**Measuring Civilian Moral Injury: Adaptation and Validation of the Moral Injury Events Scale
(Civilian) and Expressions of Moral Injury Scale (Civilian)**

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Abstract

Moral injury (MI) research has been expanded to populations beyond the military in recent years. A key barrier to further research into MI in civilian populations is the lack of valid, reliable measures of the construct appropriate for general civilian use. This paper addresses this barrier by adapting two existing military measures, and exploring their psychometrics in a general civilian sample: The Moral Injury Events Scale (MIES-Civilian) and Expressions of Moral Injury Scale-Military (EMIS-Civilian). A sample of civilian women ($n = 192$) and men ($n = 88$) completed the above measures, and additional scales designed to capture theoretically-supported primary and secondary markers of MI (guilt, shame, anger; depression, post-traumatic stress symptoms, anxiety). Confirmatory factor analysis found that the factor structure of the MIES-C and EMIS-C replicated well within our civilian sample. Discriminant validity was indicated through significant negative correlation with wellbeing. Both measures correlated as predicted with each other and measures of MI markers at the total score level. Correlations of individual subscales with each of these measures were more varied, shedding light on differential relationships between type of MI event and clinical outcomes, and suggesting some conceptual differences in how MI is experienced in general civilian populations. Results suggest that civilian populations are also susceptible to MI, but that existing measures may have problems capturing this effectively. While the MIES-C and EMIS-C are supported for civilian use, further scale construction efforts for this population are warranted.

Keywords: Moral injury, moral distress, civilian, morality, wellbeing, measurement, trauma, psychometrics.

Measuring Civilian Moral Injury: Adaptation and Validation of the Moral Injury Events Scale (Civilian) and Expressions of Moral Injury Scale (Civilian)

The moral injury (MI) construct first arose within military trauma literature, but has garnered increasing interest in a wider range of settings in recent years. It is defined as negative outcomes caused by perpetrating or witnessing actions that violate one's core beliefs (Griffin et al., 2019; Litz et al., 2009) or betrayal by a leader or trusted authority (Shay, 2014). MI captures behavioural, social and spiritual suffering (Currier, Holland, & Malott, 2015) that frequently overlaps with mental health diagnoses. While emerging from the military literature, the increasing relevance of the construct to broader settings suggests MI is an issue wider spread than initially thought. A key barrier to further research into MI in civilian populations however is the lack of valid, reliable measures of the construct appropriate for general civilian use.

MI frequently co-occurs with posttraumatic stress disorder (PTSD) but it is unique in both aetiology and presentation (Barnes et al., 2019; Bryan et al., 2018; Currier et al., 2019). PTSD is caused by exposure to trauma involving perceived threat to self or others, sexual violence, or witnessing harmful acts (American Psychiatric Association, 2013) and is usually characterised by exaggerated startle reflex, memory loss, nightmares, flashbacks and insomnia (Bryan et al., 2018). MI instead is caused by a moral conflict in which the actions or inaction of oneself, the actions of others or the betrayal experienced violate one's moral code, and manifests primarily as guilt, shame, anger, existential conflict and loss of trust (Jinkerson, 2016; Yeterian et al., 2019), with secondary signs often including depression, anxiety, re-experiencing, self-harm, suicidal ideation, substance use and social problems (Battles et al., 2018; Bryan et al., 2018; Currier et al., 2019; Currier, Holland, & Malott, 2015; Frankfurt & Frazier, 2016; Griffin et al., 2019; Jinkerson, 2016; Kelley et al., 2019). While a clear picture of differential relationships between different types of potentially morally injurious events (PMIEs; perpetration, witnessing or betrayal) and clinical outcomes of interest is yet to emerge, research does suggest that anger is more strongly associated with betrayal, whereas guilt and shame are more strongly associated with perpetration events (Jordan et al., 2017). Research has also suggested that

perpetration events are associated with higher levels depression, while witnessing others commit moral violations is associated with higher levels of PTSD (Bryan et al., 2015; Nickerson et al., 2018). PMIE exposure has also been linked with both significantly higher rates of suicide attempts and greater complexity of trauma in civilians (Fani, 2021). Unaddressed moral injury may also interfere with the natural post-traumatic recovery response (Jinkerson, 2016; Stein et al., 2012), hindering effective treatment for PTSD if it is not recognised.

Unlike PTSD, MI is also not a diagnosable mental health disorder according to the DSM-5 (American Psychiatric Association, 2013); rather, a moral injury is the outcome of an internal moral system that is functioning adaptively. Farnsworth et al. (2017) describe four sequential stages of the moral injury experience: PMIEs, moral pain, moral injury and moral healing. Within this process, moral pain is an adaptive response to experiences that violate our core values of what's right, designed to prompt reparation and course-correction. When the severity or frequency of the violation is beyond what can be addressed or reconciled with, a moral injury occurs. This distinction is important, because MI as an outcome has often been conflated with the events which may lead to it within earlier literature, contributing to unhelpful conceptual confusion (Currier et al., 2018; Farnsworth et al., 2014, 2017; Greene, 2013; Hutcherson & Gross, 2011; Keltner et al., 2006). The universal nature of the experience of moral pain in response to violations highlighted by Farnsworth suggests that the MI construct has relevance beyond the confines of military literature. The successful application of the MI construct to in an increasingly diverse range of contexts in recent years (Backholm & Idås, 2015; Brennan et al., 2022; Carter, 2021; Crane et al., 2015; Currier, Holland, Rojas-Flores, et al., 2015; Fani et al., 2021; Hagerty & Williams, 2022; Haight et al., 2022; Hines et al., 2021; Komarovskaya et al., 2011; Lamiani et al., 2017; Levi-Belz & Zerach, 2022; Nickerson et al., 2018; Oh & Gastmans, 2015; Williamson et al., 2022) further supports the idea that all people are susceptible to experiencing MI under certain circumstances. Building on this direction of research, a recent integrative review by the US Department of Veterans Affairs (Griffin et al., 2019) flagged broadening the MI experience to civilian populations as a key area for further research. Evidence for the utility of exploring MI among civilians comes from not

