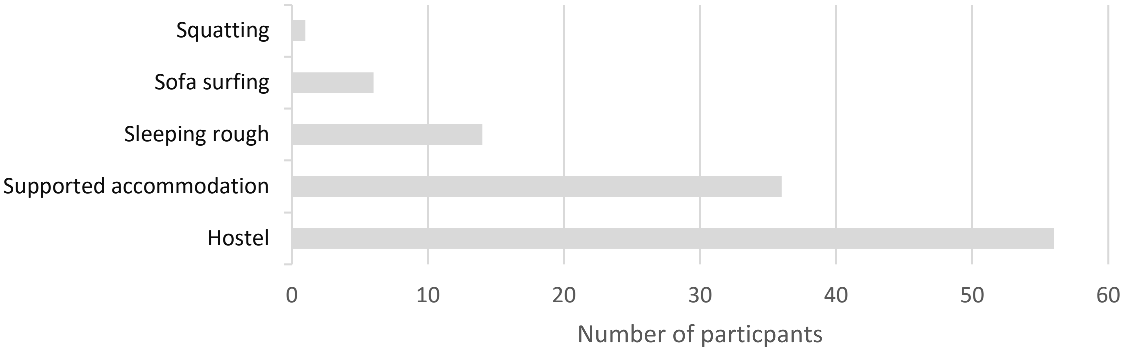
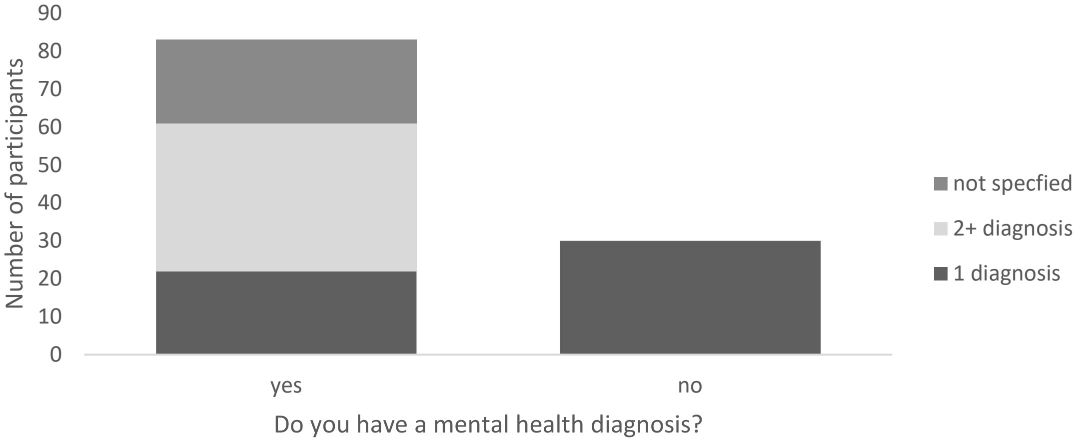


Figure 4

Participants in the homeless group with a mental health diagnosis



A forced entry multiple linear regression was performed on the homeless data, the results of which can be found in Table 9. This method of linear regression was chosen as the alternative, hierarchical regressions, require theory and past research to inform the levels at which variables are entered. As this is the first study exploring MI in the homeless population, it was felt there was not enough theoretical basis to prioritise certain variables over others, which was better suited to the assumptions of a linear regression model. The model presented was significant (R^2=.33, F(7,105)=7.38, p=<.001) and accounted for 28.5% of the variances. The Durbin-Watson test indicated that the residuals were not related, and scatterplots showed homoscedasticity was good across variables. This showed that higher scores on ACEs and experiencing discrimination were both significant predictors of MI with positive correlations between variables. Participants who noted the transition to homelessness as part of their experience of MI had a positive relationship to MI scores but was non-significant.

Table 9

Regression results for predictors of moral injury within a homeless population.

	B	*SE B*	Beta	t	p	r	sr^2	(95% CI)
Discrimination	8.92	2.82	.27	3.16	.002 *	.253	.064	3.33 - 14.51
ACEs	1.50	.48	.29	3.16	.002 *	.250	.063	.55 - 2.45
Gender	5.85	2.99	.16	1.96	.053	.156	.024	-.081 -11.77
Illegal activity	4.63	2.74	.15	1.69	.094	.135	.018	-.80 - 10.05
Transition to homelessness	3.57	2.56	.11	1.40	.166	.111	.012	-1.51 - 8.65
Family's class	1.90	1.77	.09	1.07	.286	.086	.007	-1.62 - 5.41
Dependency on substances	3.08	3.18	.09	.97	.336	.077	.005	-3.24 - 9.39

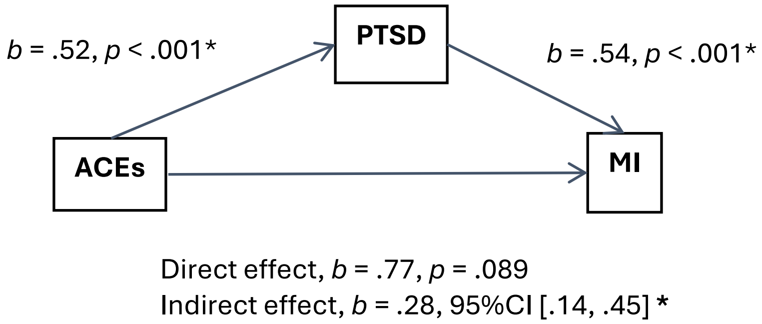
Note: *Indicates significant results

2.4.2.1 Mediation

The significant relationships were explored further through mediation analysis. PROCESS (version 4, Model 4; Hayes 2022) was used to see if PTSD symptoms mediated the effects of discrimination and/or ACEs scores on MI. A summary can be seen in Figures 5 and 6.

Figure 5

Path model of the relationships between ACEs, PTSD symptoms and MI. Path coefficients are unstandardised regression coefficients.

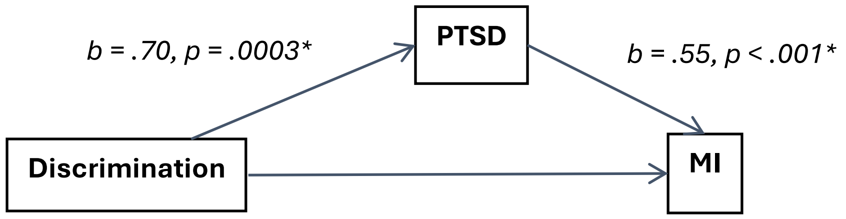


Note: PTSD, post-traumatic stress disorder symptoms; ACEs, adverse childhood events; MI, moral injury. * Indicates significant results.

The indirect effect was significant for ACEs predicting MI via PTSD symptoms (*b* = .28, CI .14, .45). This indicates that those who have experienced adverse childhood experiences are more likely to have PTSD symptoms, which predicts higher MI scores. This mediation also found the direct relationship between ACEs and MI to be insignificant (*b* = .77, p = .089), indicating the relationship found within the regression to be spurious and potentially existing due to the mediating factors of PTSD symptoms.

Figure 6

Path model of the relationships between Discrimination, PTSD symptoms and MI. Path coefficients are unstandardised regression coefficients.



Direct effect, b = .15, p = .015*
Indirect effect, b = .6.15, 95%CI [2.57, .10.54]*

Note: PTSD, post-traumatic stress disorder symptoms; ACEs, adverse childhood events; MI, moral injury. * Indicates significant results

Discrimination was shown to be a predictor of MI (b = .15, p = .015) and this relationship is also mediated by PTSD symptoms (b = .6.15, CI 2.57, .10.54). This indicating those within this sample who have experienced discrimination are more likely to experience PTSD symptoms, and then are more likely to experience higher MI scores. Among this cohort, 64% reported experiences of discrimination, with 44% of these cases being directly related to being homeless. Additionally, 43% of those who have experienced discrimination have seen this take multiple forms.

2.4.2.2 Subscale Multiple Regressions

The primary analyses have answered the research questions; however, secondary regressions were performed on the subscale measure to explore the data further and consider if there are differences in the type of MI on these factors. The models were significant (transgressions-others, R^2=.34, F(7,105)=7.54, p=<.001; transgressions-self, R^2=.21, F(7,105)=4.01, p=<.001; betrayal R^2=30, F(7,105)=6.27, p=<.001) and a summary of the data can be found in Appendix Q. This showed that discrimination was only a significant predictor of transgressions-others and betrayal and it was non-significant for the subscale transgressions-self. Additionally, the transition to becoming homeless became a significant predictor of transgressions-others, and engaging in illegal activity significantly predicted higher scores on transgressions-self.

2.4.3 Summary of Results in Relation to Hypotheses

H1: The null hypothesis can be rejected as cases of MI occurring outside of the presence of PTSD was found, although these were infrequent.

H2: The null hypothesis was rejected as significantly higher rates of MI were found in the homeless group compared to the non-homeless group.

H3: The null hypothesis is partially rejected. Transition to homelessness did not significantly predict total MI scores, however, it did predict higher scores on the transgression from others subscale.

H4: The null hypothesis was partially rejected, in that discrimination was found to be a predictor of MI scores, and ACEs predicted MI only when mediated by PTSD scores. All other variables did not significantly predict MI.

