Social Isolation of War Veterans with Post-Traumatic Stress Disorder Based on Emotional Inhibition: The Mediating Role of Rejection Sensitivity

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Abstract

War veterans experience significant social isolation due to problems in their cognitive-emotional process. Therefore, the present study aimed to determine the mediating role of sensitivity to rejection in the relationship between emotional inhibition and social isolation in veterans with post-traumatic stress disorder (PTSD). In this descriptive and correlational research, 300

veterans with PTSD, admitted and treated at Isar Psychiatric Hospital in Ardabil, Iran, in 2022, were selected as a targeted sample and investigated throughout the process. The study made use of Russell's Social Isolation Scale (1996), Kellner's Emotional Inhibition Questionnaire (1986), and Berenson et al.'s (2009) Rejection Sensitivity Questionnaire for data collection. They were then analysed utilising Structural Equation Modeling (SEM) using SPSS and Lisrel 8.8 software. The results confirmed the causal relationship between emotional suppression, rejection sensitivity, and social isolation in veterans with PTSD based on various fit indices. Inhibition of emotion and sensitivity to rejection directly affected the social isolation of veterans with PTSD. Moreover, emotional inhibition through sensitivity to rejection indirectly affected the social isolation of veterans with PTSD (P<0.05). Therefore, emotional inhibition and sensitivity to rejection play a vital role in the social isolation of PTSD patients. In addition, targeting these two components through psychological treatments can effectively reduce the social isolation of veterans with PTSD.

Keywords: veteran, social isolation, emotional inhibition, rejection sensitivity, post-traumatic stress disorder.

Introduction

As an unpleasant and stressful phenomenon, war can cause psychiatric disorders. Post-traumatic stress disorder (PTSD), a pervasive, long-term, and debilitating disorder among veterans, is considered a significant challenge in public health. PTSD is associated with significant social exclusion. Veterans of war also experience significant loneliness and social isolation. Social isolation is an objective experience that examines a person's adaptation to the social environment based on the frequency of social interactions and integration of the person in social networks. In the mental health field, social isolation should always be considered among veterans. Due to increased depression, suicidal thoughts or attempts, and re-hospitalisation in

psychiatric hospitals, veterans with limited social and economic capital are exposed to social isolation in late adulthood. 6

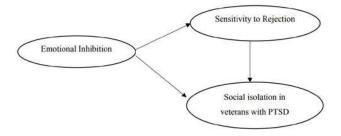
Studies have shown that emotional inhibition is one of the factors affecting personal efficiency, and people whose emotional expression style is emotional control and inhibition feel lonely and are afraid in social relationships and interactions. Due to low self-efficacy caused by this feeling, they experience social isolation and fear of social evaluation.⁷ Therefore, the psychological variable that can be considered concerning social isolation in veterans with PTSD is emotional inhibition. Regarding the information processing approach viewpoint, emotional inhibition is one of the main components of emotional processing that affects a person's

psychological processes. Emotional inhibition is the tendency to consciously inhibit emotional expression during emotional arousal.8 In general, emotional inhibition has consequences, including complaints, considering insignificant details of events that usually do not cause excitement, the tendency to impulsive behaviour, discomfort, avoidance of social relationships, weakness in self-care and low selfefficacy.9 The expression and persistence of vivid, uncontrollable and distressing intrusive memories are one of the main features of PTSD.10 Research reveals that trauma survivors who experience psychological distress, mostly avoid the behavioural expression of their emotions. 11 Also, after a traumatic event, attempts to suppress or avoid traumatic memories sometimes paradoxically increase the expression of intrusive memories.12 The results of research studies confirm that healthy people can actively suppress their emotional memories through the lateral prefrontal cortex. In contrast, individuals with PTSD frequently experience unwanted memories of previous traumatic experiences, even when they try to avoid them.13 Research results indicate that many veterans experience discomfort in communicating with others. 14 In addition, those symptoms of emotional numbness are independently associated with more emotional distress and less social contact.