only the growing list of occupations found to experience MI, but also the civilian lifetime prevalence rates of PTSD. PTSD is a known correlate of MI, and lifetime rates range from 6.1-9.2% in the USA and Canada (Kessler et al., 2005; Koenen et al., 2017; Resnick et al., 1993; Van Ameringen et al., 2008) and 2.1-2.3% in upper middle income countries outside the USA (Koenen et al., 2017), suggesting MI may also be occurring alongside instances of PTSD. Prior research in military samples suggests rates of co-occurrence as high as 36% (Litz et al., 2018). However, a key barrier to the study of MI in non-military contexts is the lack of valid, reliable measures of the construct which are appropriate for use with non-military populations.

Most extant psychometric measures of MI to-date focus on capturing either exposure to PMIEs or on outcomes of MI, and nearly all of these are tailored for military groups (Currier et al., 2018; Currier, Holland, Drescher, et al., 2015; Koenig et al., 2018; Nash et al., 2013). Emerging research which does explore MI in civilian settings often uses these military-specific measures, modifying the wording of the scales on an ad-hoc basis to make them appropriate for use in other settings (Brennan et al., 2022; Carter, 2021; Fani et al., 2021; Hagerty & Williams, 2022; Haight et al., 2022; Hines et al., 2021, 2021; Hoffman et al., 2018; Levi-Belz & Zerach, 2022; Sugrue, 2020; Williamson et al., 2022). This is necessary because researchers currently have few alternatives, given adaptations of existing scales validated for use by having their factor structure replicated and psychometrics examined in non-military settings do not exist. Some new scales for specific non-military settings are beginning to emerge, however wording is often highly specific to particular occupational settings (Mantri et al., 2020), development is still only in the pilot testing phase (Roth et al., 2022), or they do not capture the full range of the MI construct (Steinmetz, 2018). There are currently no scales developed specifically for generalised settings, able to be used across all age groups and contexts. We aim to address this gap by modifying two existing measures and examining their psychometrics in a non-military sample, to provide validation and support their use in generalised civilian research.

We chose one military measure focusing on MI events (Moral Injury Events Scale; Nash et al., 2013), and one focusing on MI outcomes (Expressions of Moral Injury Scale – Military; Currier et al.,

2018). The Moral Injury Events Scale (MIES) was selected because it is one of the first and most widely used measures of PMIEs, and the measure most frequently adapted and applied in civilian research. The MIES is a 9-item scale with a three-factor structure (Bryan et al., 2015), that captures exposure to moral violations either perpetrated or witnessed by the individual, and betrayal experiences. It is a popular choice for modification for new non-military research (Brennan et al., 2022; Carter, 2021; Fani et al., 2021; Hagerty & Williams, 2022; Haight et al., 2022; Hines et al., 2021; Hoffman et al., 2018; Levi-Belz & Zerach, 2022; Williamson et al., 2022) due to its brevity and simplicity of wording. Unfortunately, despite frequent use in civilian research, the MIES has not yet been formally adapted and validated for use with a non-military samples, which raises serious concerns for the validity of research utilising the measure in this way. The Expressions of Moral Injury Scale – Military (EMIS-M) was chosen because it is one of the few measures of MI outcomes available, and is the most psychometrically sound according to a review of the methodology within each scale construction paper (Currier et al., 2018; Koenig et al., 2018). The EMIS-M has a two-factor structure, capturing negative cognitions, emotions and behaviours directed towards the self (negative self-beliefs, shame, guilt, and self-handicapping behaviours) and others (mistrust in others, anger, disgust, hostility and aggression) as a result of exposure to PMIEs. Like the MIES, the EMIS-M was developed for military populations and is worded accordingly. It also has not yet been formally adapted and validated for use outside the military. A third and final measure of MI was also included, the Moral Injury Scale for Youth (MISY; Chaplo et al., 2019). The MISY was included because it is one of the first measures of MI events developed specifically for a generalised civilian population, and while developed for and validated with youth populations only, it provides a basis for convergent validity when assessing the adapted military measures. Targeted specifically at youth populations experiencing interpersonal transgressions, the MISY builds on the three-factor structure of the MIES by adding further nuance around the forms PMIEs may take. The MISY applies a five-factor structure of PMIEs, capturing perpetrations of moral violations both with full agency and under duress, acts of omission, witnessing, and betrayal experiences. Due to its recent development, the factor structure of the MISY has not yet been

replicated, and the measure has not been validated for use in samples with wider age range or more ethnic diversity.

