RESEARCH ARTICLE

Adaptation of Moral Injury Scale Into Turkish Culture

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ABSTRACT

This study aims to investigate the validity and reliability of the Turkish version of the Moral Injury Scale. The Moral Injury Scale is a 5-Point Likert Type Scale and consists of 14 items and two subdimensions. The form items created on the Google Form were applied to 157 people after obtaining the necessary permission. At the beginning of the adaptation process of the scale to Turkish culture, necessary permission was first obtained from the responsible author through e-mail. After obtaining permission, the original scale items were translated from English into Turkish by five independent experts. And the translation process was continued through the panel work of the postgraduate students. Later, the Turkish form was translated back into English by two experts and a pilot study was conducted with a group of 30 participants so that the linguistic understandability of the items could be tested. The final version of the Turkish form was created based on the feedback obtained during the pilot study and with the support of a linguist. Based on the feedback obtained during the pilot study and with the support of a Turkish language expert, the final version of the Turkish form was created for the application. In the Confirmatory Factor Analysis conducted to test the structural validity of the Turkish version of the scale, the values related to the Goodness of Fit Indices were $X^2 = 127.788$, sd = 76, and X^2/sd ratio was 1.68; and the RMSEA value was found to be .06. GFI and CFI, which are indicators of model-data fit, were calculated as .89 and .90, respectively, and RMR was calculated as .07. When the fit and failure indices of the Turkish form of the scale were examined, it was seen that the structural validity of the scale was ensured and the resulting findings confirmed the model.

The idea that people are psychologically affected by their own actions and the behavior of others is almost as old as human history (Litz et al., 2022). This idea has brought many concepts to the present day, and one of them, which is "morality," is defined by the Turkish Language Association (TDK, 2019) as the behavioral patterns that individuals in a society have to respect. According to Aydın (2003), morality determines the best behavior. The concept of moral injury was first identified by Shay (1994), a military psychiatrist, in Vietnam War veterans. When an individual acts contrary to his/her moral values or fails to act in accordance with his/her moral values, it is defined as "moral injury" by Litz et al. (2009). And similarly, moral injury is also defined as an internal conflict used to describe the psychological, ethical and/or spiritual conflict experienced when an individual's basic sense of humanity is violated (Drescher et al., 2011). Moral injury is also known as "Psychological Injury" (Koenig et al., 2108). Moral injury occurs as a result of Potentially Morally Injurious Events (PMIEs) (Griffin et al., 2019). Figley, a Vietnam veteran and a professor specializing in Trauma Studies, in his book "Compassion Fatigue" talks about the impact of secondary traumatic stress experienced by front-line workers on moral pain (Papazoglu & Chopko, 2017), which confirms the idea that moral injury includes symptoms of Post-traumatic Stress Disorder (PTSD) (Litz et al., 2009). The first studies on moral injury were conducted on veterans, and revealed that these soldiers took actions that contradicted their own values and beliefs about the world, and also that the traumatic experiences they went through caused moral injury (Frankfurt & Frazier, 2016). Considering that healthcare workers are traumatized especially during epidemic periods (MacAlonan, 2007), recent studies on moral injury were mainly related to COVID-19 and healthcare workers working during the 2020 COVID-19 epidemic.

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Moral Injury is approached from two different perspectives. One of these perspectives is the development of moral emotions, such as guilt and shame. These emotions include the behavior in which the person acts, or the times when the person does not take the action that should be taken. On the other hand, the individual cannot reveal his/her morally appropriate feeling in the face of the situation he/she is experiencing (Dobos, 2016). Thus, moral feelings come to the surface in a strong way while in the second case they are dampened. In addition to these situations, a moral injury does not only occur through the actions of individuals themselves, but can also occur through witnessing the experiences of those who may or may not be able to take action. Due to its conceptual framework, moral injury includes individuals who are constantly exposed to trauma, such as soldiers and veterans. However, studies on moral injury have recently been conducted on healthcare workers due to the impact of COVID-19 (Coady et al., 2021). In a study conducted on healthcare workers in the United States (Amsalem et al., 2021), anxiety, depression, and PTSD were detected, and these disorders were associated with the concept of moral injury. Another study was carried out on individuals and healthcare workers exposed to the COVID-19 Pandemic Period (Lindert, 2021).

In the introduction to the article titled "Moral Injury in Times of COVID-19," Williams et al. (2020) described the moral challenge experienced by a healthcare worker as follows: When the virus first emerged, a married patient in her 60s, a long-term smoker, was in a situation where death could occur at any moment. His wife was begging to see her husband, but the hospital would not be flexible on any of the rules. At this point, a question arises as to what it might cost a person to do his/her duty by saying "no" to a woman, whose husband is about to die and who continuously begs for help. In addition, the unequal access to essential medicines in the event of a crisis or epidemic, and the chaotic environment created by the relativity of optimal care, lead to moral injury among health workers.