2.5 Discussion

This study aimed to explore the prevalence rates of MI within the homeless community. Findings showed that 60% of homeless participants presented with MI, which was significantly higher than the non-homeless group. Comorbidity of MI with PTSD symptoms was also high in the Homeless group, occurring in 90.3% of participants presenting with MI. This supports previous research into homeless populations which indicates high levels of trauma/PTSD experiences (Kim & Ford, 2006), whilst building on this knowledge to understand how frequently MI and PTSD symptoms can co-occur. Stein et al. (2012) highlighted how trauma experiences do not necessarily fit into defined boxes of either life threatening or morally injurious, as required for PTSD diagnosis and MI definition respectively. Therefore the high level of co-occurrence of PTSD symptoms and MI for this sample is not surprising, as their exposure to trauma is higher than the general population (Kim & Ford, 2006). The research around MI has built evidence which acknowledges the overlap with PTSD in symptomology, but also how they differ as constructs. This has been seen at a biological level through MRI studies of those with MI compared to PTSD symptoms, where the primary activation within the brain is in the Amygdala for PTSD and Precuneus for MI (Ramage et al., 2016). There are also key differences in impact and symptoms, as the primary emotional response of PTSD relates to fear, whilst MI is shame and guilt (Litz et al., 2009; Stein et al., 2012). Additionally, PTSD requires the presence of experiencing symptoms such as flashbacks or nightmares (APA, 2013), which is not a requirement of MI. So although they are infrequent, the 11 cases in which MI was present without clinically indicated PTSD symptoms (as indicated by below cut-off scores on PCL-5), helps to builds on the evidence of MI being a separate construct to PTSD. This then brings into consideration diagnostic overshadowing, which for this population could be in the form of complex PTSD (cPTSD; World Health Organisation, 2023). cPTSD includes the symptoms outlined in PTSD, in addition to features which also overlap with MI (e.g., difficulties with relationships, trusting others, experience of shame). Within the homeless population, the rates of cPTSD are higher than PTSD diagnosis (Armstrong et al., 2020). Thus, the presence of MI symptoms for this population may have been noted previously, but until now has been framed as part of cPTSD. The potential for diagnostic overshadowing of MI could also present within the research community. For example, Dolezal and Gibson (2022) provide a detailed account of the different presentations of shame within trauma experiences, and they are champions for the increased awareness of shame within trauma work, yet MI is not specifically included as a concept within their paper. Potentially this lack of consideration for MI comes from it being a newer concept within trauma research or maybe it is due to MI's associations to military populations. Regardless, this study shows that the experiences of MI can occur outside the well-established military and occupational contexts. Considering where and how shame presents within trauma experiences could provide indication of where MI may occur , but potentially have been absorbed into other frameworks or concepts.

The transition into homelessness did not predict MI generally, but it did predict scores on the transgressions of others subscales. This indicates that the transition into being identified as homeless was a predictor for MI relating to the transgressions of others, rather than acts relating to transgressions of self or acts of betrayal. It is not possible to determine from this study if the transition to being identified as homeless creates opportunities to witness more PMIEs or if the acts of other towards the individual are PMIEs. The latter hypothesis would fit within EST’s framing of the experience of homelessness, where the negative perceptions towards homelessness, held at a cultural and political level, would affect and lead to negative interactions with the people and systems around the homeless individual. The change in social position, such as transitioning to being identified as homeless, would mean the systems around the individual would alter to become more negative in their interactions and more likely to produce an MI. This negative change in the interactions with others, can be shown at the microsystems level through a study which demonstrates how the stigma of being homeless is a factor in the breakdown of personal relationships and subsequent social isolation (Rea, 2023). Although these relationship trends are gender specific, with women being more likely to maintain their social support whilst experiencing homelessness (Bretherton, 2017), it remains applicable to this study due to a predominately male group. At a macrosystems and exosystems level, a systematic review highlighted how those experiencing homelessness can experience disrespect and discrimination, from sources of formal support and organisations that are not structured to meet their needs (Omerov et al., 2020). There is a similar relationship reported when considering identity and shame within trauma. Dolezal and Gibson (2022) support this relationship with their review of the literature, indicating identity labels (e.g., homeless) resulting from trauma to be a source of shame. Although this does not provide a direct link to MI it does provide connections between a key MI symptom and transition of identity.

The exploration of how individual and systemic factors related to homelessness and predicted MI, provided a deeper understanding of MI within this population. Firstly, the role of ACEs will be considered. The results of the regression showed adverse events experienced in childhood predicted higher scores on the MI measures, which was consistent across total scores and all subscales. However, when this relationship was considered through the mediation of PTSD symptoms, the initial relationship became non-significant. This indicated that ACEs does not appear to be a true predictor of MI when PTSD symptoms are considered in the pathway between variables. When seeing this result individually, it may be read as demonstrating PTSD and MI are conceptually the same, however, to draw this conclusion would be omitting the wider findings across moral injury research and the results of the discrimination mediation, which showed MI to have its own associated pathway outside of PTSD symptoms. This ACEs mediation instead can indicate that ACEs alone does not have a strong enough association to MI. This in itself, indicates a potential conceptual difference between MI and PTSD, as ACEs have been found to predict PTSD and cPTSD symptoms compared to non-traumatic but more recent stressors (Frewen et al., 2019). There have been established connections between ACEs and the homeless community, where higher rates are seen compared to the general population (Koh & Montgomery, 2021). However, this remains correlational in nature and ACEs scores are associated with multiple mental and physical health issues (Dube et al., 2001). The lack of direct relationship between ACEs and MI could be understood from the formation of moral rules. To experience MI, one must have established moral rules which are subsequently broken (Litz et al., 2009). Although morality is seen to first start developing in infancy through moral behaviours, the understanding of moral rules does not develop until later in childhood and into adolescence (Jensen, 2020). Morality is influenced by the relationships, cultures and systems around the child (Miller & Källberg-Shroff, 2020), and therefore being raised in adverse childhood experiences could understandably influence the development of moral rules. Although there is not direct research exploring this area, Schema development theory would support this potential process, with the basic assumption that if there are fewer moral memory objects to be processed as a child develops, then there is less opportunity for moral schemas to be activated later in life. Within this theory, the changes and development of schemas are most noticeable during adolescence (Rest et al., 1999). At a more complex level, to make moral judgments, schemas are required for knowledge, reasoning and processing (Narvaez & Bock, 2002). It could be argued that from the perspective of schema development theory, adverse experiences within childhood could provide either missed opportunities or distorted perspectives of these elements. For example, a child witnessing or receiving physical abuse may develop schemas that aggression is an acceptable form of punishment, therefore experiences related to aggression may not break moral rules as an adult. The finding that ACEs does not significantly relate to MI is inconsistent with other research (Fani et al., 2021; Beckwith, 2023), however these studies are also cross sectional by design and causality cannot be assumed. Further research would benefit the understanding of the relationship between MI and ACEs, to see if this lack of significant relationship is limited to just this homeless sample.

The other significant predictor of MI was experiences of discrimination which most often related to being homeless. When this was broken down further, discrimination only related to transgression by others and betrayal, which makes conceptual sense, as to be discriminated against comes from others/systems to the self. The same pattern was found in a military population where discrimination for gender wasrelated to betrayal and transgressions by others only (Maguen et al., 2020). For the homeless population, there are individual factors which have the potential to be a source of discrimination (e.g., ethnicity, gender). However, the socioeconomic position of being homeless in itself is also a source of discrimination (Skosireva et al., 2014). This was evident within this study with 43% of those who had experienced discrimination, encountered it in multiple forms, although being homeless was the most common. Although gender was a non-significant variable, it was just below being a significant predictor for the positive relationship between being female and MI, which could relate to this idea of discrimination. For example, it is shown how UK homeless services for women often relate to specific needs such as family support or domestic violence (Bretherton, 2017), which can be exclusionary for lone women with differing routes to homelessness. A factor in this non-significant result could lie in the sample being 76% male, and perhaps if there was more female representation within the homeless group, this may have become a significant result. However, this is a broader challenge within homeless research, as those most likely to access services in the UK, where recruitment often takes place, are white British men (Office for National Statistics, 2023). Therefore, the “hidden homeless”, which is inclusive of women and those from minority backgrounds, are very often underrepresented in homeless research. Any future exploration of this relationship between gender and MI in research would benefit from gaining a balance between the genders, so that there is equal representation.This would help to understand the experience of homelessness and particularly how aspects such as ethnicity and gender might change that experience.

The final positive predictor was experience in illegal activity predicting MI in the form of self-transgressions only. This indicates that partaking in illegal activity breaks one’s own moral rules. There is no research into experiences of partaking in criminality and MI currently, however, for the homeless community, illegal activity can be part of survival when access to resources is limited (McCarthy & Hagan, 1992). The scope of this study has limited information around the type, frequency or recency of illegal activity and would be an interesting topic to explore further in future research.

The design of this study has allowed for a broad consideration of the experience of MI within homelessness. However, results are interpreted on a correlational basis so the causation of these relationships cannot be confirmed. However, the sample sizes collected have provided sufficiently powered effects and significant results, which can guide how to continue to explore MI within this population.

2.5.1 Limitations

A Limitation of the design of the study include the use of MIES-C in assessing MI. There are broader issues within MI research around conflating exposure to PMIEs and symptoms of MI. Although the MIES-C does not solely measure exposure and makes considerations for impact of events, it is limited in its assessment of symptoms of MI, as indicated by Houle et al. (2024) in their systematic review, where MIES was only rated as adequate for structural validity. Using the MIES-C was beneficial for this study as it allowed direct comparison to the control group's data who had used the same measures. However, in hindsight it would have been useful to have also administered another MI measure, either one that measured symptomology (e.g. Moral Injury Outcome Scale, Litz et al., 2022) or a measure which links PMIEs to MI symptoms (e.g. Moral Injury and Distress Scale Norman et al., 2023). This would have improved the concept validity of this study, and provided increased certainty that MI has been measured accurately. It would be a recommendation for future research of MI across any population to consider how MI is being measured, so that events and symptoms are both accounted for.

Additionally, there could be limitations within the representation of the homeless participants. The associated emotional responses of shame and guilt within MI could prevent participants from engaging with the study. This is due to the subsequent common behavioural response, of avoiding triggers to the emotions (Van Vliet, 2010), which the process of the study may evoke. Furthermore, this study was only accessible in person through interaction with the researcher which removes anonymity. The researcher was also presented to participants as a Trainee Clinical Psychologist from a university which produces a power dynamic, as can be seen in research healthcare interactions (Dolezal & Lyons, 2017). These factors can compound the experience of shame (Dolezal & Lyons, 2017). This may mean that people who were experiencing MI were not able to engage in the process and therefore the prevalence of MI may be underestimated.

This study could have been improved by gaining the occupational backgrounds of the participants. As most research into MI has been within a military context or emergency services, it would have been helpful to see how many within the homeless sample had these occupational backgrounds. This would have allowed for consideration of what percentage of MI within the homeless community stems from these established MI populations. A reason for this consideration is due to the sampling being within Hampshire, where there are many military bases and therefore a higher population of military personnel/veterans (Office for National Statistics, 2022). Initially, the data collection was intended to be across Hampshire and Greater London to gain a breadth of experiences. However, due to response rates from services, sampling became localised to Hampshire. This could be seen as a benefit for clinical application to those in Hampshire services, as the representation is closely matched, but a challenge for generalisability to the wider homeless population.