The current study had two objectives. The first was to test the modified civilian MIES (MIES-C) and modified civilian EMIS-M (EMIS-C) in a general sample not restricted by age range, occupation or any other demographic. In doing so we investigated the psychometric properties of each measure, how they comparatively perform, and provide validation and support for each measure's use in non-military research. The second was to examine how these measures differentially relate to: (a) each other, b) the MISY and (c) current severity for primary symptoms of anger, guilt and shame, in addition to secondary outcomes of depression, anxiety and posttraumatic stress symptoms (PTSS), and reduced wellbeing. We predicted that the factor structure for each measure would replicate well, but average scores would be lower than seen in the original studies due to utilising a non-clinical sample. We predicted that the measures would correlate with the MISY, with stronger association observed between related factors, specifically; MISY commission factors (with agency and under duress), the MIES-C and EMIS-C 'self' factors being significantly more strongly correlated with each other; MISY witnessing and omission factors, MIES-C and EMIS-C 'other' factors being more strongly correlated with each other; and the MISY 'betrayal' factor being more strongly associated with the MIES-C 'betrayal' factor. Based on prior research and theory, we also anticipated that the above measures would demonstrate positive associations with shame, guilt, anger, depression, anxiety and posttraumatic stress symptoms at the total score level. We also predicted some differential relationships at the subscale level, based on prior research. Specifically, we anticipated that anger would be more strongly associated with the 'betrayal' subscale of the MIES-C and the 'other' subscale of the EMIS-C; higher levels of guilt, shame and depression would be more strongly associated with the 'self' subscales of the MIES-C and EMIS-C; and post-traumatic stress symptoms would be more strongly associated with 'other' subscales of both the MIES-C and EMIS-C. Lastly, we predicted that divergent validity would be supported through a significant negative correlation of each measure with wellbeing, both at the total score and subscale level.

Method

Participants and Procedure

Participants were 287 civilians, including 192 women and 88 men (three people identified as gender variant/non-conforming, and four did not disclose their gender). Participants ranged in age from 18 to 59 years ($M = 20.28$, $SD = 3.01$). Participants' country of origin was predominantly Australia (160) and China (55), and there were a small number of participants from other countries, such as Singapore, Germany, and the USA. Religious affiliation was predominantly no affiliation (107), atheist/agnostic (78), Christian (73), Muslim (10), Hindu (5), Buddhist (6) and Other (8). The ethical aspects of this study were approved by the relevant ethics committee. Participants were recruited both online over social media platforms (Facebook, Reddit) with no incentive offered, and from an undergraduate participant pool in the authors' department which offered students the opportunity to participate in research for course credit. The majority of participants (81.5%) were students, and no military personnel participated. Participants who consented received a link to an online survey hosted on Qualtrics. Given the generalised nature of the sample, participants were first oriented to the focus of the study by reading a statement describing moral injury experiences before being asked to write a brief description of their experience with a moral conflict (see supplementary files). This was followed by a battery of questionnaires comprising the MIES-C, EMIS-C and MISY, and additional scales designed to capture primary (shame, guilt, anger) and secondary (depression, anxiety, PTSS) markers of MI, in addition to general wellbeing and demographic questions.

Measures

Moral Injury Events Scale - Civilian (MIES-C): The original MIES (Nash et al., 2013) is a nine-item self-report measure of PMIEs developed for use in military populations. Items are grouped into three subscales: transgressions by the self, transgressions by others, and betrayal (Bryan et al., 2015). Participants are asked to indicate how much they agree with each statement on a 6-point Likert-type scale (1 = *strongly disagree* to 6 = *strongly agree*). Internal consistency in the current sample was excellent: Transgressions–Self $\alpha = .89$; Transgressions–Other $\alpha = .71$; and Betrayal $\alpha = .82$. To alter

the MIES into the MIES-C for generalised civilian use, the initial instructions and items 8 and 9 were modified replace direct reference to the military with generalised language – e.g., '*I feel betrayed by fellow service members who I once trusted*' was replaced with '*I feel betrayed by friends who I once trusted*' (see Supplementary Materials for full modifications).

Expressions of Moral Injury Scale – Civilian (EMIS-C): The original EMIS-M (Currier et al., 2018) is a 17-item measure of MI-related outcomes. Items on the EMIS-M capture emotions, beliefs, attitudes and behaviours that reflect moral injury grouped into two subscales: Self-Directed moral injury and Other-Directed moral injury. Items are rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Internal consistency in the current sample was excellent: total score, Cronbach's $\alpha = .90$; Self-Directed Moral Injury $\alpha = .81$; Other-Directed Moral Injury $\alpha = .80$. To alter the EMIS-M into the EMIS-C for generalised civilian use, the initial instructions and individual items were modified to replace direct reference to the military with generalised language – e.g., '*My military experiences have taught me that it is only a matter of time before people will betray my trust.*' was replaced with '*My experiences have taught me that it is only a matter of time before people will betray my trust*' (see Supplementary Materials for full modifications).

Moral Injury Scale for Youth (MISY): The MISY (Chaplo et al., 2019) is a 24-item measure of PMIEs for civilian youth populations. Items are grouped into five subscales: Commission with Agency, Commission Under Duress, Omission, Witnessing and Betrayal. Participants are asked to rate each of the items on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Internal consistency in the current sample was excellent: total Cronbach's $\alpha = .91$; Commission with Agency $\alpha = .90$; Commission Under Duress $\alpha = .89$; Omission $\alpha = .82$; Witnessing $\alpha = .88$; Betrayal $\alpha = .93$.

Depression Anxiety and Stress Scale 21 (DASS-21): The DASS-21 (Lovibond & Lovibond, 1995) is a 21-item measure of depression, anxiety and stress. It distinguishes well between features of depression, physical arousal, and psychological tension, with internal consistency and concurrent validity in acceptable to excellent ranges (Antony et al., 1998) as well as good cross-cultural validation. Participants select ratings on a 4-point Likert-type scale (0 = *never* to 3 = *always*) of how much each

item applied over the past week. Internal consistency in the current sample was excellent: Depression $\alpha = .91$; Anxiety $\alpha = .85$; Stress $\alpha = .86$.

