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Measuring Moral Injury and Treatment Response in Justice-Involved Veterans: Development and Validation of a New Moral Injury Scale

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With the explosion of Veteran Treatment Courts throughout the United States in the past decade has come more research into the effects of combat on justice-involved military service members. Posttraumatic stress disorder (PTSD) is well known and widely researched, but moral injury has emerged as an important concept in treating veterans, especially those with combat exposure. Interestingly, recent neuroimaging research has shown that PTSD and moral injury are related but distinct conditions. To explore these distinctions, psychologists and researchers at the Center for Post Traumatic Growth developed an instrument to explore moral injury and the role it plays in recovery from trauma. In collaboration with one of the longest-running felony Veteran Treatment Courts in the nation, the Moral Injury Scale (MIS) was administered at two points in time to more than 100 justice-involved veterans. Relationships between moral injury and other conditions were also examined. This article explores the primary components of the MIS, the validation of the scale, and the relationship of moral injury to other variables in a justice-involved veterans sample.

Keywords: moral injury, posttraumatic stress disorder, veterans, justice-involved, Moral Injury Scale

As the term moral injury (MI) was coined by Shay (1994) in his book *Achilles in Vietnam*, many different disciplines have made significant contributions to defining, measuring, and treating MI (Koenig, 2018; Koenig & Zaben, 2021). MI is described by Shay (1994) as the "undoing of character" that accompanies moral dilemmas often encountered in combat. MI is defined by the National Center for PTSD as experiences that are "at odds with core ethical and moral beliefs." Litz et al. (2009) defined MI as "perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations." At its core, MI is associated with deep feelings of unresolved loss, guilt, and shame—core issues which are not adequately captured by the diagnostic criteria for posttraumatic stress disorder (PTSD; DSM-V, 2013). Neurobiological studies suggest that MI and PTSD have some distinct neural correlates and may therefore have different underlying neurobiology, reinforcing the idea that MI is a distinct condition from PTSD (Barnes et al., 2019; Stein et al., 2012; Sun et al., 2019). One may have both PTSD and MI, or one of the conditions without the other; if this is the case, then using treatments developed for one condition to treat the other may not be effective or perhaps may even be harmful. Research has borne out that the typical treatments used to address PTSD are not showing efficacy in addressing MI (Steenkamp et al., 2015).

In 2013, clinicians working with combat veterans at the Center for Post Traumatic Growth noted the prevalence of MI in their treatment population and proposed a Moral Injury Scale (MIS). At this time, there were few scales to measure MI. This article aims to establish the validity and reliability of the MIS with Veterans Treatment Court (VTC) data. The relationship of MI to other variables is also explored. Unlike previous studies of MI, which have used more homogeneous samples of combat veterans, here, the participants in the VTC were a heterogeneous group of veterans. They represented different eras, different branches of service, different military occupations, and varied types of traumatic events. VTCs offer a slightly different population of veterans and may be uniquely positioned for the study of MI. VTCs share the same goals as other specialty courts, that is, the diversion of participants from incarceration to treatment services to address the underlying issues that resulted in criminal behavior. An initial study by Hartley and Baldwin (2019) demonstrated positive treatment results for justice-involved veterans participating in VTCs.

Method

Participants in the study were justice-involved veterans in the Colorado 4th Judicial District VTC in Colorado Springs, Colorado between 2016 and 2019. The VTC offered jail diversion, veteran mentor support, and treatment services to active duty and military veterans with trauma spectrum disorders charged with lower-level felonies and misdemeanors.

Participant Demographics

Demographics for VTC participants are presented in Table 1. Most participants were male (92.8%). More than half were white (56.8%). Nearly 20% reported "other" race, and 17% reported black/African American race. Hispanic ethnicity was reported by 21.1% of participants. Mean age was 35.7 years, with a range of 23–73 years. VTC

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Table 1
Demographics of VTC Participants at Baseline