2.5.2 Future Directions

As homelessness has a broad demographic profile it would be useful to explore if these found effects are sustained across diversity of gender, culture, ethnicity, and geography. The recruitment for this study was localised to Hampshire, which consists of smaller towns in addition to the city of Southampton. The socioeconomics of Hampshire will differ from that of larger cities such as London and therefore the homeless experience may be different. Although attempts were made to access specific services such as women support and LGBTQ+, it was not possible to recruit from these services. It would also be useful to explore the themes found in this study of ACEs, discrimination, and transition to homelessness through a qualitative approach to gain richer data about these experiences.

This study took a cross-sectional approach in its design, which is appropriate for preliminary exploration of topics (Wang & Cheng, 2020). However future research would benefit from exploring MI from a longitudinal approach as this could provide evidence for the direction of these relationships. The people sampled for this study had varied experiences of homelessness, from their housing situation (e.g., sleeping on the street, supported accommodation) to time spent homeless (ranging from 1 to 240 months). It would be interesting to see if these experiences of MI change over time, as this would help to understand if MI occurs before or after becoming homeless.

2.5.3 Clinical Applications

The results of this study show that within the homeless community, there is a high prevalence of MI which often co-occurs with PTSD symptoms. This brings into question whether clinically MI has been absorbed into the PTSD diagnosis and therefore potentially overlooked. This is important to consider as access to trauma services in the NHS use the diagnostic criteria to aid judgements around suitability and acceptance to services for treatment. For those who do experience PTSD alongside MI, they will be able to access service and treatment. However, for those who have MI without PTSD symptoms, there is the potential for them to fall between the gaps of services. Until recently, PTSD was classified as an anxiety disorder and continues to share a range of symptoms and neurological pathways with anxiety (J. B. Williamson et al., 2021). The approaches to treating PTSD, as recommended by NICE guidelines (National Institute for Health and Care Excellence, 2018), are trauma-focused (CBT), cognitive processing therapy, narrative exposure therapy, and eye movement desensitisation and reprocessing (EMDR). With the exception of EMDR, all treatments are based on the role of the fear response in PTSD and utilise exposure in aiding processing (Ehlers & Clark, 2000; Elbert et al., 2022; Gallagher & Resick, 2012). MI is related to different emotional responses of shame and guilt, which hold a different biopsychosocial function to fear, therefore treatments based on the mechanisms of fear may not be appropriate. There is a lack of research on the approaches to treat MI, however there is a base of understanding that holds importance for approaches that utilise acceptance and compassion (V. Williamson et al., 2021). This is supported by other trauma work which identifies working with shame, such as the use of compassion-focused therapy (CFT) in cPTSD work (Irons & Lad, 2017). There is also evidence of CFT application in working directly with shame and negative self-concepts whilst the PTSD symptoms do not appear to change (Karatzias et al., 2019). This indicates alternative approaches are used when considering the cross-over of shame and trauma in different contexts, which could hold similar value towards MI treatments. To understand MI as its own construct will aid support and treatment. For those who experience MI concurrently with PTSD symptoms, it would aid consideration of how to adapt/include MI approaches into treatment. For those who are experiencing MI without PTSD, it would aid the acknowledgement and direction to support of MI, as there is currently no direct pathway for support/treatment outside of veteran's services.

For those working within homeless services, being supported to understand the frequency and impact of MI would aid the service and in turn support their clients. This could be through support of self-reflection, to consider the cultural and systemic bias around homelessness and how they inform the way services work, or offering training around compassionate approaches. Additionally, the integration of a framework such as shame-sensitivity (Dolezal & Gibson, 2022) into their established trauma-informed practices could benefit these services. This uses three principles to build staff's skills in acknowledging shame, addressing shame, and avoiding shaming. Within each principle, they consider how this is achieved at an individual level and systems level to consider how the service is working for its clients.

2.6 Conclusion

The findings of this study have indicated that there is evidence for a higher prevalence of moral injury within a homeless population compared to a general population. Factors found to associate to MI for the homeless community include discrimination, transitioning to homelessness, and partaking in criminal activity. The results around ACEs' relationship to MI appeared less straightforward, but indicated there is not a significant relationship when PTSD is considered within these pathways. There are limitations in the design of this study which should be held in mind alongside the conclusions drawn. These include the cross-sectional design which means causality cannot be inferred, the use of MIES-C which is less structurally valid compared to alternative measures, and the specific location of the sample within Hampshire affecting generalisability of the findings. This study does provide considerations for how MI is considered as a construct within trauma, and how it is not currently held in mind for clinical practice outside of well-established occupational demographics. However further research into wider populations such as the homeless community will aid the theoretical understanding of MI.

3. References

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Appendix A - PRISMA Checklist

PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	1-6
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	6
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	6-7
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	7 & 8
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	apendix
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	9 &10
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	9 &10
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	9
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	9
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	9&10
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	17 &18
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	10
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	10
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	10
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	10
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	n/a
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	12
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	12-14
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	11
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	11
Study characteristics	17	Cite each included study and present its characteristics.	16-17
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	14-15
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	16-17
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	19-22
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	18
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	19-22
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	na
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	19-22
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	19-22
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	22-23
	23b	Discuss any limitations of the evidence included in the review.	22-23
	23c	Discuss any limitations of the review processes used.	22-23
	23d	Discuss implications of the results for practice, policy, and future research.	22-23
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	6
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	6
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	10
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	na
Competing interests	26	Declare any competing interests of review authors.	na
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	na

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: http://www.prisma-statement.org/

Appendix B - Full Search Strategy

Searches for Psych info database

Search terms across abstracts:

1. "Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”
2. “Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organi?ation* support"

Search terms across subjects:

3. “Social Networks” or “Support groups”

Search terms across Major subjects:

4. MM "Interpersonal Relationships" OR MM "Caregivers" OR MM "Close Relationships" OR MM "Couples" OR MM "Family Relations" OR MM "Friendship" OR MM "Kinship" OR MM "Marital Relations" OR MM "Mentor" OR MM "Partners" OR MM "Peers" OR MM "Relationship Quality" OR MM "Relationship Termination" OR MM "Role Models" OR MM "Significant Others" OR MM "Social Support" OR MM "Perceived Social Support"

Search terms across all text:

5. ("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) N5 (question* or scale or measure)

Combine searches:

- 2 and 3 and 4 =search 6
- 1 and 5 and 6 = result

Limitation- date range 1994 -2024

Searches for MEDLINE and CINAHL Plus with Full Text

Search terms across abstracts:

1. "Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”
2. “Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organi?ation* support"

Search terms across exact subject heading (MH):

3. (MH "Social Isolation") or (MH "Social Support+") or (MH "Interpersonal Relations+") or (MH "Social Environment+")

Search terms across all text:

4. ("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) N5 (question* or scale or measure)

Combine searches:

- 2 and 3 and 4 =search 5
- 1 and 5 = result

Limitation- date range 1994 -2024

Searches for Web of science

Search terms

Topic search

1. "Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”
2. “Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connect*” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relation*” or Mentor* or “Social functioning” or “Social withdrawal” or “Peer relation*” or lonel* or “community support” or "organisation* support"
3. **ALL=(Morally Injurious Events Scale or Moral Injury Events Scale or Expressions of Moral Injury or Scale Moral Injury Scale for Youth or Moral Injury Symptom Scale or Moral Injury Questionnaire or Moral Injury Appraisals Scale or Moral distress scale)**

Combined searches 1-3 using AND

Limitation- date range 1994 -2024

Searches for Cochrane Library

Search title abstract and keywords

"Moral injury" or "Morally injurious" or "Moral distress" or "Moral emotions" or “ethical distress”

AND

“Social support” or Friendship or “Social inclusion” or “Social Exclusion” or “Social isolation” or “Support groups” or “Emotional support” or “Social connection” or “Social interaction” or “Social resources” or “Interpersonal relationships” or “Social capital” or “Social cohesion” or “Group cohesion” or “Family relationships” or Mentor or “Social functioning” or “Social withdrawal” or “Peer relationship” or loneliness or “community support” or "organizational support"

AND

(("moral injury" or "moral distress" or "morally injurious" or guilt or shame or betrayal) Next (questionnaire or scale or measure))

No limitations applied

Appendix C - Screening Tool

Screening tool and selection tool

Reviewer name:

Date:

author name/study id:

Title:

Year of study :

	Included	Excluded
Patient population	○ Adults, people above the ages of 18 years ○ People experiencing moral injury	○ People under the age of 18 years ○ People experiences PTSD but no moral injury ○ People experiencing moral distress not moral injury
Interventions	○ Questionnaires	○ Structured or Unstructured interviews only ○ Incomplete studies
comparators	○ Measures of moral injury and social contact ○ Analysis of interaction between the two	○ Measures of PTSD only ○ Measures of Moral injury only ○ Measures of social contact only ○ No analysis between moral injury and social contact
Outcomes	○ Health and social support outcomes included (objective or subjective)	○ Structured interview only
Study design	○ Quantitative or mixed methods	○ Qualitative only
Overall decision	○ Included	○ Excluded