Moreover, research studies confirm that maladaptive behavioural reactions, especially social withdrawal (or isolating oneself from others), are influenced by perceptions and emotions related to rejection sensitivity. 15 Sensitivity to rejection is a personality trait characterised by excessive sensitivity to social rejection. People with high sensitivity to rejection perceive social interactions as threatening, which leads to decreased satisfaction and support for social networks. 16 Sensitivity to rejection has a positive and substantial relationship with social avoidance and psychological distress and a negative and substantial relationship with self-esteem and social self-efficacy.¹⁷ Sensitivity to rejection can lead to psychological issues through problems in emotion regulation,18 negative emotionality,19 extreme aggressive behaviours²⁰ and high reactivity to social experiences.21 Research indicates that the position of avoidance is high in people who are sensitive to rejection.22 Exposure to trauma can increase aggressive individuals with high sensitivity to rejection, which may hinder the ability to seek social support.23 Sensitivity to rejection and low social support significantly predict PTSD symptoms in trauma survivors.24 Wang et al. investigated and confirmed the mediating role of sensitivity to rejection in the relationship between interpersonalsocial stressors and depressive symptoms in the military community. 25

A review of the related literature shows that the social isolation of veterans can increase the incidence of depression, suicidal thoughts or attempts, and readmission to psychiatric hospitals.⁵ Research also confirms that social isolation is associated with the severity of PTSD symptoms in war veterans through the catalyst of the war stress response.26 Since inhibition and social isolation is the main component of PTSD, assessing social isolation based on the personality traits of emotional inhibition and sensitivity to rejection can play a significant role in assessing the vulnerability of war veterans. Failure to examine the direct and indirect effects of emotional inhibition and rejection sensitivity on social isolation in veterans with PTSD in previous studies is a gap that is filled by this study. The result of such a study serves as a preliminary basis for further studies as well as the design of appropriate interventions to reduce social isolation in veterans with PTSD. Therefore, the originality of this research topic adds to the importance and necessity of this research. Therefore, in the following conceptual model, the present study was conducted to determine the mediating role of sensitivity to rejection in the relationship between emotional inhibition and social isolation in veterans with PTSD (Figure 1).

Figure 1. The conceptual model of the research



Methods

Study design and sample

In terms of purpose, this study is applied, and in terms of the data collection method (research design), it is considered descriptive-correlation research. The statistical population consisted of all veterans with PTSD hospitalised in Isar Ardabil Psychiatric Hospital in 2022. Since, according to many researchers, the minimum sample size required in the structural equation model is 200, the research sample size was considered 350, considering the possibility of dropping out of the subjects and increasing the

external validity. After removing the outlier data, 300 questionnaires were entered into the statistical analysis; therefore, the research sample included 300 veterans with PTSD who were selected as a purposive sampling, considering the acceptance of the veterans to participate in the research in the first place and having the entry and exit criteria from the statistical population. The entry criteria are: 1) minimum education of diploma; 2) age range from 40 to 70; 3) obtaining a score above the cut-off point in the PTSD checklist (PCL-M); 4) absence of psychotic symptoms, including hallucinations and delusions; 5) absence of other diagnoses with post-traumatic stress disorder; and 6) not suffering from substance abuse related disorders. The exclusion criteria are: 1) incompleteness of the questionnaires and 2) unwillingness to cooperate with the researcher.

Data collection tools

Posttraumatic Stress Disorder Checklist-Military Version (PCL-M). This instrument is a 17-item, 5-choice one developed as a diagnostic aid by Weathers et al. for the US National Center for Posttraumatic Stress Disorder.²⁷ Five items are related to re-experiencing traumatic symptoms, seven are related to symptoms of emotional numbness and avoidance, and the other five items are related to intense arousal symptoms. The cut-off point for PTSD is considered to be 50. This scale was standardised in Iran by Goodarzi.²⁸ In a study by Goodarzi, the internal consistency of the questionnaire was 0.93;²⁸ in research by Weathers et al.,²⁷ the consistency coefficient was 0.97 for Vietnam War veterans.

Social Isolation Scale. Russell created this scale to assess the objective feeling of social isolation, which contains 20 questions.²⁹ It is scored on a 4-point Likert scale (never = 1, rarely = 2, sometimes = 3, always = 4). Questions 1, 5, 6, 9, 10, 15, 16, 19 and 20 are scored reversely. Research reported the retest reliability of the scale as 0.89.²⁹ In Iran, the scale's reliability has been obtained using Cronbach's alpha method of 0.93. Moreover, the correlation coefficient between the questions with a total score of 0.3 was reported as significant, indicating the scale's construct validity.³⁰ The present study estimated the scale's reliability at 0.88 using Cronbach's alpha method.