Characteristic	*M*	Range
Age	37.5	23–73
	Number	%
Gender		
Male	167	92.8
Female	13	7.2
Nonbinary	0	0
Race/ethnicity		
White	100	56.8
Hispanic	36	21.1
African American	30	17
Indigenous	8	4.5
Hawaiian/Pacific Islander	3	1.7
Asian	2	1.1
Other	33	18.8
Marital status		
Married	78	41.7
Divorced/separated	70	37.4
Single/never married	25	13.4
Other	14	7.4
Households w/children	132	73.3
Languages other than English spoken at home	38	20.4
Housing		
Rent/own	126	67
Unstable	30	16
Homeless	3	1.6
Other (jail, treatment)	29	15.4
Education		
HS diploma/GED	44	24.6
Vocational	22	12.3
Some college	75	41.9
College degree	23	12.8
Advanced degree	11	6.1
Other	4	2.3
Disability		
Deaf/impaired hearing	34	18.5
Blind/impaired vision	11	6.0
Learning disability	44	24.0
TBI	72	39.8
Cognitive impairment	131	72.0
Impaired mobility	29	15.6
Impairment in performing activities of daily living	12	6.4

Note. $N = 180$. VTC = Veterans Treatment Court; HS = high school; GED = General Educational Development; TBI = traumatic brain injury.

participants reported high levels of education with 60.8% having some college or more education. More than one-third were divorced or separated (37.4%). About three-fourths were parents (73.3). Sixteen percent reported unstable housing at baseline ("couch surfing" or living with family or friends). Less than 2% were homeless. Some of the samples also reported problems with cognitive or physical symptoms such as difficulty concentrating (72%), a diagnosis of traumatic brain injury (TBI; 39.8%), or learning disability (24%). And some had problems with hearing and mobility (15.6%) deaf/hard of hearing (18.5%), and difficulty with stairs (15.6%).

Survey Instruments and Administration

The veterans completed surveys with more than 160 items addressing MI, PTSD, depression, substance use, disabilities, TBI, and other indicators at baseline and follow-up (6 months or more). PTSD was measured with the PTSD Checklist-Civilian version (PCL-C; Weathers et al., 1993). MI was measured with the MIS consisting of 20 items developed by Keenan (see Appendix). In addition, VTC participants completed the Ohio State University Traumatic Brain Injury Identification Method (OSUTBI-ID; Corrigan & Bogner, 2007) and Substance Abuse and Mental Health Services Administration items developed for all Jail Diversion Treatment Response grantees (including demographics, military history, justice-involved history, trauma history; Behavior and Symptom Identification Scale, BASIS-24; Cameron et al., 2007; CAGE Substance Abuse Screening Tool; O'Brien, 2008).

Surveys were most often administered by paper and pen while participants waited for regular court appearances during weekly dockets. Surveys were available via web link or Survey Monkey email, but the response rate was very low for this method. Participation was voluntary and confidential. Unique identification numbers were used instead of names on surveys and in the database. Respondents were incentivized with $10 gift cards to Starbucks, McDonalds, Walmart, King Soopers grocery, and so forth.

Development of the MIS

The items for the MIS were generated by three psychologists who had worked for over 12 years with veterans diagnosed with PTSD. The items reflected the statement made by veterans about their emotional suffering and distress. These psychologists observed that the veterans they were treating were describing deeper core issues that accompanied their PTSD symptoms. These issues were identified as unresolved loss, guilt, and shame, the same issues that now have been identified as MI. These psychologists developed and implemented a group treatment program designed to address these deeper core issues (Keenan et al., 2014).

These psychologists provided this group therapy treatment to hundreds of veterans over those dozen years. The veterans identified their deep guilt and shame about behaviors they engaged in, and actions taken/not taken during combat. It became abundantly clear these core issues (unresolved loss, guilt, and shame) were very emotionally and morally distressing to the veterans and were negatively affecting the veterans' views of themselves, others, and the world. Additionally, the veterans' ability to engage in their most important relationships was negatively impacted. It became clear to these psychologists that MI was a different condition from PTSD. They theorized that veterans may experience both PTSD and MI, but that the patterns of PTSD and MI were different and that veterans might experience one, but not necessarily the other. They also observed that morally injurious events (MIEs) described by their veterans occurred between people. That is, MI developed when the veterans' experienced the severing of interpersonal bonds through loss or perceived transgression. This led psychologists to a conceptualization of MI as an interpersonal problem rather than an intrapersonal problem. Shame often involves withdrawal from relationships and from society to prevent one's moral failures from being "discovered" and to avoid being ostracized by others (Keenan et al., 2014). This perspective also shaped the development of items for the MIS.