In addition to studies on what causes moral injury, there are also studies on what moral injury leads to. When 49 studies involving 23,300 people are examined, a linear relationship is found between moral injury and both mental and behavioral conditions such as PTSD, depression, anxiety, suicide, substance use, pain–burnout–sleep disorder, and treatment-seeking behaviors (Hall et al., 2022). Although the symptoms of moral injury are similar to those of PTSD, Barnes et al. (2019) reported that a different part of the brain is active during moral injury compared to other traumatic events. Unlike PTSD, moral injury is associated with shame and guilt rather than fear and anxiety (Bryan et al., 2018). In the context of all these studies, moral injury stands out as a concept that still has new and unexplored dimensions in literature. When the studies on moral injury are considered, the lack of adaptation of a measurement tool to Turkish culture stands out. Therefore, the primary goal of this study is to adapt the Moral Injury Scale developed by Litz et al. (2022) to Turkish culture and to investigate its psychometric properties.

Method

In this section, information about the study group, data collection tools, and the procedures performed in the adaptation of the scale into the Turkish language are given.

Study Group

The data for this study were collected online through Google Forms. The participants consisted of 157 people between the ages of 20–60, in professions such as psychologists, police, soldiers, and health professionals (doctors, nurses, caregivers, etc.). 71.3% of the participants were female (n = 112) and 28.7% were male (n = 45). The average age of the participants was 24 and the standard deviation was .82. 85.4% (n = 134) of the participants belonged to the sector of psychological health, 7% (n = 11) belonged to the group of healthcare professionals and 7.6% (n = 12) belonged to the police/military occupational group.

Data Collection Tools

Personal Data Form. This form, which was developed by the researchers, consists of three sociodemographic questions regarding the occupation, age, and gender of the participants.

Moral Injury Scale. The Moral Injury Scale (MIS) developed by Litz et al. (2022) is a 14-Item, 5-Point Likert Type Self-assessment Tool. The scale has two subdimensions titled "Shame" and "Loss of Confidence." The scale ranges from 14 to 70, and a high score indicates a high level of experience with moral injury. Litz et al. calculated the Internal Consistency Coefficient of the MIS as .90 for the scale, .90 for the subdimension titled "Shame," and .78 for the subdi-

mension titled "Loss of Confidence." Confirmatory Factor Analysis (CFA) was conducted in order to measure factorial validity using structural equation modeling techniques. The results obtained from the fit indices and factor loading, in addition to the t values and factor interrelationships, supported the two-factor structure of the scale. The MIS is scored by summing the points corresponding to the answers given to each item. In order to be able to discuss the presence of signs of moral injury that the items of the scale are based on, the item in question should be marked as "Strongly Disagree" (1), "Disagree" (2), "Neither Agree nor Disagree" (3), "Agree" (4), and "Strongly Agree" (5).

Secondary Traumatic Stress Scale (STSS). The STSS developed by Bride et al. (2004) is a 17-Item, 5-Point Likert Type Assessment Tool. The scale has three subdimensions titled "Emotional Violation," "Avoidance," and "Arousal." The scale ranges between 17–85 with a high score indicating a high level of exposure. Bride et al. calculated the Internal Consistency Coefficient of the STSS for the scale as .94 and for the "Emotional Violation," "Avoidance," and "Arousal" subscales as .83, .89, and .85, respectively. In the CFA conducted in order to measure factorial validity using structural equation modeling techniques, the results obtained from the fit indices and factor loading, t values, and factor interrelationships supported the three-factor structure of the scale. The STSS is scored by summing up the points corresponding to the answers given to each item. In order to be able to discuss the presence of PTSD symptoms that the scale items are based on, the relevant item should be marked as "Never" (1), "Very Rarely" (2), "Occasionally" (3), "Frequently" (4), and "Very Frequently" (5). In addition, to discuss the presence of these PTSD diagnostic criteria, at least one of the items measuring "Emotional Violation," at least three of the items measuring "Avoidance Symptoms," and at least two of the items measuring "Arousal Symptoms" should be marked as "occasionally" or more.