Kellner Emotional Inhibition Questionnaire. This questionnaire includes 16 items that evaluate 4 subscales of verbal inhibition, shyness, hiding emotions and self-control based on a 5-point Likert scale (from no = 0 to always = 4).³¹ In this questionnaire, the items' scores are added together to evaluate the emotional inhibition level, and then

the total score is obtained, which is considered from zero to 64. In the study of Grandi et al., Cronbach's alpha coefficient of the whole scale was 0.79, which designates the acceptable internal consistency of the emotional inhibition scale.32 The results also pointed out a distinction between clinical and non-clinical populations. Asadollahi et al. obtained Cronbach's alpha coefficient of 0.79 for the total scale score in the Iranian population, and the four factors of the questionnaire were also confirmed using confirmatory factor analysis.33 Moreover, the correlation between Kellner's Emotional Inhibition Questionnaire and the Executive Dysfunction Questionnaire indicated the concurrent validity of the questionnaire above. In the present study, the scale's reliability was obtained using Cronbach's alpha method for a total score of

Rejection sensitivity questionnaire - adult version. The rejection sensitivity questionnaire of Berenson et al. is adapted from the Dooney and Feldman rejection sensitivity questionnaire. 34

It is formed based on the history of socio-cognitive learning, measuring the process of cognitive, emotional processing related to stressful and rejection situations. It is active in situations where rejection or acceptance is possible. This scale consists of nine two-part questions (A-B) and is based on a 6-point Likert scale (Part A ranges from 1 = I am not worried at all to 6 = I am very worried, and Part B ranges from 1 = Very unlikely to 6 = Very likely). By subtracting the score of expectation of acceptance in each situation (Part B) from the number 7, the score of expectation of rejection is calculated. Then, in each situation, the rejection expectation score is multiplied by the anxiety degree, and the average score for nine situations is calculated and considered as the person's sensitivity to rejection. The internal consistency of this scale is reported as 0.89, and its retest reliability is 0.91 using Cronbach's alpha method. The scale's reliability was obtained using Cronbach's alpha method of 0.83 in the present study.

In order to conduct the research, after coordination with the Vice-Chancellor of Education and Research of Ardabil University of Medical Sciences, the necessary coordination was made with the directorate of Isar Psychiatric Hospital. Considering their willingness to participate and using the purposive sampling method, 350 veterans with PTSD were selected based on the psychiatrist's diagnosis and based on the DSM-5 diagnostic criteria and confirmation of this diagnosis through the Post-Traumatic Stress Disorder Checklist – Military version by the examiner. After obtaining the consent of the research

samples and before presenting the questionnaires and collecting information, the target samples were individually informed about the objectives and quality of the research, and the necessary communication was established with them. After obtaining written consent from the veterans to participate in the research, the scales of social isolation, emotional suppression, and sensitivity to rejection were presented to them.

This work was done individually, and in case of any ambiguity during the completion process, the necessary guidance was provided to the subject in the framework of how to implement the relevant questionnaires. Simultaneously, assuring the confidentiality of the information and preparing the research sample mentally and psychologically to participate in the research were other ethical points of this research. Also, the standard codes of ethics in medical research include 13, 14, 2 (benefits from findings for the advancement of human knowledge), code 20 (coordination of research with religious and cultural standards) and codes 1, 3, 24 (consent of subjects and their legal representative), which were observed in this study.

Analysis

Finally, after collecting the questionnaire and removing the outliers, the raw data from 300 questionnaires were analysed using descriptive statistical tools such as mean, standard deviation, variance and Pearson correlation test using SPSS

version 25 software and structural equation modelling using Lisrel software version 8.8.

Results

The statistical sample studied included 300 veterans with PTSD with a mean (standard deviation) age of 57.26 (7.12) years, who were 50 to 72 years old. Fifty-four (18%) of these veterans were single, and 246 (82%) were married. One hundred sixty-two people (54%) had a diploma, and 138 people (46%) had a higher education than a diploma. Furthermore, 74 veterans were below 25%, 86 were 25–50%, 94 were between 50–70%, and 46 were above 70%. Table 1 shows the research variables' mean, standard deviation, variance and Kolmogorov-Smirnov test results.

Table 1 shows that the Kolmogorov-Smirnov statistic of the research variables is insignificant. Therefore, the distribution of social isolation variables, emotional inhibition and sensitivity to rejection is normal (P<0.05).

According to the results of the correlation matrix (Table 2), there is a positive and significant relationship between the social isolation of PTSD veterans with emotional inhibition and sensitivity to rejection at a significant level of 99%. In addition, there is a positive and significant relationship between emotional inhibition and sensitivity to rejection sensitivity (P<0.01).

Table 1. Description of research variables

Variable	Mean	SD	Variance	Kolmogorov- Smirnov	Significance Level
Social isolation	51.30	11.97	143.49	0.92	0.186
Emotional inhibition	36.00	12.76	162.97	0.88	0.057
Sensitivity to rejection	13.13	4.43	19.68	0.88	0.123

Table 2. Correlation matrix of research variables

Variable	1	2	3
Emotional inhibition	1		
Rejection sensitivity	0.672**	1	
Social isolation	0.787**	0.665**	1

P**<0.01 p*<0.05

In the following, the direct and indirect effects of emotional inhibition on the social isolation of veterans with PTSD will be investigated through the mediation of rejection sensitivity. Figure 2 shows the final model between the research variables in T-value mode.