At the time the MIS was developed, there were limited references to the measurement of MI in the literature. Only Nash et al. (2013) had published a scale to measure MIEs in combat veterans, the Moral Injury Events Scale (MIES). After identifying this gap in

the literature, the psychologists elected to draft a scale to measure MI. Questions developed for the first draft of the MIS were based on interactions with morally injured combat veterans and the feelings and sentiments they shared during their treatment. Each of the psychologists independently generated a list of sentiments/beliefs that were frequently expressed by the veterans during their treatment process. These sentiments reflected the deep spiritual and emotional consequences of breaking their moral values defined by Shay (1994) and Litz et al. (2009) as MI. The item list was shared with four groups of veterans (approximately 42 veterans) engaged in treatment groups in the PTSD clinic, and they were asked to endorse the feelings/beliefs they frequently experienced (at least twice per month) and provide feedback to the psychologists about the items on the scale. The 20 items included on the scale were the most frequently endorsed statements and beliefs.

The MIS consisted of 20 items with five response options on a scale from 1 to 5: (1) *not at all*, (2) *a little bit*, (3) *moderately*, (4) *quite a bit*, or (5) *extremely*. Thirteen of the items on the scale are reverse-keyed. The lowest possible total score on the MIS was 20, and the highest possible score was 100. As MI is a condition that can vary on a continuum of severity, standard deviations (*SD*s) above and below the mean were calculated for both baseline and follow-up scores to determine the range of MI scores in the sample (Table 2). The sample was divided into three groups reflecting severe MI (one *SD* above the mean), moderate MI, and mild MI (one *SD* below the mean). The number of VTC participants that fell into each category of MI scores at baseline and follow-up is included in Table 2.

Results

Validation of the MIS

For a scale to be viable and useful, its validity must be established. Validity affirms that the scale measures what researchers think it measures. Validity consists of multiple measures, including face validity, construct validity, and concurrent validity. Face validity, as the name implies, is a measure of how representative the scale is "at face value" of the issue that is the focus of the scale. Does it appear to be a good measure of MI as conceived? Construct validity, or how well a scale measures what it says it is measuring, was also assessed. To determine whether the scale measures what it intended, a principal component analysis (PCA) was conducted. The responses given by the veterans provided the basis for determining how well the items hang together into different groupings called components. Analysis of construct validity showed that the MIS consisted of four distinct constructs and the MIS items were not measuring the same things based on low correlations between the items, therefore items were not eliminated, and no additional items were required. Please see the Appendix for the MIS.

Table 2
Number of Veterans in MI Categories Mild, Moderate, and Severe at Baseline and Follow-up

Categories of MI	Baseline	Follow-up
Number of subjects (*n*)	175	115
Mild (score of 20–32)	36	28
Moderate (score of 32–59)	107	56
Severe (score of 60–100)	32	31

Note. MI = moral injury.

Table 3
Principal Components From Moral Injury Scale Items

Principal component analysis	Moral Injury Scale items
Intrapersonal Connectedness	I take pride in my service. I am a moral person. I have done everything I could to help others. I deserve to be loved. I deserve good things in life. I believe I am a good person. I have made the world a better place. I deserve recognition for what I have done. I have people who love me.
Self-Condemnation/ Shame	I feel I have committed evil acts. I feel dirty because of things I have done. I feel inhuman. I deserve to be punished. If others knew me, they would hate me. I often wish I were dead.
Social Connectedness	I am understood by the important people in my life. I feel my life has meaning and purpose. I am emotionally connected to people.
Self-Forgiveness	I deserve forgiveness and compassion. I have forgiven myself for my mistakes.

PCA

The PCA yielded four components. With varimax rotation, 61% of the total variance in the scores was explained. The individual scale items for each component are presented in Table 3. The Kaiser–Meyer–Olkin measure of sampling adequacy was .891, and Bartlett's test of sphericity chi-square was significant ($p < .001$) ($df = 153$).