Warwick-Edinburgh Mental Well-being Scale (WEMWBS): The WEMWBS (Tennant et al., 2007) is designed to capture a broad conception of wellbeing including affective-emotional aspects, cognitive evaluative dimensions and psychological functioning. The scale consists of 14 items answered on a 5-point Likert-type scale (1 = *none of the time* to 5 = *all of the time*). The scale focuses entirely on the positive aspects of mental health, and has been found to be reliable and with good validity, internal consistency and test-retest reliability (Tennant et al., 2007). Internal consistency in the current sample was excellent: $\alpha = .92$.

The Posttraumatic Checklist – 6-item Civilian Version (Abbreviated PCL-C): The Abbreviated PCL-C (Lang et al., 2012; Lang & Stein, 2005) is a 6-item shortened version of the PTSD Checklist – Civilian version (PCL-C). The PCL-C is a well-validated and widely-used measure assessing the PTSD criteria described in the DSM-4 (American Psychiatric Association, 2000). In the abbreviated version, respondents are asked to indicate on a 5-point scale (0 = *not at all* to 4 = *extremely*) how much they have been bothered in the past month by each item. Internal consistency in the current sample was excellent: $\alpha = .85$.

Personal Feelings Questionnaire-2 (PFQ-2): The PFQ-2 (Harder & Greenwald, 1999) is a 16-item measure designed to assess guilt and shame proneness. Respondents indicate the frequency of their experiences consistent with guilt and shame on a 5-point Likert-type scale (0 = *never* to 4 = *continuously or almost constantly*). Internal consistency in the current sample was excellent: Shame $\alpha = .80$; Guilt $\alpha = .79$.

The Dimensions of Anger Reactions Scale 5 (DAR-5): The DAR-5 (Forbes et al., 2014) is a 5-item self-report measure that assesses anger experiences over the prior 4 weeks. Items are rated on a 5-point Likert-type scale (1 = *none or almost none of the time* to 5 = *all or almost all of the time*). The DAR-5 has demonstrated good convergent and discriminant validity (Forbes et al., 2014). Internal consistency in the current sample was excellent: $\alpha = .83$.

Demographic Questions: In addition to the existing scales detailed above, demographic information (age, gender, country of origin, religious affiliation) was sought.

Data Analysis

Data were screened and cleaned prior to analyses. 409 participants began the survey, and 287 completed. Of the 30% who did not complete, 17% were from the group recruited over social media, and 13% from the student group – these participants were deleted from the final pool, as no systematic bias was observable. Confirmatory factor analysis (CFA) was performed in the *lavaan* package for R (Rosseel, 2012) using the maximum likelihood estimation method. Factors were allowed to correlate, and the variance of each factor was fixed to 1.0. Multiple fit indices were used in order to obtain a more conservative and reliable evaluation of the model fit. Guided by suggestions provided in Hu and Bentler (1999), acceptable model fit with an RMSEA of .08 or less is adequate (whereas values of .06 or less are excellent); CFI value of .90 or greater is adequate (and values of .95 or higher indicate excellent fit); and for SRMR, values of .05 indicate adequate fit. Internal consistency was assessed using Cronbach's alpha, and construct validity by examining correlations with a bonferroni corrected alpha of .0003 (i.e., $\alpha = .05/139$ comparisons).

Results

Confirmatory Factor Analyses

Initial goodness of fit indices suggest that the MIES-C three-factor model fit the data poorly ($df = 24$, $\chi^2 = 99.5$, $p < .001$, RMSEA = .10, CFI = .94, SRMR = .05), and the EMIS-C two-factor model ($df = 118$, $\chi^2 = 320$, $p < .001$, RMSEA = .08, CFI = .90, SRMR = .06) and MISY five-factor model ($df = 242$, $\chi^2 = 670$, $p < .001$, RMSEA = .08, CFI = .91, SRMR = .06) fit the data adequately. Upon closer inspection of residual covariance modification indices, all three measures demonstrated several higher values caused by items which were very similar, either conceptually or in wording (MIES-C items 5/6 and 3/4; EMIS-C items 1/7 and 8/14; MISY items 7/8 and 1/2). Allowing these item pairs to covary improved model fit indices to the point where they were adequate for the MIES-C ($df = 22$, $\chi^2 = 60.2$, $p < .001$, RMSEA = .08, CFI = .97, SRMR = .04), the EMIS-C ($df = 116$, $\chi^2 = 265$, $p < .001$, RMSEA = .07, CFI =

.93, SRMR = .06) and the MISY ($df = 240$, $\chi^2 = 479$, $p < .001$, RMSEA = .06, CFI = .95, SRMR = .06).

Although χ^2 values across each measure were significant, the models reproduced the observations in the data well based on alternative fit criteria. The final measurement models contained no double-loading indicators, and all other measurement error was presumed to be uncorrelated. Item factor loadings are presented for each measure in Supplementary Materials.

Descriptive Statistics and Internal Consistency

Mean and standard deviation values in our current sample were equivalent with or higher than those from the original studies for the MIES, EMIS-M and the MISY (Table 1). All measures also demonstrated good internal consistency with values above the recommended cut-off of .70 for internal consistency recommended by Reuterberg and Gustafsson (1992).