According to the fit indices of the research model, the comparative fit index (CFI) is equal to 0.92, the normalised fit index (NFI) is equal to 0.91, and the fit index' goodness (GFI) is equal to 0.83, the chi-

square ratio on the degree of freedom $(\frac{x^2}{d_f})$ is equal to 39 2.0. The Root Mean Square Error (RMSEA) index is 0.068, which, according to the obtained results, can be said that the research model is approved in terms of significance and fit indicators.

Table 3 shows that the direct effect of emotional inhibition variables and sensitivity to rejection on social isolation is significant. Additionally, the direct effect of the emotional inhibition variable on sensitivity to rejection is positive and significant.

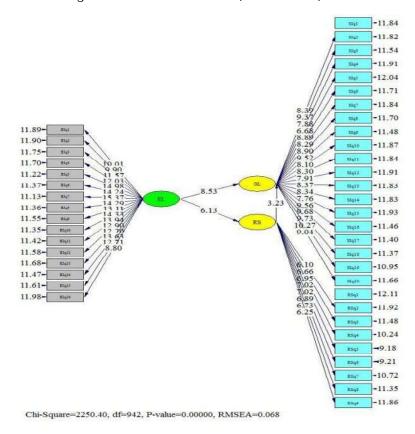


Figure 2. Research model test (T-Value mode)

Table 3. The results of the direct effects of the research conceptual model

variables			Path coefficients	T-value	SEM	Significance
Emotional inhibition	-	Social isolation	0.71	8.53	0.046	Significant
Emotional inhibition	→	Sensitivity to rejection	0.64	6.13	0.053	Significant
Sensitivity to rejection	-	Social isolation	0.19	3.23	0.101	Significant

Research hypothesis			T-Sobel	Standard path coefficient	VAF statistics	Test result		
Emotional inhibition	→	Rejection sensitivity	-	Social isolation	3.091	0.122	0.146	Proved

Table 4. Analysis of the indirect effects of the research conceptual model

In order to investigate the indirect effect of the emotional inhibition variable on social isolation with the mediation of sensitivity to rejection, the Sobel test was used. Additionally, to determine the intensity of the indirect effect through mediation, the researchers used a statistic called VAF, the results of which are presented in Table 4.

According to the value of indirect t-statistics (T-Sobel) between the above variables, which is outside the range (-1.96–1.96), the hypothesis of the indirect effect of emotional inhibition on social isolation is accepted. Therefore, in addition to the direct effect, the emotional inhibition variable indirectly affects social isolation through sensitivity to rejection.

According to the value obtained for the VAF statistic, it can be seen that 14.6% of the effect of emotional inhibition on social isolation can be explained through sensitivity to rejection.

Discussion

The present study aimed to investigate the mediating role of rejection sensitivity in the relationship between emotional inhibition and social isolation of PTSD veterans. The research findings depicted that emotional inhibition and rejection sensitivity significantly affected the social isolation of veterans with PTSD. Also, emotional inhibition through sensitivity to rejection indirectly affected the social isolation of veterans with PTSD.

The findings indicate that emotional inhibition positively and significantly affects social isolation among PTSD veterans. This finding aligns with the results of studies. 11,13,14 The research results indicate that many veterans experience discomfort in communicating with others; moreover, the symptoms of emotional numbness are independently associated with more emotional distress and less social contact. 14 Trauma survivors who experience psychological distress mostly avoid the behavioural expression of their emotions. 11 In explaining this finding, the theories of PTSD imply that the experiential avoidance of traumatic memories through the suppression of thoughts as a significant and traumatic factor causes the maintenance of disturbing symptoms. 35 Imposed

war veterans who experience emotion regulation problems (such as emotional disinhibition) learn to use inflexible pessimistic cognitions. They also use pessimistic-based behaviours as a maladaptive social and emotional management strategy.36 These pessimistic cognitions and behaviours can provide them with social isolation. Also, based on Gross's theory, inhibition is an emotion regulation strategy that refers to reducing, restraining, or abandoning emotionally expressive behaviour when a person is in an emotional state. As a response-based emotion regulation strategy, it occurs late when emotion is still present and does not contribute to reducing emotional experience. Emotions will remain unresolved, so there is a greater cognitive need to suppress emotions, which can negatively affect physical and psychological health. Expressive inhibition distorts the experience of emotions, leading to reduced control over emotions and reduced capacity for their effective regulation.³⁶ Due to the ineffective regulation of emotions, inhibition is associated with experiencing more negative and less positive emotions, avoiding close relationships, indicating more depressive symptoms, and lowering general wellbeing. In veterans with PTSD hospitalised in psychiatric hospitals due to being socially inhibited, inhibition during social interactions will lead to increased adverse emotional reactions and, thus, withdrawal from social situations.