In the initial PCA run, the system generated the ideal number of components when the eigenvalue was ≥ 1.0. An eigenvalue is a measure of how much of the variance of the observed variables (MI items) a component explains. Any component with an eigenvalue ≥ 1 explains more variance than a single observed variable. Table 3 contains the results of the PCA run. The suggested number of components is four. The MI items in each component are identified by examining the highest scores in the rotated component matrix.

Concurrent validity, achieved when a scale correlates well with a previously validated measure, was established with the PCL-C. The MIS correlated well with the PCL-C at baseline ($r = .394$) and was significantly different ($p < .01$) with two-tailed tests. The MIS also correlated well with the PCL-C at follow-up ($r = .530$) and was significantly different ($p < .01$) with two-tailed tests. Results suggest that the MIS achieved concurrent validity with the PCL-C.

Correlation analysis was conducted to determine whether there were any MIS items that were very highly correlated (i.e., Pearson's $r = .80$ or higher). High correlation suggests that items might be measuring the same thing. None of the MIS items were highly correlated. Next, clinicians were asked to independently review the items for each component and characterize their content with a label. They then compared their labels that were quite similar and assigned the following labels to the components: (a) Intrapersonal Connectedness, (b) Self-condemnation/Shame, (c) Social Connectedness, and (d) Self-Forgiveness.

Exploratory Factor Analysis

Exploratory factor analysis (EFA) was used to determine whether there are other combinations of MIS items that can be combined into more predictive and explanatory models. The analysis is similar, but the method of multidimensional rotation is different in that it assumes oblique rotation in which the factors are correlated. In PCA, the factors are manipulated in the orthogonal rotation that assumes the components (i.e., factors) are not correlated.

This EFA also resulted in four factors with the same items in the PCA analysis. A three-factor or five- or more factor solution did not result in more variance explained. Additionally, there was no indication that any of the scale items should be eliminated primarily because they were all defined by rigorous validity checks. The four-component/factor solution provides evidence of a useful, reliable, and valid measure of MI. Please see Table 4 for the results of the PCA.

Reliability of the MIS

Reliability of the MIS was assessed with consistency, split-half reliability, and test–retest reliability. Consistency is the degree of consistency in the scale. Will the same results be obtained when the scale is used again? Cronbach's alpha was .904 for the scale indicating that it is a highly internally consistent scale. In other words, the scale items are closely related to each other. Internal reliability, measured with split-half reliability, is the extent to which all parts of the scale contribute to what is being measured by randomly splitting the sample in half and running a correlation between each half. The Spearman-Rho coefficient in this calculation was .818 indicating a strong correlation between the two random groups. This also suggests strong reliability of the MIS.

Test–retest reliability or external reliability (when the scale is administered to individuals not in the study or to other individuals who may be providing judgments on a measure) is a type of reliability that is conducted when it is possible to readminister a scale to participants a second time. In the MIS study, the scale was administered to VTC participants at baseline when they entered the VTC and after 6 months or more in the program. It was predicted that the MI scores would be lower or improve with VTC participation and treatment. The baseline MIS mean was 46.67. The follow-up MIS mean was significantly lower, as hypothesized, at 44.18 ($p < .05$).

VTC Results

There were 311 total responses to surveys over 3 years. Baseline measures were obtained at the time they were admitted to the VTC (n =189). However, only 180 surveys were used in this analysis due to the attrition of veterans from the program. Follow-up surveys were administered after 6 months or more in the program ($n = 122$). VTC participants with both a baseline and a follow-up survey totaled ($n = 111$). Participants with all survey items completed varied by instrument within the total assessment survey.

One hundred and seventy-five VTC participants completed the baseline MIS measurement and 110 completed the follow-up assessment. However, the total number of VTC participants that completed both baseline and follow-up MIS was ($n = 102$). For these individuals, paired samples t tests were conducted. Results at baseline ($M =$ 46.67, $SD = 14.94$) and follow-up ($M = 44.18$, $SD = 13.77$) indicate that MI improves significantly over time with VTC participation in the treatment court interventions, $t(102) = 2.294$, $p = .024$. Table 5 provides the range of scores on the MIS at each point in time.