Process

In this study, data collection occurred after necessary permissions were obtained. The original name of the MIS is the Moral Injury Outcome Scale (MIOS) and the language used in the scale is English. It was developed by Litz et al. (2022) in the United States. In the process of adapting the scale to the Turkish language, first, Litz, who developed the scale, was contacted through e-mail, and the linguistic equivalence studies started after obtaining permission from the researchers who has first developed the scale. In the first stage, the English version of the scale was translated into Turkish independently by five people who have good command of the English language. Then, a panel study conducted by postgraduate students agreed on the final version of the Turkish version. Afterwards, the Turkish version was back-translated by two experts, and the consistency between the Turkish version and the original English version was examined. A pilot study aimed at testing comprehension in terms of content and meaning was conducted with a group of 30 participants. After the completion of the pilot study, the final Turkish version was reviewed by an expert for the last time. After completion of the translation stage, a similar scale was determined for fit validity, and the items created on the Google Form were applied to 157 participants. According to Nunnally (1978), it is considered adequate to collect data from sample groups that are 10 times the number of items. In order to determine the validity of the MIS, structural validity and criterion-based validity were examined. For criterion-based validity, the correlation between the MIS and the STSS was calculated. The reliability of the MIS was examined by using the Internal Consistency Coefficient (Cronbach's alpha). Confirmatory Factor Analysis (CFA) was conducted to test for structural validity.

Findings

The study on the validity and reliability of the measurement tool consists of two stages. In order to examine the validity of the measurement tool, a CFA analysis was conducted using the AMOS 24 software.

Findings on Validity

When the CFA results of the MIS were analyzed, it was found that the t values and χ2 values were meaningful at the .01 level. When the χ2 and sd values of the fit indices were proportioned to each other, it was observed that the χ2/sd (127,788/76) value was 1.68. When the obtained RMSEA value was considered, it was observed that it had a fit index at the level of .05. When other fit indices were examined, it was observed that GFI was .89 and the CFI was .90. When the standardized RMR value was examined, it was observed that the fit index was .07. CFA was used to determine whether the MIS is capable of measuring the structure that it is intended to measure. The fit values related to CFA are given in Table No. 1.

Table 1

Shows the CFA Fit Indices are Adequate and the Mismatch Indices are as Expected

Table No 1
Confirmatory Factor Analysis Goodness of Fit Values of MIS

	Chi-square	Sd	Chi-square/sd	GFI	CFI	RMSE	RMR
Structure With Two Subdimensions	127.788	76	1.68	.89	.90	.06	.07

Subdimensions of the Moral Injury Scale: Factor 1 = Shame, Factor 2 = Loss of Confidence

Figure 1. *Moral Injury Scale Confirmatory Factor Analysis Diagram*
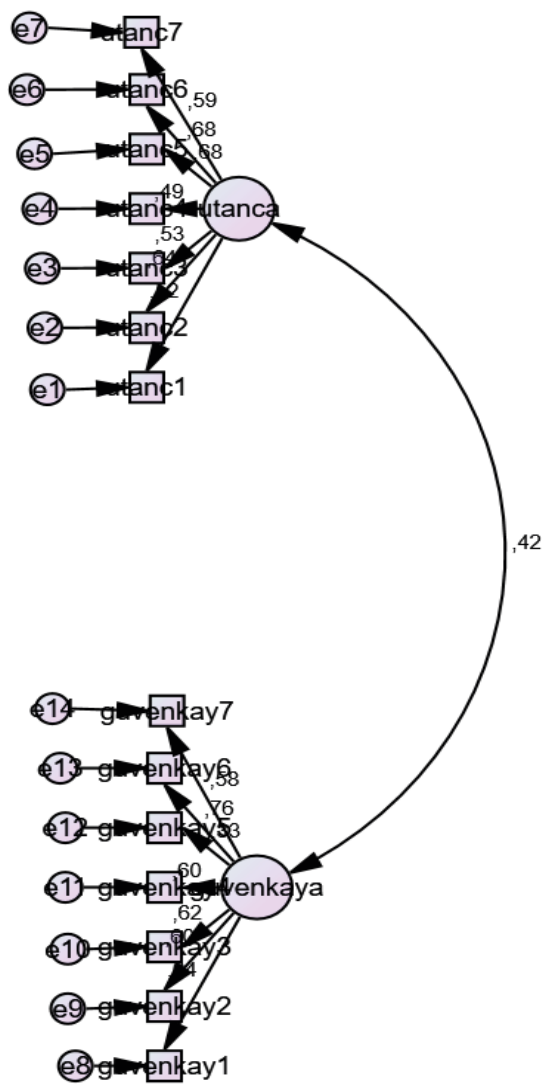
Structural Validity

The structural validity of a scale is tested by examining the correlation between the subscales that make up that scale. For this purpose, the correlations between the subscales of the MIS were calculated, and the results are presented in Table No. 2.

Table 2.
Correlation Between MIS and Its Subdimensions

Subdimensions	Shame	Loss Of Confidence
Shame		.68**
Loss of Confidence	.68**	

Criterion Validity

The STSS was applied in order to assess the criterion-based validity of the MIS and the findings showing the correlation coefficients between the scales are presented in Table No. 3.

Table 3.
Correlations Between MIS and STSS

	Secondary Traumatic Stress Scale
Moral Injury Scale	.64

The correlation between MIS and STSS is positive and meaningful at the level of .001.