Table 1

Descriptive Statistics Reliability Estimates of the MISY, MIES-C and EMIS-C (Original VS Current Values)

Measure	Subscale	<i>M</i> original	<i>M</i> current	<i>SD</i> original	<i>SD</i> current	Original α	Current α
MISY	Commission with Agency	3.25	3.16	1.00	.92	.92	.90
	Commission Under Duress	1.89	2.21	.93	.90	.94	.89
	Omission	3.18	3.37	1.14	.96	.87	.82
	Witnessing	4.08	4.10	.87	.75	.94	.88
	Betrayal	3.84	3.83	.99	.93	.94	.93
MIES	Transgression – Other	3.68	4.14	1.74	1.12	.79	.71
	Transgression – Self	2.49	3.68	1.71	1.21	.96	.89
	Betrayal	3.21	3.49	1.70	1.31	.83	.82
EMIS	Self-Directed	1.66	2.49	.83	.84	.94	.81
	Other-Directed	2.15	2.84	.91	.86	.92	.80

Validity Analyses

Total scores for the MIES-C, EMIS-C and MISY all correlated significantly with each other (Table 2) and demonstrated significant positive correlations with measures of anger, shame, guilt, PTSS, depression and anxiety, and significant negative correlations with wellbeing (Table 3; Figure 1).

Table 2*Correlations between MISY, MIES-C and EMIS-C (Total Scores) and Associated Outcomes*

	MISY	MIES	EMIS-M	PFQ Shame	PFQ Guilt	PCL-C PTSS	WEMWBS Wellbeing	DAR-5 Anger	DASS Dep	DASS Anx
MISY	-	.60***	.45***	.25***	.21***	.12*	-.20**	.33***	.26***	.20**
MIES-C		-	.50***	.28***	.28***	.20**	-.25***	.36***	.30***	.30***
EMIS-C			-	.51***	.54***	.48***	-.42***	.63***	.55***	.51***

Note. *** $p < .0003$, ** $p < .01$, * $p < .05$ **Table 3***Correlations Between MISY, MIES-C and EMIS-C Subscales and Validity Criteria Subscales*

	MISY Duress	MISY Omiss	MISY Witness	MISY Betrayal	EMIS Self	EMIS Other	MIES Other	MIES Self	MIES Betrayal	DASS Dep	DASS Anx	DAR-5 Anger	PFQ Shame	PFQ Guilt	PCL-C PTSS	WEMWBS Wellbeing
MISY Agency	.39***	.51***	.39***	.25***	.31***	.20**	.24***	.51***	.25***	.16**	.11	.21***	.20**	.18**	.13*	-.14*
MISY Duress	-	.30***	.13*	.16**	.39***	.30***	.15*	.21**	.23***	.12	.17**	.22***	.19**	.18**	.23***	-.11
MISY Omission		-	.46***	.23***	.27***	.28***	.28***	.45***	.29***	.11	.15**	.19**	.24***	.17**	.08	-.10
MISY Witness			-	.50***	.08	.24***	.32***	.31***	.25***	.17**	.10	.19**	.13*	.05	-.09	-.16**
MISY Betrayal				-	.14*	.39***	.30***	.17**	.56***	.24***	.15*	.29**	.12	.11	.02	-.15**
EMIS Self					-	.52***	.24***	.41***	.31***	.51***	.49***	.58***	.48***	.54***	.43***	-.37***
EMIS Other						-	.28***	.23***	.46***	.46***	.39***	.52***	.41***	.40***	.41***	-.36***
MIES Other							-	.43***	.29***	.08	.09	.18**	.09	.11	.07	-.08
MIES Self								-	.33***	.24***	.26***	.28***	.23***	.25***	.17**	-.21**
MIES Betrayal									-	.30***	.28***	.33***	.26***	.23***	.18**	-.24***

Note. *** $p < .0003$, ** $p < .01$, * $p < .05$

When examining correlations with validity criteria at the subscale level (Table 3), the EMIS-C 'self' subscale correlated significantly with related subscales of the MISY ('commission with agency', 'commission under duress' and 'acts of omission') but not other-directed subscales ('witnessing' and 'betrayal'). The EMIS-C 'self' subscale also correlated significantly with all three subscales of the MIES-C ('self', 'other' and 'betrayal'), but most strongly with conceptually related 'self' subscale. The EMIS-C 'other' subscale correlated significantly with all MISY subscales except for 'commission with agency', and all MIES-C subscales (although the strongest relationship was observed with the 'betrayal' subscale). Within the MIES-C, the 'self' subscale correlated significantly with the MISY 'commission with agency', 'act of omission' and 'witnessing' subscales, and with both subscales of the EMIS-M (although the relationship with the EMIS-C 'self' subscale significantly stronger). The MIES-C 'other' subscale correlated significantly with MISY 'commission with agency', 'acts of omission', 'witnessing' and 'betrayal', and with both subscales of the EMIS-C. The MIES-C 'betrayal' subscale correlated significantly with all subscales of the MISY and EMIS-M, although significantly stronger relationships were observed with the MISY 'betrayal' subscale, and EMIS-M 'other' subscale. Both subscales of the EMIS-C correlated significantly with measures of anger, shame, guilt, posttraumatic stress symptoms, depression and anxiety, and demonstrated a significant negative relationship with wellbeing. The MIES-C 'other' subscale did not correlate significantly with any measure of related outcomes at the corrected alpha level of .0003, although the strongest relationship was seen with anger (significant at the .01 level). The MIES-C 'self' subscale correlated significantly with anger, guilt, shame, depression and anxiety, and with PTSS and reduced wellbeing at the .01 level. Lastly, the MIES-C betrayal subscale correlated significantly with anger, guilt, shame, depression, anxiety and reduced wellbeing, and with PTSS at the .01 level. Strength and direction of all correlations are represented in Figure 1.