The results revealed that rejection sensitivity has a positive and direct effect on the social isolation of PTSD veterans, which aligns with the research results. 16,17,21 Sensitivity to rejection and low social support significantly predict PTSD symptoms in trauma survivors.24 People with high sensitivity to rejection perceive social interactions as threatening, leading to decreased satisfaction and support of social networks.¹⁶ Research results indicated that sensitivity to rejection has a positive and significant relationship with social avoidance and psychological distress and a negative and significant relationship with self-esteem and social self-efficacy.¹⁷ Research indicates that the position of avoidance is high in people who are sensitive to rejection.²¹ Elaborating more on the gained results and based on the loneliness theory of Cacioppo and Hawkely, people at a high level of loneliness become cognitively more alert to social threats and predict social interactions more negatively, leading to more socially avoidant behaviours.³⁷ Also, based on the PTSD cognitive model of Ehlers and Clark, sensitivity to rejection as a strategy to control PTSD symptoms can affect the social interactions of veterans with PTSD as a prior experience or belief and cause them to withdraw from social relationships. In fact, the theoretical framework of the mixed interpersonal circular model specifies interpersonal relationships along two orthogonal dimensions (dominance and gentleness) that represent the interpersonal perceptions and overt behaviours of people with high rejection sensitivity (hostile dominance, over-dominance). In other words, sensitivity to rejection is a cognitiveemotional tendency to expect anxiety, easy perception and a solid reaction to rejection.¹⁶ People with high sensitivity to rejection always anticipate rejection from others, showing maladaptive responses to rejection (such as excessive efforts to please others, social withdrawal or hostile behaviours). These behaviours, in turn, provoke excessive rejection from others. Therefore, it weakens interpersonal relationships, provides the basis for social isolation and reinforces a self-perpetuating cycle of negative relationship outcomes.

The results also revealed that sensitivity to rejection could mediate the relationship between emotional inhibition and social isolation of PTSD veterans. As far as the researchers' knowledge is concerned, no study could be found to be directly aligned with these results; however, there are studies from which such results can be deduced. 18,25 Research investigated and confirmed the mediating role of sensitivity to rejection in the relationship between interpersonal-social stressors and depressive symptoms in the military community.²⁵ Delving into the issue in order to explain these findings, it can be declared that sensitivity to rejection can lead to psychological problems by creating issues in emotion regulation.18 Exposure to trauma can increase aggressive individuals with high sensitivity to rejection, which may hinder the ability to seek social support.23 Research studies also indicate that the induction of experiential rejection leads to several negative consequences that can reflect dysfunctional responses in veterans with PTSD. These responses include a decreased ability to control impulses and self-regulation strategies, rumination, increased anger and perception of hostility, a sense of being worthless and decreased self-awareness.11 The veterans of the imposed war suffering from PTSD and hospitalised in mental hospitals use maladaptive emotion regulation strategies based on reducing negative emotions (emotional inhibition) in the emotion regulation processes. They fear losing control when expressing their emotions and facing rejection or abandonment. In other words, emotion regulation problems increase physiological and cognitive arousal and distress in responding to stressful factors (excessive rejection by others). This same arousal will cause maladaptive coping behaviours such as avoidance and social isolation, which paradoxically increases PTSD symptoms.

Emotional inhibition and sensitivity to rejection play an indispensable role in the level of social isolation of veterans with PTSD, and targeting these two components through psychological treatments can be effective in reducing the social isolation of veterans with PTSD.

Strengths and limitations

This research is limited to veterans with PTSD of the psychiatric hospital of Ardabil city, so we should be cautious in generalising the results. This research was carried out by correlational method, making it impossible to explain the cause-and-effect relationship based on it; therefore, the results should be interpreted cautiously. In addition, this research was only done quantitatively. If qualitative methods such as in-depth and semi-structured interviews were used, more complete results would be obtained. Therefore, it is suggested that this research be done on other regions of the country with more samples. Moreover, according to the research findings, it is suggested that the results of this research be used in psychiatric hospitals to reduce the social isolation of veterans with PTSD. It is also suggested that courses be implemented as educational workshops in psychiatric hospitals in order to reduce emotional inhibition and sensitivity to rejection.

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