The criterion validity of the measurement tool was examined by using the STSS. There is a significant correlation at the level of .64 between MIS and STSS. According to these results, it can be said that the scale meets the criterion validity.

Findings on Reliability

In order to determine the reliability of the MIS, Cronbach's α Reliability Analysis was calculated for the entire scale, and the Internal Consistency Coefficient of the reliability of the scale was found to be .81. The value obtained for a measurement tool on 14 items is at a satisfactory level. Therefore, when Cronbach's alpha value is .70 and above, it is considered sufficient for the reliability of a measurement tool (Büyüköztürk, 2011). Reliability coefficients, average, and standard deviation values related to the Internal Consistency of the MIS are presented in the following table.

Table 4.
Reliability Value of MIS and Standard Deviations With Average Scores

	Cronbach Alpha	$\bar{x}$	ss
MIS	.81	30.85	7.53

Table No. 4 shows that the Internal Consistency Coefficient of the scale is above .70, and this value is considered sufficient for the reliability of the measurement tool (Büyüköztürk, 2011).

Table 5.

Reliability Values of Shame Subdimension and Loss of Confidence Subdimension of MIS and Standard Deviations With Average Scores

	Cronbach Alpha	x̄	ss
Shame	.76	12.53	4.02
Loss of Confidence	.78	18.32	5.14

Table No. 5 displays the Internal Consistency Coefficients of the subdimensions of the scale to be above .70. This value is considered sufficient for the reliability of the measurement tool (Büyüköztürk, 2011).

Discussion

The aim of this study was to adapt the MIOS developed by Litz et al. (2022) into the Turkish language. In this study, the language validity of the scale was first tested. In the literature, the correlation coefficient calculated for validity varies depending on the feature for which a relationship is sought. Correlations of .30 and higher calculated with regard to validity are considered an indicator that the test is valid (Büyüköztürk, 2010). Accordingly, this testifies that the scale meets the language validity requirements.

The structural validity of the scale (MIS) was tested with using CFA, and the values related to the Goodness of Fit Indices were calculated as $\chi 2 = 127.788$, sd = 76, and $\chi 2/sd = 1.68$. When chi-square/sd below 3, it indicates perfect fit, and when it is below 5, it indicates moderate fit (Kline, 2005). The RMSEA value was found to be .06; a value less than .05 indicates a perfect fit, less than .08 indicates a good fit, and less than .10 indicates a moderate fit (Tabachnick & Fidel, 2001). Additionally, when GFI and CFI, which are also indicators of model-data fit, are higher than .95, it corresponds to an excellent fit, and when they are higher than .90, it corresponds to a good fit (Hooper et al., 2008). These indices were .89 and .90 for the MIS, respectively. When the standardized RMR index is below .05, it corresponds to a perfect fit, when it is below .08, it corresponds to a good fit, and when it is below .10, it corresponds to a poor fit (Brown, 2006). The RMR index value of the scale was calculated and found to be .07.

When the fit and error indices of the scale are examined, the structural validity of the scale is achieved. In other words, it is accepted that the scale items can measure the latent variable of moral injury. In the study conducted for the criterion-based validity of the scale, a statistically meaningful positive correlation was observed between the MIS and STSS ($r = .64$, $p < .001$).

In conclusion, the factor structure of the MIS was tested in terms of reliability and validity for the Turkish sample, and the results confirmed the structural model. The Turkish version of the scale reveals the level of moral injury of frontline workers and individuals in other professions in Turkey, and can be used in future related studies.

As a result of traumas or secondary traumas, PTSD usually occurs due to the distress experienced. However, moral injury, which has been particularly studied in recent years, also occurs as a result of these traumas. The available study findings suggest that only witnessing a moral injury event can increase the risk of PTSD, depression and suicidal ideation (Nieuwsma et al., 2021). Moreover, the results of this study suggest that moral injury occurs at different levels of psychopathology, based on whether it is caused by the actions of another person or by the individual's own actions. This result is in line with another study conducted by Hoffman et al. (2018). Psychological conditions are known to affect mental development (Thermos, 2020). One of the key findings of this study is the direct relationship between the reactions given in the face of difficulties in life and the psychological structure of the individual. The authors of this article believe that the concept of moral injury plays a significant role in understanding how individuals do not only show psychosomatic symptoms due to the traumas they have experienced. This article will aid in disseminating what is already known about moral injury and bring widespread recognition to a phenomenon that is experienced by many people. Ideas about values, universal and personal morality, humanity, and spiritual dimensions are also affected as a result of traumas and individuals need to develop awareness about them.

It is also necessary to mention some limitations of this study. First of all, conducting new studies in which this adapted scale will be used can make significant contributions to the scale's capacity to measure. Finally, in order to determine the fit validity of the scale, the relationships between the MIS and scales that assess various psychological and traumatic structures that may be related to moral injury, and whose validity and reliability are proven, can be examined.

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