Figure 1. Correlogram representing relationships between MIES-C, EMIS-C and MISY subscales, related measures of MI primary (guilt, shame, anger) and secondary (depression, anxiety, PTSS) markers, and wellbeing.

Note: Positive correlations are displayed in blue and negative correlations in red. Colour intensity and the size of the pie are proportional to the correlation coefficients.

Discussion

This study addressed the need for generalised, non-military specific measures of PMIEs and MI by modifying the MIES and EMIS-M, and testing their factor structure and validity in a generalised sample. As predicted, the factor structure of the MIES-C and EMIS-C replicated well within our sample. Unexpectedly, mean scores of each scale measured equivalently or higher than the original studies. This suggests at face-value that the experience of PMIEs and MI as measured here are relevant to the general population. The MIES-C and EMIS-C each correlated significantly in predicted ways with primary and secondary markers of MI at the total score level, supporting construct validity.

At the subscale level, the EMIS-C demonstrated the strongest support for convergent validity, with its 'self' and 'other' subscales correlating significantly in predicted ways with subscales capturing related PMIE types within the MIES-C and MISY (Table 3; Figure 1). Specifically, stronger relationships were observed between the EMIS-C 'self' subscale and the MISY and MIES-C subscales capturing self-directed transgressions (commission with agency, commission under duress and acts of omission; MIES-C 'self'). With the EMIS-C 'other' subscale, the strongest correlations were observed with the MISY and MIES-C 'betrayal' subscales. Convergent validity was also supported at the subscale level of the MIES-C, although patterns were less marked. The MIES-C 'other' subscale correlated significantly with all other subscales except for MISY 'commission with agency' (although the strongest relationships were observed with the conceptually related MISY 'witnessing' and 'betrayal' subscales). The MIES-C 'self' subscale correlated significantly with all other subscales aside from the MISY 'commission under duress' and 'betrayal' subscales (although, again, the strongest relationships were observed with the conceptually related MISY 'commission with agency' and 'acts of omission' subscales, and the EMIS-C 'self' subscale). The MIES-C 'betrayal' subscale correlated significantly with all other subscales of the EMIS-C and MISY, although significantly stronger relationships were observed with the MISY 'betrayal' and EMIS-C 'other' subscales.

External validity of each measure was also supported. As predicted, anger was most strongly associated with the 'betrayal' subscales within the MIES-C and MISY, although this relationship was not significantly stronger than with the other subscales. Anger was strongly associated with both subscales of the EMIS-C, with no meaningful difference emerging. Depression was not significantly more correlated with the 'self' subscales of the EMIS-C or MISY as seen in prior research, but did show a significant trend of association with the MIES-C 'self' and 'betrayal' factors. The same pattern was observed with PTSS, with no meaningful difference in significant correlations between the two subscales of the EMIS-C emerging, although a significant relationship was shown with the MISY 'commission under duress' subscale and stronger relationships with the 'self' and 'betrayal' subscales of the MIES-C (although falling short of significance at the corrected alpha level of .0003). Generally,

the EMIS-C tended to be significantly associated with all primary (anger, guilt, shame) and secondary (depression, anxiety, PTSS, reduced wellbeing) markers of MI. This is likely due to the measure assessing MI symptoms rather than PMIEs. In the case of the MIES-C, a clear pattern emerged whereby other-directed PMIEs were not associated with primary or secondary markers, but self-directed or betrayal-based PMIEs were (Table 3; Figure 1). These findings deviate somewhat from those of the original study within military samples and other previous research in refugee populations, which found that other-directed scores were most strongly associated with PTSS (Bryan et al., 2015; Nickerson et al., 2018), and may suggest that the experience of PMIEs in a general population are conceptually different from those experienced by military populations insofar as primary and secondary markers occur result mostly through betrayal or when the individual is the direct agent of the transgression rather than witnessing others commit moral violations.

When considering the theoretical basis of such findings, it is possible that the missing ingredient within a general sample is the strong shared values system and social identity seen within military culture (Ellemers et al., 2013; Ellemers & Bos, 2012; Flack & Kite, 2021). This shared identity and values system is often a strong protective factor (Atuel & Castro, 2018; Castro et al., 2015; Migliore & Pound, 2016), but may also cause the individual to feel implicated in a witnessed PMIE without necessarily being directly responsible. Likewise, professions where MI is most commonly seen often experience both the high-stakes situations which give rise to a moral transgression, and the shared identity which may make witnessing violations or the betrayal of other group members all the more devastating (Davidson et al., 2022; Lawn et al., 2020; Willetts & Clarke, 2014). Given a general sample is less likely to have any such strong shared social identity with transgressors of the PMIEs they witness, they may only experience negative outcomes when they are the direct transgressor of a PMIE, or when experiencing betrayal by another they do identify with. Further research exploring the conceptual differences of PMIEs and markers of moral injury experienced by civilian populations is an important avenue for future exploration.