Notes

Appendix D - Data Extraction Table Social Support Group

Study number, author (publication year)	Peer review status	Study design	n (drop-out)	Inclusion/ exclusion criteria	Studies aims	analysis
1 Chesnut et al. (2020)	Peer reviewed	Case series	6480 (3086)	Inclusion of veterans who had separated from active component service or deactivated from activated status or separated from the National Guard/ Reserve within the prior 90 days and had a valid United States mailing address.	To explore if veterans experience of moral injury predicts social wellbeing	Parallel growth curve modelling
2 Feingold et al. (2019)	Peer reviewed	Cross-sectional	191	Inclusion: age 20+, served in combat troops and were released from military service within the previous 10 years. Exclusion: age under 18, army service in non-combat units, and release from army service more than 10 years ago.	Explore the association between MI and substance use, considering distress and social support as mediating factors.	Pearson correlation, structural equation modelling and the ML method
3 Feinstein et al. (2018)	Peer reviewed	Cross-sectional	80	Inclusion: All journalists had directly witnessed the plight of the refugees by covering the news out in the field on assignment and not from behind a desk in the newsroom.	To explore the emotional health of journalists covering the migrations of refugees across Europe.	T-tests, Pearson r and Spearman's Rank
4 Harper et al. (2020)	Peer reviewed	Cross-sectional	109	Inclusion: veterans, reported a score scoring on the Religious and Spiritual Struggles Scale. Exclusion: suicidal intent or plan, psychosis or mania, and scores below 20 on a cognitive functioning screener.	to examine the role that different sources of social support play in the relation between PMIEs and PTSD symptom severity.	Bivariate correlations, Step-wise regression
5 Hines et al. (2021)	Peer reviewed	Case series	96	Recruited through critical care distribution lists	To explore Moral Injury, Distress, and Resilience Factors among Healthcare Workers at the Beginning of the COVID-19 Pandemic.	hierarchical multiple regression
6 Kelley et al. (2019)	Peer reviewed	Cross-sectional design	189	Military veterans who were members of the Combat Wounded Coalition experiencing one or more deployments (defined as 90 days or more).	To examine possible moderators of the association between self- and other-directed moral injury and suicidality in a sample of combat-wounded veterans. Moderators include compassion and social connection.	Moderation models
7 Koster (2020)	No, dissertation	Cross-sectional	203	Inclusion: current or former US military service members of at least 1 year outside of basic and operational specialty/rate training; involvement in at least one warzone environment; exposure to, witnessing, or experiencing some form of traumatic experience, morally questionable activities, or ethically ambiguous situations during an operation, mission, or deployment.	Explore if exposure to potentially morally injurious events (pMIEs) due to exposure to combat increases moral injury symptoms and if instrumental and emotional support moderate the relationship.	regression and moderation
8 Levi-Belz et al. (2022)	Peer reviewed	Cross-sectional	191	Included: Israel Defence Forces combat veterans, age 20+, and have been discharged from mandatory military service in combat units in the previous 10 years.	To explore MI and suicidal ideation, considering the roles of forgiveness and social support	MANCOVA, Pearson correlation

Study	Location (timepoint)	Target Population	Age	Gender	Ethnicity	occupation	Moral Injury Measures	Social support measure
1	USA (not specified)	Veterans	not reported	81.8% Male 18.2% Female	White, 64.7 % African American or Black, 10.7% Any race, Hispanic 13.7% Asian, Pacific Islander, Hawaiian, 4.4% Mixed race, 4.7% One race (other), 1.3%	Not currently serving in the military 73 %	Moral Injury Events Scale (MIES)	item modified Medical Outcomes Study Social Support Survey (mMOS-SS)
2	Israel (not specified)	Veterans	M= 25.39 (SD=2.37)	85.4% Male 14.6% Female	Participants categorised by place of birth. Israel 88.9% Former Soviet Republics5.3% Asia/Africa 0.6% Europe and America 5.4%	Full-time job (27.5%) Part-time job (56.7%) Not working (14.6%)	Moral Injury Event Scale (MIES)	Multidimensional Scale of Perceived Social Support (MSPSS).
3	America and Europe (not specified)	Journalist	M= 42.95 (SD = 8.44)	58.8% Male 41.2% Female	Not reported	Journalists (100%)	Moral Injury Events Scale (MIES-R).	Questionnaire created for the study exploring work environment.
4	USA (not specified)	Veterans	M=50.19 (SD=11.89)	90.8% Male 9.2% Female	African American or Black 61.7% White 26.2% Hispanic 10.3% Other 1.9%	Unemployed 70.4% Employed part time 13.0% Employed full time 16.7%	Moral Injury Event Scale (MIES)	Multidimensional Scale of Perceived Social Support (MSPSS).
5	USA (march to July 2020)	Healthcare workers	M=40 (SD=10.4)	49% Male 51% Female	Not reported	Attending physician 62.5% Fellow physician 14.6% Resident physician 12.5% Other 10.3%	Moral Injury Events Scale (MIES).	Questionnaire created for the study based on domains of resilience and workplace support.
6	USA (not specified)	Veterans	M= 43.14 (SD = 12.23)	96.8% Male 3.2% Female	74.1% White	Not reported	Expression of Moral Injury Scale–Military Version	Friendship Scale
7	USA (January and March 2018)	Military and veterans	M=40.9, (SD=12.8)	60.6% Male 38.4% Female 0.5% Female Transgender 0.5% Male Transgender	White 64% African American 3.9% Black 6.9% Latino/a 6.4% Asian 4.4% Asian American 1.5% Middle Eastern .5% Native American 4.9% Native Hawaiian 1.0% Native Alaskan .5% Biracial 3.4% Multiracial 1.5% Other 1.0%	Not reported	Moral Injury Questionnaire-Military Version (MIQ-M) and The Expressions of Moral Injury Scale-Military Version	Adult Toolbox Social Relationship Scales-Social Support (NIH_SS)
8	Israel (not specified)	Veterans	M= 25.4 (SD= 2.15)	88% Males 12% Female	Participants categorised by place of birth. Israel 89% Former Soviet Republics 5.2% Asia/Africa 0.6% Europe and America 5.2%	Full-time job 27.5% Part-time job 56.7% Not working 14.6%	Moral Injury Event Scale (MIES).	Multidimensional Scale of Perceived Social Support (MSPSS).

Study	descriptives statistics of variables M, (SD)	Significant results	Length of follow up	Study sponsorship
1	MI Self 1.72, (1.22) MI Other 2.30, (1.38) Social support 2.84, (1.03) Social activity 2.98, (1.80) Social functioning 3.00, (.76) Social satisfaction 2.92, (.79)	• Higher self-directed and other-directed MI scores related to lower social functioning and social activity. Higher other-directed MI scores also related to lower levels of social support and social satisfaction. • Higher self-directed MI scores associated to a steeper decline in social activity, and Higher other directed MI scores were associated to a steeper decline in social functioning and social satisfaction.	Every 6 months over a 30-month period.	This research was managed by the Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., (HJF) and collaboratively sponsored by the Bob Woodruff Foundation; Health Net Federal Services; The Heinz Endowments; HJF; Lockheed Martin Corporation; May and Stanley Smith Charitable Trust; National Endowment for the Humanities; Northrop Grumman; Philip and Marge Odeen; Prudential; Robert R. McCormick Foundation; Rumsfeld Foundation; Schultz Family Foundation;Walmart Foundation; WoundedWarrior Project, Inc.; and the Veterans Health Administration Health Services Research and Development Service.
2	MI Self 4.84, (2.77) MI Other 6.73, (4.18) Betrayal 6.47, (3.63) Perceived social support 5.74, (1.32)	Social support had a negative relationship to MI.	None	Not specified
3	MI total score 17.0 5.58	• Participants working alone were more likely to have acted against their moral code. • Lack of organisational support was associated to perceiving events where are morally wrong.	None	International News safety Institute (INSI)
4	MI-Self 14.49, (7.13) MI-Others 8.66, (3.37) Betrayal 10.86, (5.19) MSPSS Significant Other 4.63, (1.99) Family 4.14, (2.04) Friends 4.23, (1.84)	• When betrayal was at low to moderate levels, social support from significant others or family was a protective factor to PTSD symptoms. However, this effect was not significant at high levels. • In examination of moderation neither Betrayal or the interaction of Betrayal and Friends significantly predicted PTSD symptoms.	None	Supported by grant funding from the John Templeton Foundation.
5	MI total 14.51(SD=7.22), Social support 4.06 (SD=0.90 Work support 3.93 (SD=0.90)	• A nearly significant result showing an inverse association between MI and supportive working environment.	1 month and 3 months	No external funding. However, one of the author's institution received research funding from the AASM Foundation, Department of Defense, Merck, and ResMed. This author has also served as a scientific consultant to DayZz, Eisai, Merck, and Purdue, and is an equity shareholder in WellTap.
6	Not reported	• Both self-directed and other-directed MI were moderately negatively associated with social connectedness. Social connectedness had significant buffering effect in moderating the relationship between other-directed moral injury and suicidality.	None	Research supported by grants from the American Psychological Association and from the National Institute on Alcohol Abuse and Alcoholism.
7	Not reported	• Emotional support and social support did not moderate the significant relationship between PMIEs and MI	None	Not specified
8	No Suicidal ideation: MI-Self 6.16, (3.7), MI-Others 8.52 (4.84), Betrayal 10.75, (5.37), MSPSS 5.94, (1.12) Suicidal ideation: MI-Self 4.52 (2.6), MI-Others 6.16 (2.82), Betrayal 6 (3.55), MSPSS 5.05, (1.62)	• PMIE with perceived social support were significantly predictive of current Suicidal ideation. • There was a significant positive correlation between from PMIE to suicidal ideation when perceived social support was a moderator when low. • at high levels of perceived social support, PMIE was unrelated to current suicidal ideation. • There was a positive and significant correlation between subscale PMIE-Others and perceived social support at moderate levels of perceived social support.	none	No financial support received.