PTSD was measured using the PCL-C which consists of 17 items representing three categories of symptoms: reliving, avoidance, and arousal. Response options on a scale from 1 to 5 included: (1) *not at all*, (2) *a little bit*, (3) *moderately*, (4) *quite a bit*, or (5) *extremely*. The lowest possible total score on the PCL-C was 17, and the highest

Table 4
Results of the Principal Component Analysis

	Initial eigenvalues			Extraction sums of squared loadings and rotation			
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total
1	7.483	37.413	37.413	7.483	37.413	37.413	3.583
2	2.219	11.093	48.506	2.219	11.093	48.506	3.262
3	1.519	7.597	56.130	1.519	7.596	56.130	3.226
4	1.405	5.271	61.347	1.405	5.271	61.347	2.203
5	.920	4.602	65.977				
6	.896	4.345	70.322				
7	.736	3.678	73.999				
8	.674	3.369	77.369				
9	.614	3.069	80.438				
10	.558	2.792	83.230				
11	.540	2.701	85.931				
12	.452	2.258	88.189				
13	.421	2.105	90.294				
14	.408	2.042	92.336				
15	.375	1.875	94.211				
16	.343	1.717	95.928				
17	.335	1.674	97.602				
18	.270	1.350	98.953				
19	.209	1.047	100.00				
20	3.631E−17	−1.815E−16	100.00				

Note. Extraction method: principal component analysis.

Table 5
Moral Injury Scale Scores

Moral injury scale administration	*N*	Minimum	Maximum	*M*	*SD*
Baseline	175	20	87	46.67	14.94
Follow-up	110	20	87	44.18	13.77

possible score was 85. Scores were summed to determine symptom severity. The clinical cutoff for PTSD diagnosis was 50 or above. A total of 80 VTC participants completed baseline PCL-C, and VTC participants who completed all 17 items at both baseline and follow-up were 111.

Scores for PTSD symptoms and severity on the PCL-C were at the clinical level for diagnosis (50 points or more) for 57.1% of participants at baseline. At follow-up, the PTSD diagnosis of participants had dropped to 47.7%. Together, 111 VTC participants had complete PCL-C assessments at both baseline and follow-up. For these individuals, paired samples *t* tests were conducted. Results at baseline ($M = 53.56$, $SD = 17.95$) and follow-up ($M = 47.30$, $SD = 17.25$) indicate that PTSD improves significantly over time with VTC participation, treatment, and supports $t(111) = 4.512$, $p = .001$. Table 6 contains PCL-C scores at baseline and follow-up.

When MI scores were explored by additional variables, those with severe MI scores (60+) were more likely to report prior convictions and jail time (57.1%) than those with moderate or mild MI (48.2%), report unstable housing (24.1%) than those with moderate or mild MI scores, (15.1%), more likely to report depression in the past 30 days, (89.7%) than those with moderate to mild MI scores (65.7%), more likely to report "fair" or "poor" health (40.6%) than those with moderate to mild MI scores (19.5%), and more likely to report a TBI diagnosis (48.3%) than those with moderate to mild MI scores (35.3%).

Those with MI scores in the severe range (60+) were less likely to "agree" or "strongly agree" that they belong in the community (6.9%) than those with moderate to mild MI scores (66.4%) and slightly less likely to report illegal drug use within the past 30 days (10.7%) than those with moderate to mild MI scores (11.2%). Ninety-six percent of those with severe MI scores reported having combat deployments.

Discussion

MIS Results

The items developed by clinicians for the MIS yielded a valid and reliable instrument with four distinct components: Intrapersonal Connectedness, Self-Condemnation/Shame, Social Connectedness, and Self-Forgiveness. The scale has strong face validity and construct validity because veterans' statements about their subjective experience of MI were used to generate the items on the scale. Although items on each scale correlate well for concurrent validity, the scale also had strong convergent and divergent validity. PCL-C scores and MIS scores were correlated as one would expect and correlation diverged enough to indicate that the PCL-C and the MIS are measuring different constructs. The MIS also showed strong internal consistency and general reliability, although more testing is needed to confirm these findings. These preliminary findings show that the MIS has promise as a measure that can capture change in MI outcomes with therapeutic intervention. It may also guide therapeutic interventions which target the need to address particular areas of suffering based on the four components of MI.