While we have demonstrated that the MIES-C and EMIS-C are valid and supported for general non-military use, further scale construction efforts in order to capture civilian PMIEs and MI effectively still may be of benefit. Specifically, each measure required error covariances of two pairs of items to be freed in order to improve model fit to acceptable standards, and fit indices could still be improved upon. Within both the MIES-C and EMIS-C there is some repetition of either wording or conceptual meaning across items which may explain the high error variance and suggest both measures may benefit from further refinement before wider use. The 'other' subscale of the MIES-C also comprised only two items, which correlated strongly – an issue which has been highlighted as a concern previously (Bryan et al., 2015). The high correlation between the two subscales of the EMIS-C may also suggest the measure is better representative of a unidimensional construct (Currier et al., 2020). These psychometric limitations may be reflective of the conceptual differences in the way the MI construct is experienced in civilian settings, or could suggest that our sample was too generalised. Given the overlapping nature of PTSD and MI, focussing on civilians who have experienced other prior trauma or occupy high-risk professions may offer greater utility in future non-military scale construction research.

There are certain limitations to note. Firstly, although the study utilises a generalised, civilian sample and every attempt was made to recruit a broad age range, this sample is less diverse in age and country of origin than is optimal. Even though ages ranged from 18 – 59, providing a much wider scope than that utilised within the MISY, the mean age of participants was still low at 20.28 ($SD = 3.01$), due to the majority of participants being university students. Even though construct validity was supported, we implemented a cross-sectional design, and therefore cannot draw temporal inferences regarding the presence of PMIEs, MI and associated psychopathology. Further, associations were correlational in nature, and therefore causation cannot be inferred. In addition, although informative validity correlations were observed, their strength was often small to moderate. While the PCL-C was chosen a measure of PTSS due to its brevity and civilian focus, it was developed for the DSM-IV and therefore does not tap current diagnostic criteria for PTSD. Finally, it should be noted that although civilians appear to be susceptible to the same MI processes and associated psychopathology as

military personnel, they may not experience the conditions required for severe MI on a day-to-day basis due to the lack of high stakes situations and implication via shared social identity with perpetrators of other-directed PMIEs. While mean score values in the current study were equivalent to those seen in the original military samples of each measure, it is possible these are inflated scores due to the priming exercise utilised in our study rather than reflective of true experience. It is also possible that in adapting the measures explored here some precision of focus was lost. All of the above should be considered when interpreting findings.

In sum, this study provided support for the psychometric properties of the MIES-C, and EMIS-C when used in a generalised, non-occupation specific sample. Despite limitations, the current study offers an important contribution by amending these two commonly used measures of PMIEs and MI markers to support their use in non-military research, in addition to examining their psychometrics and how factor structure replicates in a general sample. Specifically, we offer the first validation study of the EMIS-C, MIES-C and MISY, in addition to offering new insight into how the construct of MI may appear in generalised civilian groups not bound to any one profession. Offering psychometric support for the above measures to be used in this demographic is an important step in both supporting existing research that has already adapted and used the measures without validation, and facilitating further research of the MI construct in civilian populations. Despite psychometric support, there are some problems with the scales when applied to a general civilian sample, which may warrant further scale construction efforts. Future research should build on the existing measures and aim to develop a measure appropriate for assessing MI outcomes within the general population, in addition to developing a valid, multidimensional measure of non-military occupational PMIEs and/or MI which can be applied across professional settings. Development of such measurement tools will address problems with inconsistent measurement within the field, and will help facilitate further exploration of the conceptual differences in PMIEs and MI outcomes (Farnsworth et al., 2017) as they are experienced in civilian populations, contributing to our larger understanding of MI as a construct.

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MEASURING CIVILIAN MORAL INJURY

Supplementary Materials

Table S.1

Modifications between the MIES and MIES-C, and EMIS-M and EMIS-C

	MIES	MIES-C
Instructions	Please circle a number to indicate how much you agree or disagree with each of the following statements about your experiences at any time since joining the military.	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 statements.
Item 8	I feel betrayed by fellow service members who I once trusted.	I feel betrayed by friends who I once trusted.
Item 9	I feel betrayed by others outside the U.S. military who I once trusted.	I feel betrayed by others outside my immediate circle who I once trusted.
	EMIS-M	EMIS-C
Instructions	Military service can entail doing or witnessing acts that may affect one's emotional well-being, relationships and later quality of life. When considering your own feelings, beliefs and behaviours related to things that you did/saw in the military, please indicate how much you personally agree or disagree with each statement.	Sometimes we commit or witness acts that may affect our emotional well-being, relationships and quality of life. Please consider your own feelings, beliefs, and behaviours related to your moral experiences, and indicate how much you personally agree or disagree with each statement
Item 1	I am ashamed of myself because of things that I did/saw during my military service.	I am ashamed of myself because of things that I have seen or done.
Item 2	I feel anger over being betrayed by someone who I had trusted while I was in the military.	I feel anger over being betrayed by someone who I had trusted.
Item 3	My military experiences have taught me that it is only a matter of time before people will betray my trust.	My experiences have taught me that it is only a matter of time before people will betray my trust.
Item 4	Because of things that I did/saw in the military, I doubt my ability to make moral decisions	Because of things that I have seen or done, I doubt my ability to make moral decisions

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Table S.2

Results from the Confirmatory Factor Analysis Showing Item Loadings for the MIES-C

Item Label	Item Content	Factor Loading		
		1	2	3
Factor 1: Transgression - Other				
Item 1	I saw things that were morally wrong	.72		
Item 2	I am troubled by having witnessed others' immoral acts	.78		
Factor 2: Transgression - Self				
Item 3	I acted in ways that violated my own moral code or values		.77	
Item 4	I am troubled by having acted in ways that violated my own morals or values		.90	
Item 5	I violated my own morals by failing to do something I felt I should have done		.74	
Item 6	I am troubled because I violated my morals by failing to do something I felt I should have done		.78	
Factor 3: Betrayal				
Item 7	I feel betrayed by leaders who I once trusted			.69
Item 8	I feel betrayed by friends who I once trusted			.82
Item 9	I feel betrayed by others outside my immediate circle who I once trusted			.81

Note. All $p < .001$. $N = 287$. Error covariances between items 7 and 8, and between items 1 and 2 were freed.