Appendix E - Data Extraction Table Disconnection Group

Study number, author (publication year)	Peer review status	Study design	n (drop-out)	Inclusion/ exclusion criteria	Studies aims	analysis	Location (timepoint)	Target Population	Age
9 Benatov et al. (2022)	blind peer reviewed	Cross-sectional design	296	Recruited by emailing health and social workers at Israeli hospitals	To explore moderating role of belongingness among Moral injury, depression, and anxiety symptoms	hierarchical multiple regressions and simple slopes	Israel (February and March 2021)	Health and social care workers	M=40
10 Biscoe et al. (2023)	Peer reviewed	Cross-sectional design	428	opting in for participation. Following attending veterans service, to gain consent to provide email address.	To explore separately the associations between both PMIE exposure and moral injury with a range of mental health and functioning outcomes to further understand the distinction between PMIE exposure and the subsequent development of moral injury.	Independent t-tests, Linear regression	UK (not specified)	Veterans	M = 50.4 (SD =0.9)
11 Hagerty and Williams (2022)	Peer reviewed	Cross-sectional design	1,122	18+ and self-identifying as a “health-care worker”	To study threats to core human needs among health-care workers during the pandemic, including the relationship between experiencing these threats and experiencing symptoms of traumatic stress and suicidality.	bivariate linear regression models	USA (May and August 2020.)	Health care workers	M=39.29
12 Houtsma et al. (2017)	Peer reviewed	Cross-sectional design	937	U.S. military personnel who presented for participation at a large Joint Forces Training Centre in the southern United States. No other exclusionary criteria used.	To understand the relationship between MI, social support and thwarted belonging.	hierarchical multiple regressions and simple slopes analyses	USA (not specified	Military personnel	M=28.67 (SD =8.19)
13 Ray et al. (2021)	Peer reviewed	Cross-sectional design	147	United States resident, with a Human Intelligence Task approval rating of at least 95%. 18+ years old, fluent in English and must have endorsed at least one prior traumatic experience	Exploring the roles of interpersonal needs and emotion dysregulation among MI and depression symptoms	Bivariate associations, Pearson correlations and conditional process analysis	USA (not specified)	General population with trauma experience	M=35.92 (SD =11.72)

Study	Ethnicity	occupation	Moral Injury Measures	Social support measure	descriptives statistics of variables M, (SD)	Significant results	Length of follow up	Study sponsorship
9	77% Israeli 16% European 5% America, 1% Asian/ African	Medical doctor 34.1% Nurse (including midwives) 44.4% Social and psychological care 17.4% Clinical support 5.9%	Moral Injury Symptom Scale – Health Professional questionnaire (MISS-HP) and Moral Injury Event Scale (MIES)	Interpersonal Needs Questionnaire (INQ)	Not reported	• MI symptoms weakly positively correlated with thwarted belongingness. Thwarted belonging mediated the relationship between PMIEs and MI symptoms	none	No financial support received
10	94.7% White 5.3% Ethnic minority	working or retired 55.7% not working 44.3%	Moral Injury Outcome Scale (MIOS)	UCLA Loneliness Scale	MI 34.02 (SD = 10.20) UCLA-3 PMIE exposure7.2 (1.8) No PMIE 6.8 (2.1)	• Those who experienced a PMIE had on average a worse loneliness outcome. loneliness significantly predicted higher moral injury	none	None reported
11	Not reported	60.4% nurse, 5% physician, 1.7% physician assistant, 3.6% respiratory therapist, and 28% other health-care roles	Moral Injury Events Scale (MIES)	DeJong Gierveld Loneliness Scale (DJGLS)	Not reported	greater loneliness was associated with greater symptoms of moral injury	None	Not reported
12	66.7% White, 20.2% African American 6.4% Hispanic/ Latino 1.8% Asian/ Pacific Islander 1.3% Native American 3.6% Other	25.8% unemployed, 12.5% employed part-time, 61.6% employed full-time.	Moral Injury Events Scale (MIES)	Interpersonal Needs Questionnaire (INQ-15) and Deployment Risk and Resilience Inventory (DRRI)	MI Other M 4.40 (SD 1.63) MI Self M 5.01, (SD 1.45) Betrayal M 4.57, (SD 1.62), Post-Deployment Support M58.58, (SD 9.40), Thwarted Belongingness M 18.07, (SD 10.26), Perceived Burdensomeness M 0.04, (SD 0.73)	• other transgressions and betrayal MI symptoms were significantly associated to thwarted belongingness when there was low social support, but this was non-significant at medium and high social support.	None	Research supported by the Military Suicide Research Consortium (MSRC),
13	79.59% White 8.16% Asian 6.12% Black/ African American 6.12% Not listed	Not reported	Moral Injury Questionnaire	The Interpersonal Needs Questionnaire	MI M 1.82 (SD 0.53) Perceived burdensomeness M 1.32 (SD 0.45) Thwarted belongingness M 2.86 (SD 1.61)	• Thwarted belonging was a mediating factor between MI and depression only when emotional regulation was moderating the effect.	None	None reported

Appendix F - JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies

Reviewer______________________________________ Date____________________________

Author____________________________________Year________ Record Number________

	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5. Were confounding factors identified?	☐	☐	☐	☐
6. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

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____

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Appendix G - JBI Critical Appraisal Checklist for Case Series

Reviewer____ Date___________________________

Author____ Year________ Record Number________

	Yes	No	Unclear	Not applicable
• Were there clear criteria for inclusion in the case series?	☐	☐	☐	☐
• Was the condition measured in a standard, reliable way for all participants included in the case series?	☐	☐	☐	☐
• Were valid methods used for identification of the condition for all participants included in the case series?	☐	☐	☐	☐
• Did the case series have consecutive inclusion of participants?	☐	☐	☐	☐
• Did the case series have complete inclusion of participants?	☐	☐	☐	☐
• Was there clear reporting of the demographics of the participants in the study?	☐	☐	☐	☐
• Was there clear reporting of clinical information of the participants?	☐	☐	☐	☐
• Were the outcomes or follow up results of cases clearly reported?	☐	☐	☐	☐
• Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☐	☐	☐
• Was statistical analysis appropriate?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

____

____

Appendix H - Moral Injury Events Scale- Civilian (MIES-C)

Please think about your experiences over the last 6 months and select a response to indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither agree or disagree	Slightly Agree	Moderately Agree	Strongly Agree
(1) I saw things that were morally wrong	1	2	3	4	5	6	7
(2) I am troubled by having witnessed others' immoral acts	1	2	3	4	5	6	7
(3) I acted in ways that violated my own moral code or values	1	2	3	4	5	6	7
(4) I am troubled by having acted in ways that violated my own morals or values	1	2	3	4	5	6	7
(5) I violated my own morals by failing to do something that I felt I should have done	1	2	3	4	5	6	7
(6) I am troubled because I violated my morals by failing to do something that I felt I should have done	1	2	3	4	5	6	7
(7) I feel betrayed by leaders who I once trusted	1	2	3	4	5	6	7
(8) I feel betrayed by friends who I once trusted	1	2	3	4	5	6	7
(9) I feel betrayed by others outside my immediate circle who I once trusted	1	2	3	4	5	6	7

Appendix I - Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5)

Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. How much you have been bothered by that problem IN THE LAST MONTH.

		Not at all	A little bit	moderately	Quite a bit	Extremely
1	Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2	Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3	Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4
4	Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5	Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6	Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7	Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8	Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9	Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10	Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11	Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12	Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13	Feeling distant or cut off from other people?	0	1	2	3	4
14	Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15	Irritable behaviour, angry outbursts, or acting aggressively?	0	1	2	3	4
16	Taking too many risks or doing things that could cause you harm?	0	1	2	3	4

Appendix J - Adverse Childhood Experiences (ACEs) Questionnaire

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?
   ○ Yes ○ No

2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?
   ○ Yes ○ No

3. Did an adult or person at least 5 years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral or anal intercourse with you?
   ○ Yes ○ No

4. Did you often or very often feel that … No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?
   ○ Yes ○ No

5. Did you often or very often feel that … You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   ○ Yes ○ No

6. Was a biological parent ever lost to you through divorced, abandonment, or other reason?
   ○ Yes ○ No

7. Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
   ○ Yes ○ No

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
   ○ Yes ○ No

9. Was a household member depressed or mentally ill? or
   Did a household member attempt suicide?
   ○ Yes ○ No

10. Did a household member go to prison?
    ○ Yes ○ No

Appendix K - Homelessness Questionnaire

Homelessness Questionnaire

Are you: Male ☐ Female ☐ Other (Please specify) ☐

How old are you? ____________

How would you describe your ethnicity?

White Other

☐ Irish
☐ British
☐ Other White

Mixed

☐ White & Asian
☐ White & Black African
☐ White & Black Caribbean
☐ Other Mixed

Asian

☐ Bangladeshi
☐ Pakistani
☐ Indian
☐ Other Asian

Black

☐ Black African
☐ Black Caribbean
☐ Other Black

☐ Chinese
☐

Do you have a mental health need or condition which has been diagnosed by a doctor or other health professional?

Yes ☐ ☐ No

If so, what is your diagnosis?

____

Please indicate your current housing situation:

Hostel	☐	Sleeping on somebody's sofa/floor	☐
Sleeping rough	☐	Squatting	☐
Own tenancy	☐	Supported accommodation	☐
Other, please specify:			

How long have you been experiencing your current episode of homelessness ?

☐

How many times have you been homeless in your life? ☐

How would you describe your family's class was your family growing up? (Please tick one)	
☐	**Under class (benefits or foster care)**
☐	**Working class**
☐	**Middle class**
☐	**Upper class**