Table 6
PCL-C Scores at Baseline and Follow-up

PCL-C administration	*N*	Minimum	Maximum	*M*	*SD*
Baseline	180	17	85	53.56	17.95
Follow-up	111	17	85	47.30	17.25

Note. PCL-C = PTSD Checklist-Civilian version.

The MIS differs in some significant ways from the other currently published instruments developed to measure MI. There are currently six published scales developed to measure MI in veterans. The MIES (Nash et al., 2013); the Moral Injury Questionnaire (MIQ; Currier et al., 2015); and a shorter version of the MIQ called the Modified Moral Injury Questionnaire (MMIQ; Currier et al., 2020); The Moral Injury Symptom Scale (MISS; Koenig et al., 2018); the Expressions of Moral Injury Symptom Scale (EMIS; Currier et al., 2018), and the Moral Injury Outcome Scale (MIOS; Litz et al., 2021).

One way the MIS differs from most of these other scales is the method used to generate the scale items. The MIS items were developed by gathering 12 years of direct statements from hundreds of veterans describing their feelings and beliefs about themselves, others, and the world after experiencing MIEs. In other words, these statements reflected veterans' subjective experience of suffering with MI. These statements were then shared with veterans who provided feedback about the items and endorsed the items that they most frequently experienced. These items are included on the scale. Previously published scale items were generated by the researchers/subject matter experts based on their expertise and experiences with veteran populations and reviews of the literature. Only the MIOS has used a similar "bottom-up" method of generating items. This ensures strong face validity and construct validity. The items were developed without direct input from veterans themselves, which is a significant limitation regarding construct validity.

Second, the items on the MIS were aimed at capturing the "subjective experience" of MI. That is, how MI "feels" to the morally injured person. The early MISs focused on exposure to MIEs. Theoretically, this limited these scales to correlations with other factors, symptoms, and diagnoses (MIES; Bryan et al., 2016; Nash et al., 2013; MIQ/MMIQ; Currier et al., 2015), but these scales could not capture shifts in the internal experience of MI. The MIS demonstrated that "improvement" in MI could be captured by the decrease in MI scores with treatment interventions. Currently, the MIS is the only scale that has data demonstrating the ability to measure treatment outcomes, that is, shifts in MI scores following treatment intervention. The more recent scales (MISS, Koenig et al., 2018; EMIS, Currier et al., 2018; MIOS, Yeterian et al., 2019 and Litz et al., 2022) have moved toward including items capturing symptoms associated with MI and some subjective experiences related to MI. These scales are more likely to reflect change or improvement in MI with treatment intervention. Further investigations will be needed to evaluate how the MIS performs versus other measurements of MI over time in veteran populations.

Third, the other scale items are explicitly tied to combat MI and therefore can only be used in this specific population. The MIS items and components are not tied to any specific population and therefore make it a potentially useful scale for use in other diverse populations suffering MI. However, the validity and reliability of the scale will have to be tested in other populations.

Finally, the MIS shows strong validity and reliability using 20 items that are not correlated with one another but have strong internal consistency. Both the EFA and the PCL suggested that none of the items were measuring the same thing, and none had to be eliminated. Both analyses arrived at the same four-component model. The 20 items scale has strong validity and is therefore a shorter scale that captures the subjective experience of MI well. The shorter scales make administration less burdensome on subjects. Some of the previous scales contained many items making administration of the instrument cumbersome for subjects to complete. Since then, other "short versions" of these scales have been developed to address this issue.

The MIS has four distinct and meaningful subscale components that appear to provide unique information about the intrapersonal and interpersonal aspects of MI. These subscales may be useful in targeting specific areas for treatment focus. For example, high subscale scores on the Self-Condemnation/Shame scale may suggest shame may be a key area of intervention in addressing MI for some individuals. Likewise, the Self-Forgiveness items may point to the need to use interventions aimed at developing forgiveness for oneself. Whereas high scores on the Social Connectedness subscale would suggest the need to work on one's connectedness to others. Finally, higher scores on the Intrapersonal Connectedness subscale might focus interventions on improving one's overall self-esteem.