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Table S.3

Results from the Confirmatory Factor Analysis Showing Item Loadings for the Adapted EMIS-M

Item Label	Item Content	Factor Loading	
		1	2
Factor 1: Self-Directed Moral Injury			
Item 1	I am ashamed of myself because of things that I have seen or done	.50	
Item 4	Because of things that I have seen or done, I doubt my ability to make moral decisions	.56	
Item 5	In order to punish myself for things that I have seen or done, I often neglect my health and safety	.74	
Item 7	I feel guilt about things that happened during my life that cannot be excused	.63	
Item 8	Because of things that I have seen or done, I am no longer worthy of being loved	.69	
Item 11	I sometimes feel so bad about things that I have seen or done that I hide or withdraw from others	.76	
Item 12	Because of things that I have seen or done, I sabotage my best efforts to achieve my goals in life	.74	
Item 14	I am an unforgivable person because of things that I have seen or done	.73	
Item 16	I sometimes lash out at others because I feel bad about things I have seen or done	.69	
Factor 2: Other-Directed Moral Injury			
Item 2	I feel anger over being betrayed by someone who I had trusted		.55
Item 3	My experiences have taught me that it is only a matter of time before people will betray my trust		.60
Item 6	I sometimes enjoy thinking about having revenge on persons who wronged me		.50
Item 9	My experiences have caused me to seriously doubt the motives of people in authority		.67
Item 10	The moral failures that I have witnessed during my life have left a bad taste in my mouth		.72
Item 13	No matter how much time passes, I resent people who betray my trust		.64
Item 15	Things I have seen or done have caused me at times to lose faith in the basic goodness of humanity		.61
Item 17	When I look back on my life, I feel disgusted by things that other people did		.70

Note. All $p < .001$. $N = 287$. Error covariances between Items 1 and 7, and 8 and 14 were freed.

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Table S.4

Results from the Confirmatory Factor Analysis Showing Item Loadings for the MISY

Item Label	Item Content	Factor Loading				
		1	2	3	4	5
Factor 1: Commission with Agency						
Item 1	I have done things to other people that I think are wrong	.77				
Item 2	I have done things to other people that break my own personal rules about what is right and wrong	.65				
Item 3	I have done things that hurt another person	.83				
Item 4	I have done bad things to someone	.87				
Item 5	I have done things to other people that I could be punished for	.72				
Item 6	I have done harm to other people	.74				
Factor 2: Commission under Duress						
Item 7	I have been forced to do things to others that I think are wrong		.66			
Item 8	I have been forced to do things to others that break my own personal rules about what is right and wrong		.64			
Item 9	Someone else has made me do a bad thing to another person		.80			
Item 10	Even though I didn't want to, others have forced me to do hurtful things to people		.89			
Item 11	People have made me do bad things to others even when I didn't want to		.88			
Factor 3: Acts of Omission						
Item 12	I let a bad thing happen to someone when I should have done something to stop it			.74		
Item 13	There have been times when I failed to do the right thing and someone else got hurt			.81		
Item 14	There are times when I have just stood by and let a bad thing happen to a person			.77		
Factor 4: Witnessing						
Item 15	I have seen people do things that break my own personal rules about what is right and wrong				.72	
Item 16	I have seen someone do bad things to other people				.81	
Item 17	I have seen other people do bad things				.88	
Item 18	I have seen people do things I think are wrong				.84	
Factor 5: Betrayal						
Item 19	I have been betrayed by people I once trusted					.83
Item 20	Someone I trusted did something I think is really wrong					.80
Item 21	There are people who have broken my trust					.87
Item 22	I have been let down by people I thought I could trust					.88
Item 23	Someone I should have been able to trust let me down badly					.85
Item 24	There are people I used to trust, but I found out it was a mistake to trust them					.76

Note. All $p < .001$. $N = 287$. Error covariances between items 7 and 8, and 1 and 2 were freed

MEASURING CIVILIAN MORAL INJURY

Priming Statement and Exercise

Sometimes we experience an inconsistency between the people we want to be and the people we are. In today's world we often see things that violate our core beliefs on what is right. Knowing what to do and how to do it can be difficult, meaning we can fall short of living up to our moral values. Other times we may act in ways that go against what we believe to be right, intentionally or unintentionally.

The failure to make a moral difference or breaking of your own moral code can lead to feelings of distress. Moral distress is experienced differently by different people, but may cause feelings of shame, guilt, anger, anxiety or sadness, and may affect the way we see the world. These feelings may be experienced in different levels of intensity and for a short or longer amount of time, according to the moral violation/s you experience.

Please take a moment to think about some of the recent times you have experienced or saw something morally distressing or failed to act in accordance with your values of right and wrong.

Briefly describe the experience/s that have come to mind below:

Fact (what occurred?)

Feeling (what did you feel?)

Action (what did you do, or not do?)

Reason for Action (why did you act, or not act in this way?)