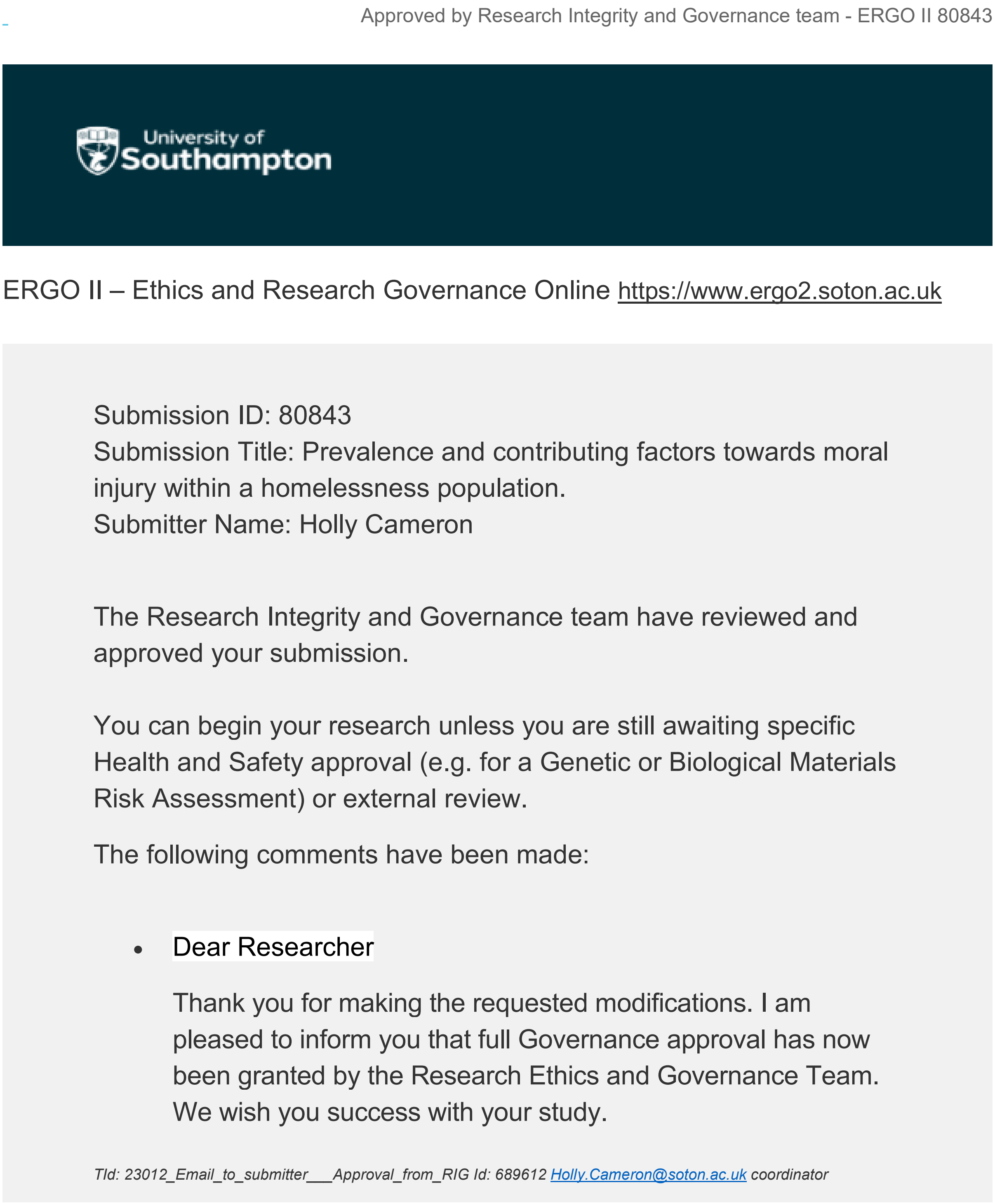
When completing the moral injury questionnaire, were your answers about events…. (Please tick one)	
☐	**Before coming homeless**
☐	**During the time of becoming homeless**
☐	**Since becoming homeless**
☐	**All of the above**

Have you experienced dependency on substances or alcohol? (Please tick one)	
☐	**Yes currently**
☐	**Yes, only before being homeless**
☐	**Yes, since being homeless but not current**
☐	**No**

Have you taken part in illegal activity ? (Please tick one)	
☐	**Yes, only before being homeless**
☐	**Yes, since being homeless**
☐	**No**

Have you experienced discrimination?	
☐	**Yes, before being homeless**
☐	**Yes, since being homeless**
☐	**No**
If you selected yes, please indicate which factor(s) related to your discrimination. (Tick all which apply)	
☐	**gender**
☐	**Ethnicity**
☐	**Religion**
☐	**Age**
☐	**Disability**
☐	**Being homeless**
☐	**Sexual orientation**
☐	**Other (please specify)**

Appendix L – Ethical Approval



Approved by Research Integrity and Governance team - ERGO II 80843

ERGO II – Ethics and Research Governance Online https://www.ergo2.soton.ac.uk

Submission ID: 80843
Submission Title: Prevalence and contributing factors towards moral injury within a homelessness population.
Submitter Name: Holly Cameron

The Research Integrity and Governance team have reviewed and approved your submission.

You can begin your research unless you are still awaiting specific Health and Safety approval (e.g. for a Genetic or Biological Materials Risk Assessment) or external review.

The following comments have been made:

- Dear Researcher

  Thank you for making the requested modifications. I am pleased to inform you that full Governance approval has now been granted by the Research Ethics and Governance Team. We wish you success with your study.

TId: 23012_Email_to_submitter___Approval_from_RIG Id: 689612 Holly.Cameron@soton.ac.uk coordinator

This ethics application process included a secondary data form for the use of data set in the non-homeless group, which was collected for another study at the university of Portsmouth in 2022. The use of this data set was also made explicit in the primary application form, alongside the information of data collection or the homeless group.

Appendix M - Participant Information Sheet for the study whose data was used as the non-homeless group.

Participant Information Sheet

Study Title: Mental Health and Well-being in the General UK Population

Names and Contact Details of Researchers:

Professor Peter Lee, University of Portsmouth, Email: peter.lee@port.ac.uk
Dr Theresa Redmond, Anglia Ruskin University, Email: theresa.redmond@aru.ac.uk

Professor Samantha Lundrigan, Anglia Ruskin University, Email: samantha.lundrigan@aru.ac.uk
Dr Paul Conway, University of Portsmouth, Email: paul.conway@port.ac.uk

If you have any queries about this project, please contact the co-investigators, Professor Peter Lee or Dr Theresa Redmond, whose details appear above. Or, if you have any general queries about how your data will be processed, please contact the University's Data Protection Officer, Samantha Hill, using any of the following contact details: Samantha Hill, 023 9284 3642 or information-matters@port.ac.uk University House, Winston Churchill Avenue, Portsmouth, Hampshire, PO1 2UP, UK

Humanities and Social Sciences Ethics Committee Reference Number: CCI-FEthC 2022-003.

Introduction

We would like to invite you to participate in a research study being undertaken by a project team from the Policing Institute for the Eastern Region (PIER) at Anglia Ruskin University and the University of Portsmouth. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. If there is anything that is not clear, or you would like further information, contact Professor Peter Lee whose details appear at the top of this document. In the questionnaire, different types of questions are asked to help understand the links between the work you do, how it affects you – or not – and how you react to it in different ways. Take time to decide if you wish to take part.

What is the purpose of this study?

The purpose of this project is to gain a detailed insight into the mental health and wellbeing of the UK general population, as a comparison to UK police.

Why have I been chosen?

We are seeking members of the UK general population to earn about their mental well-being to see what is common or unique about police well-being.

Do I have to take part?

No. You do not have to take part. If you do want to take part, you will be given this information sheet to keep and asked to sign a consent form. You are still free to withdraw at any time, without giving a reason and without negative repercussions.

What will happen to me if I take part?

Your consent to take part in this research will be sought before undertaking a questionnaire that will take around 15 minutes to complete. The questionnaire will include questions about your mental health and well-being, your background, and your coping strategies.

Upon completing the survey you will earn £1.75. If you end the survey you will not receive compensation.

Will my taking part in the study be kept confidential?

Yes. We will not record any identifying information beyond basic demographic information, and the software will record your GPS coordinates and IP address. Your responses will be stored on the computer server used to run this online study (i.e., Qualtrics' online cloud storage) and downloaded to password-protected computers belonging to the research team.

As we will not collect identifying information, we will not know who you are. Therefore, your rights to access, change, or move your information are limited. Data that does not identify you may be presented at scientific meetings or in academic publications. It could also be used in future research studies approved by a Research Ethics Committee.

To make the most of this research, anonymous data will be publicly shared at the end of the project and made open access under a CC-BY licence. This means anyone else (including researchers, businesses, governments, charities, and the general public) will be allowed to use this anonymised data for any purpose that they wish (including commercial purposes), provided that they credit the University and research team as the original creators. Although every attempt is made to safeguard confidentiality, this cannot be guaranteed.

What will happen after the questionnaires have been completed?

After you have completed the online survey, it will be analysed and a report written up.

What are the possible disadvantages of taking part?

Some of the questions may cause distress. If this happens, you can either pause or stop completion without repercussions. Should you experience any distress, email the researchers to obtain a list of supportive organisations included in the recruitment pack.

What are the possible benefits of taking part?

It is hoped that the understanding we get from this study can inform the design of a support intervention for future practice. This may help meet the mental health and wellbeing needs of police officers and other staff, and perhaps the broader community.

Data use and storage

Although we will not collect identifying information beyond basic demographic information, we ask for your consent to process the data we gather in the project so that we can conduct the research as described above in the participant information sheet. For more information on your rights in general, please see the information on the following links: http://www.port.ac.uk/departments/services/corporategovernance/gdpr/

You also have the right to lodge a complaint about the use of your personal data to initially the University (email: information-matters@port.ac.uk) and then, if you are unhappy with our response, to the Information Commissioner's Office (ICO) – for more information please see https://ico.org.uk/for-the-public/raising-concerns/.

What if there is a problem?

If you are not happy about the study or wish to make a complaint, please contact the appropriate personnel outlined at the beginning of this document.

Who is organising and funding the research?

The Policing Institute for the Eastern Region (PIER) at Anglia Ruskin University and the University of Portsmouth are organising and funding the research. The project has no external funding

Who has reviewed the study?

The study has been reviewed by the Faculty of Creative and Cultural Industries Ethics Committee, University of Portsmouth, CCI-FEthC 2022-003.

Appendix N - Participant Information Sheet for the homeless group

Participant Information Sheet

Study Title: Prevalence and contributing factors towards moral injury within a homelessness population.

Researcher: Holly Cameron

ERGO number: 80843

You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. You may like to discuss it with others, but it is up to you to decide whether or not to take part. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

This study is being conducted as part of doctorate in clinical psychology at the University of Southampton. It aims to see if people within the homeless community are impacted by “moral injury” and if so, what are the contributing factors. Moral injury occurs after encountering an event in which our moral rules are broken. Moral injury is linked to other mental health difficulties, and we will be asking questions about your experience of being homeless and your history.

Why have I been asked to participate?

We are approaching you through a hostel or day centre to invite you to participate in this study because you have been identified as homeless. We are aiming to recruit 145 participants from the homeless communities across Hampshire and Greater London.

Inclusion criteria for this study:

- To currently be experiencing homelessness.
- To be 18 years old or older.
- English fluency; this to ensure participants can understand and accurately respond to questionnaires.
- To not be intoxicated (drugs or alcohol) at the time of completing questionnaires.

What will happen to me if I take part?

After you have read this information sheet and signed a consent form to take part, you will then complete some questionnaires exploring your experience of homelessness, moral injury, and there will be questions regarding childhood adversity, trauma and the impact of this.

Whilst completing the questionnaires the researcher will be present to provide support in answering questions if required. Once completed you will be given a debriefing sheet and a £5 shopping voucher for your time. This is a single contact (lasting approximately 15 minutes) with no follow up appointments required.

Are there any benefits in my taking part?