VTC Results

The consequences of MI have been well-studied in different populations (Koenig & Zaben, 2021); however, the consequences of MI and its relationship to other variables have been understudied in justice-involved veterans (Griffin et al., 2019). This study provided important and valuable preliminary findings regarding how MI may interface with other challenges evident in justice-involved veterans such as legal, health, housing challenges, and disconnection from their communities. This population also endorsed very high exposure to traumatic events before, during, and after their military service. Ninety-seven percent of VTC participants reported childhood, loss, neglect, and abuse, suggesting this is an especially traumatized population. MI is likely an extremely important condition to address in treatment with this population and maximize rehabilitation and decrease possible recidivism (Slattery et al., 2013).

Both PTSD and MI were present in this sample of veterans. As noted earlier, MI and PTSD can occur together, or veterans may have one of these conditions without the other. Both MI and PTSD improved significantly over time and with the VTC treatment experience. There was a significant decrease in MI scores at baseline and follow-up demonstrating that the MIS can capture changes in the severity of MI with different treatment interventions. The MIS also reflected that nearly all the veterans with combat deployments fell into the severe MI category indicating that those with combat exposures are more likely to develop MI and the severity of this condition may be worse in those with combat exposure. Furthermore, those with severe MI are more likely to suffer other challenges or conditions. Those with severe MI were more likely to report more convictions and jail time, they were more likely to have unstable housing, they were more likely to have fair/poor health, they were more likely to have a diagnosis of TBI, they were more likely to experience depression and feel less connected to their communities than those with mild-to-moderate MI. Interestingly, those with severe MI were less likely to report illicit drug use in the last 30 days than those with mild-to-moderate MI scores. One hypothesis for this may be that those with more severe MI would likely have a higher level of shame and self-condemnation and therefore may be less willing to admit to more shameful activities than those with mild or moderate MI. This could be teased out with another analysis of the data correlating the MIS subscales with other variables. Thus, this particular measure of MI can provide even more specificity regarding aspects of MI that may be important for understanding MI and its consequences and perhaps even suggest what treatment interventions to employ. Use of the MIS in conjunction with other scales that measure traumatic experiences, such as the PCL-C, may allow clinicians to understand and more appropriately intervene with other populations with complex needs and presentations such as justice-involved veterans.

Future Directions

The study of MI in justice-involved veterans is an understudied topic and one that needs more research. The relationship of MI to other factors that increase justice involvement is complicated, and much more research is needed. Addressing other factors facing this population such as addressing PTSD and MI in VTC veterans as well as support in improving health, stability of housing, engagement in mental health treatment, and community support may help to mediate future justice involvement. As noted earlier, Slattery et al. (2013) found that 97% of the justice-involved veterans in their sample suffered childhood neglect, loss, and abuse. Suggesting a real need for more studies to address PTSD and MI in this population if we are to succeed in rehabilitation and decrease recidivism.

Another area of further study is to assess whether the effects of MI on veterans contributed to or increased their risk for engaging in behaviors that violate the law. One way to evaluate this would be to explore MIS scores in both justice-involved and nonjustice-involved veterans/combat veterans. Finally, further studies investigating the MIS's validity, reliability, and utility with other populations are needed to establish the MIS as an important tool in addressing MI.

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(*Appendix follows*)

Appendix

Moral Injury Scale

Instructions: Below are a series of feelings common among people of service who have been exposed to traumatic situations. Please mark each statement as it pertains to your feelings, indicating the degree to which you feel the statement is true about you.

	*Not at all* (1)	*Slightly* (2)	*Somewhat* (3)	*Mostly* (4)	*Definitely* (5)
I believe I am a good person					
I feel my life has meaning and purpose					
I have made the world a better place					
I deserve good things in life					
If others really knew me they would hate me					
I feel dirty because of things I have done					
I deserve to be loved					
I am a moral person					
I deserve forgiveness and compassion					
I feel I have committed evil acts					
I take pride in my service					
I deserve recognition for what I have done					
I often wish I were dead					
I deserve to be punished					
I have done everything I could to help others					
I have forgiven myself for my mistakes					
I am emotionally connected to people					
I have people who love me					
I am understood by the important people in my life					

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