Your participation in this study will help understand if there is an unmet need within the homeless community, which in turn can inform services and support. You will be compensated for your time with a £5 shopping voucher to thank you for your participation.

Are there any risks involved?

It's possible that you might find completion of some of the questionnaires upsetting, as they're asking questions about your past and current experiences, including exposure to trauma. You will not be asked to speak or share details of traumatic events.

What data will be collected?

The researcher (Holly Cameron) be collecting non-identifiable demographic data (e.g. age, gender, ethnicity), your history around homeless, and brief details to determine if you have forensic or drug use history. Your ratings on the moral injury, trauma and childhood experiences questionnaires will also be collected. You will be signing your name to a consent form; however, this is kept separately to rest of the data collected to maintain anonymity.

Will my participation be confidential?

Your participation and the information we collect about you during the course of the research will be kept strictly confidential.

All forms collected will be imputed onto a University of Southampton computer, following which paper forms will be destroyed. The data collected will be accessible to the researcher and their supervisors at the university of Southampton. Files containing the data will be password protected. If you consent to do so your anonymised data will also be included in a growing data set for research on the homeless community at the University of Southampton.

Only members of the research team and responsible members of the University of Southampton may be given access to data about you for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to your data. All of these people have a duty to keep your information, as a research participant, strictly confidential.

Do I have to take part?

No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part, you will need to sign a consent form to show you have agreed to take part.

What happens if I change my mind?

You have the right to change your mind and withdraw at any time without giving a reason and without your participant rights being affected. Please inform the researcher if you do not wish to continue with completing the questionnaires. After you have submitted the forms to the researcher it may not be possible to withdraw your data as it will not have identifiable information on it.

What will happen to the results of the research?

Your personal details will remain strictly confidential. Research findings made available in any reports or publications will not include information that can directly identify you. The results will be written up and submitted to the University of Southampton as part of the doctorate in clinical psychology. We will also aim to publish the results in relevant journals.

Where can I get more information?

You can contact the researcher, Holly Cameron, at the University of Southampton via email hc7n21@soton.ac.uk.

What happens if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researcher who will do their best to answer your questions.

If you remain unhappy or have a complaint about any aspect of this study, please contact the Head of Ethics & Clinical Governance, University of Southampton (023 8059 5058, rgoinfo@soton.ac.uk).

Supervisors for this project are Dr David Beattie and Dr Nick Maguire who are also reachable through the university of Southampton.

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about you for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk).

Thank you.

Appendix O - Consent Form

CONSENT FORM

Study title: Prevalence and contributing factors towards moral injury within a homelessness population.

Researcher name: Holly Cameron

ERGO number: 80843

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet (26/06/2023, Version 3) and have had the opportunity to ask questions about the study.	
I agree to take part in this research project and agree for my data to be used for the purpose of this study.	
I understand my participation is voluntary and I may withdraw for any reason without my participation rights being affected. I understand that if I withdraw from the study that it may not be possible to remove the data at a later date, as this has been submitted to the researcher anonymously.	
I agree for my data to be used as part of a larger research project on Homelessness at the University of Southampton.	

Name of participant (print name)……………………………………………………………………………

Signature of participant……………………………………………………………………………………

Date……………………………………………………………………………………… ………………….

Name of researcher (print name)……………………………………………………………………………

Signature of researcher ……………………………………………………………………………………

Date……

Appendix P – Debriefing Form

Debriefing Form

Study Title: Prevalence and contributing factors towards moral injury within a homelessness population.

Ethics/ERGO number: 80843

Researcher(s): Holly Cameron, Dr David Beattie, Dr Nick Maguire

University email(s): hc7n21@soton.ac.uk,

Version and date: Version 2, 09/06/2023

Thank you for taking part in our research project. Your contribution is very valuable and greatly appreciated.

Purpose of the study

The aim of this research was to see if there is a proportion of people in the homeless community who experience moral injury, and to explore what factors increase the likelihood of developing moral injury.

It is expected that there will be evidence of people experiencing moral injury within the homeless community, which could be due to experiencing traumatic events or the process of becoming homeless. Your data will help our understanding of how factors such as past experiences can impact the likelihood of developing moral injury.

Confidentiality

Results of this study will not include your name or any other identifying characteristics.

Further support

If taking part in this study has caused you discomfort or distress, you can contact the following organisations for support:

- Mind: this Infoline provides an information and signposting service. We're open 9am to 6pm, Monday to Friday 0300 123 3393.
- The Samaritans: 116 123
- The National Association for People Abused in Childhood (NAPAC): Supports adult survivors of any form of childhood abuse. 0808 801 0331
- Victim Support: Provides emotional and practical support for people affected by crime and traumatic events 0808 168 9111

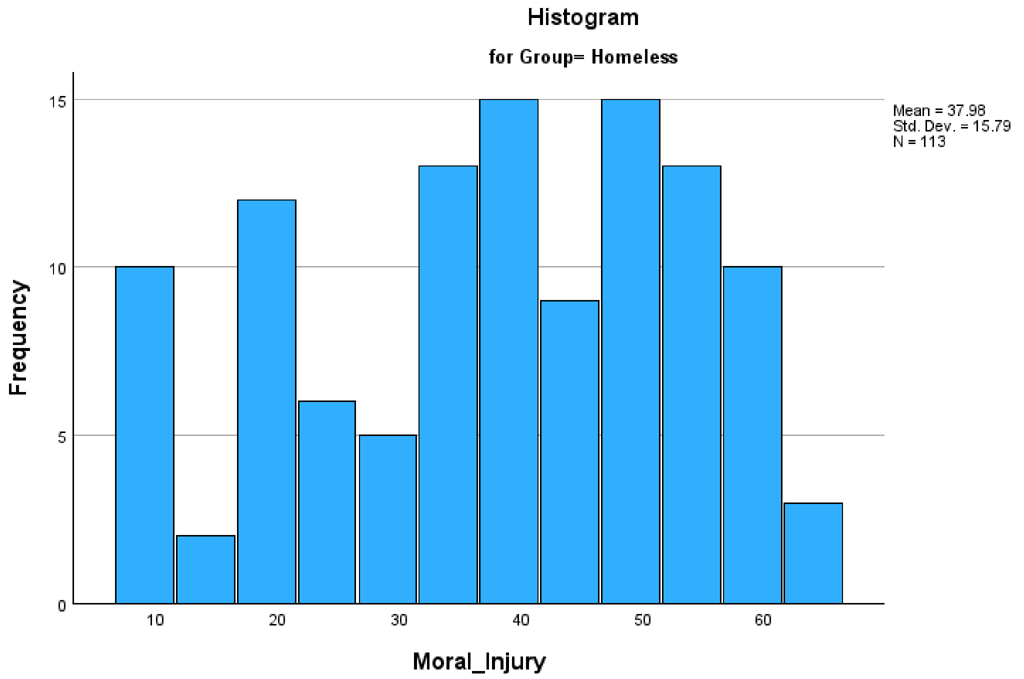
Further information

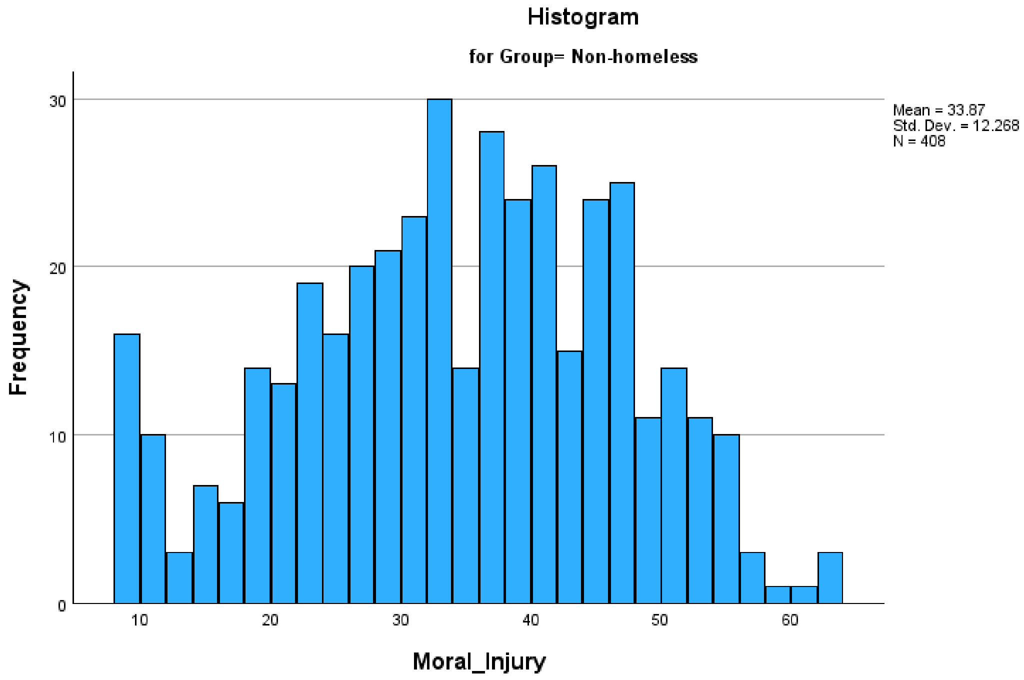
If you have any concerns or questions about this study, please contact Holly Cameron at hc7n21@soton.ac.uk who will do their best to help.

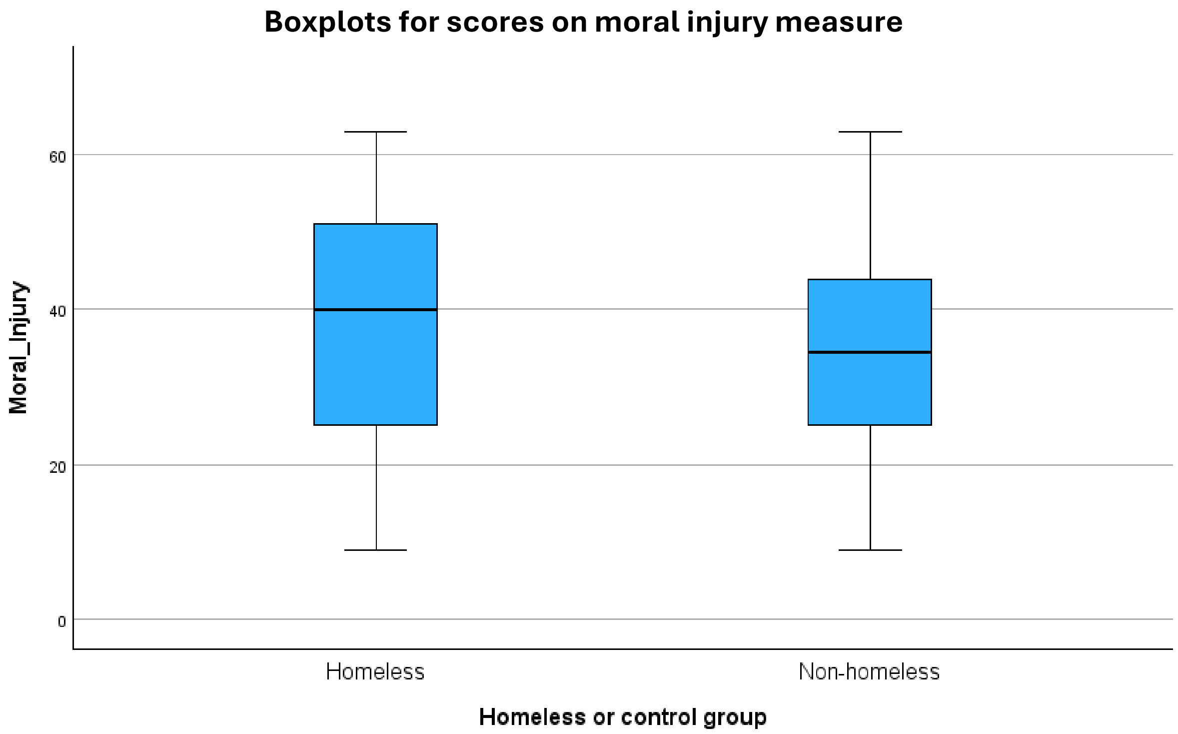
If you remain unhappy or would like to make a formal complaint, please contact Head of Ethics & Clinical Governance, University of Southampton, by emailing: rgoinfo@soton.ac.uk, or calling: + 44 2380 595058. Please quote the Ethics/ERGO number which can be found at the top of this form. Please note that if you participated in an anonymous survey, by making a complaint, you might be no longer anonymous.

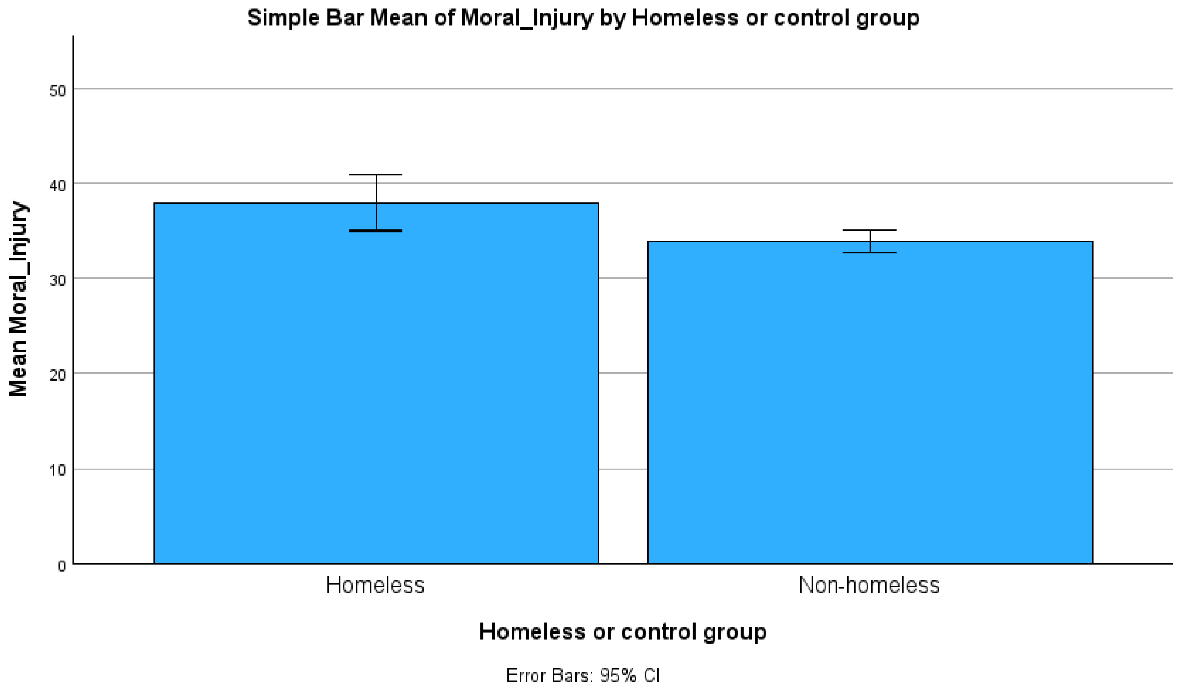
Thank you again for your participation in this research.

Appendix Q - Graphs Comparing the Data for The Homeless Group and Non-homeless Group.






Boxplots for scores on moral injury measure
Moral_Injury
60
40
20
0
Homeless
Non-homeless
Homeless or control group


Simple Bar Mean of Moral_Injury by Homeless or control group
Mean Moral_Injury
50
40
30
20
10
0
Homeless
Non-homeless
Homeless or control group
Error Bars: 95% CI

Appendix R – Summary of MI subscale's multiple linear regression

Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Transgress Other	Intercept	2.523	1.337	1.886	.062	-.129	5.175
	Discrimination	1.963	.706	2.780	.006	.563	3.363
	Illegal activity	.931	.685	1.359	.177	-.428	2.290
	alcohol	1.292	.798	1.620	.108	-.290	2.874
	Transition to homeless	1.476	.642	2.301	.023	.204	2.748
	Class	.492	.444	1.108	.270	-.388	1.372
	ACES	.403	.120	3.355	.001	.165	.642
	Gender	.587	.749	.783	.435	-.898	2.072
Betrayal	Intercept	3.895	2.130	1.828	.070	-.329	8.120
	Discrimination	4.173	1.125	3.711	<.001	1.943	6.403
	Illegal activity	.352	1.092	.323	.748	-1.813	2.517
	alcohol	.900	1.271	.708	.480	-1.620	3.419
	Transition to homeless	.937	1.022	.917	.361	-1.090	2.963
	Class	.531	.707	.751	.454	-.871	1.933
	ACES	.536	.192	2.799	.006	.156	.916
	Gender	2.281	1.193	1.912	.059	-.084	4.646
Transgress Self	Intercept	2.992	2.929	1.021	.309	-2.816	8.799
	Discrimination	2.784	1.546	1.801	.075	-.282	5.849
	Illegal activity	3.345	1.501	2.229	.028	.369	6.322
	alcohol	.883	1.747	.506	.614	-2.581	4.347
	Transition to homeless	1.160	1.405	.825	.411	-1.626	3.945
	Class	.875	.972	.901	.370	-1.052	2.803
	ACES	.562	.263	2.132	.035	.039	1.084
	Gender	2.979	1.640	1.816	.072	-.273	6.230

Appendix S - Submission Guidelines

These are the guidelines for submission to the journal Traumatology as can be found here: https://www.apa.org/pubs/journals/trm. Both chapters are written to these guidelines.

Submission

To submit to the editorial office of Regardt J. Ferreira, please submit manuscripts electronically through the Manuscript Submission Portal in Word Document format (.doc).

Prepare manuscripts according to the *Publication Manual of the American Psychological Association* using the 7th edition. Manuscripts may be copyedited for bias-free language (see Chapter 5 of the *Publication Manual*). APA Style and Grammar Guidelines for the 7th edition are available.

General correspondence may be directed to the editor's office.

In addition to addresses and phone numbers, please supply email addresses, as most communications will be by email. Fax numbers, if available, should also be provided for potential use by the editorial office and later by the production office.

Manuscript preparation

Review APA's Journal Manuscript Preparation Guidelines before submitting your article.

Formatting

Double-space all copy. Manuscripts should be 30 pages and under (not including references and tables/figures). Other formatting instructions, as well as instructions on preparing tables, figures, references, metrics, and abstracts, appear in the *Manual*. Additional guidance on APA Style is available on the APA Style website.

Below are additional instructions regarding the preparation of display equations, computer code, and tables.

In online supplemental material

We request that runnable source code be included as supplemental material to the article. For more information, visit Supplementing Your Article With Online Material.

Tables

Use Word's insert table function when you create tables. Using spaces or tabs in your table will create problems when the table is typeset and may result in errors.

Academic writing and English language editing services

Authors who feel that their manuscript may benefit from additional academic writing or language editing support prior to submission are encouraged to seek out such services at their host institutions, engage with colleagues and subject matter experts, and/or consider several vendors that offer discounts to APA authors.

Please note that APA does not endorse or take responsibility for the service providers listed. It is strictly a referral service.

Use of such service is not mandatory for publication in an APA journal. Use of one or more of these services does not guarantee selection for peer review, manuscript acceptance, or preference for publication in any APA journal.

Submitting supplemental materials

APA can place supplemental materials online, available via the published article in the PsycArticles® database. Please see Supplementing Your Article With Online Material for more details.

Abstract and keywords

All manuscripts must include an abstract containing a maximum of 250 words typed on a separate page. After the abstract, please supply up to five keywords or brief phrases.

References

List references in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the references section.

Examples of basic reference formats:

Journal article

McCauley, S. M., & Christiansen, M. H. (2019). Language learning as language use: A cross-linguistic model of child language development. *Psychological Review*, *126*(1), 1–51. https://doi.org/10.1037/rev0000126

Authored book

Brown, L. S. (2018). *Feminist therapy* (2nd ed.). American Psychological Association. https://doi.org/10.1037/0000092-000

Chapter in an edited book

Balsam, K. F., Martell, C. R., Jones. K. P., & Safren, S. A. (2019). Affirmative cognitive behavior therapy with sexual and gender minority people. In G. Y. Iwamasa & P. A. Hays (Eds.), *Culturally responsive cognitive behavior therapy: Practice and supervision* (2nd ed., pp. 287–314). American Psychological Association. https://doi.org/10.1037/0000119-012