

Psychometric Validation of the International Trauma Questionnaire (ITQ-18) in Middle-Aged Iranian Women

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Abstract

Introduction: Complex Post-Traumatic Stress Disorder (CPTSD) has been recognized as a distinct disorder from Post-Traumatic Stress Disorder (PTSD) in the eleventh revision of the disease classification system (ICD-11). The international trauma Questionnaires have been developed to measure C-PTSD. This study was conducted to enhance the psychometric properties of the Persian version of the 18-item International Trauma Questionnaire (ITQ-18 Items).

Method: This research followed a descriptive-evaluative approach. The last version of ITQ was translated and back-translated, and its content validity was assessed through measurement and obtained above 0.70. The statistical population consisted of non-clinical married middle-aged women in the age range of 30 to 40 years who were registered in the comprehensive health services center electronic system of Bushehr province in the year 2022-2023. They responded to the questionnaires over a two-month period using a multistage cluster sampling method. To assess concurrent validity, the hospital anxiety and depression questionnaire along with adverse childhood experiences were used. The data were analyzed employing confirmatory factor analysis and correlation coefficient analysis.

Results: Findings indicated that, considering SRMR=0.56, RMSEA=0.61, TLI=0.943, CFI=0.959, and BIC=21879.875, the optimal fit was found in the second-order two-factor model. A statistically significant positive relationship was found between CPTSD and clinical anxiety and depression ($p<0.01$). Additionally, adverse childhood experiences showed a correlation ($p<0.01$).

Conclusion: According to the findings of the present study, it can be stated that the Persian version of the ITQ-18 Items, by the ICD-11, exhibits appropriate psychometric properties.

Keywords: Adverse Childhood Experience, Complex Post Traumatic Stress Disorder, International Trauma Questionnaire, Post trauma stress Disorder CPTSD, ITQ, PTSD

Introduction

The eleventh revision of disease classification (ICD-11), published in June 2018, distinctively categorizes two disorders related to psychological distress, Post-Trauma Stress Disorder (PTSD) and Complex- Post-Trauma Stress Disorder (CPTSD). The CPTSD is associated with multiple and prolonged traumatic events experienced by an individual during early life, particularly in the interpersonal domain, such as child abuse or witnessing abuse. It includes disturbances in relationships, emotion regulation, and a sense of self-worthlessness [1]. and PTSD is the result of exposure to a severe traumatic event, characterized by the core features of experiencing re-experiencing, heightened arousal, and avoidance of the traumatic event. The concept of CPTSD was introduced based on clinical observations by Herman (1999), which showed differences from the symptoms of PTSD. Herman argued that the prevailing definition of CPTSD adequately captured the intricate symptoms experienced by prolonged

trauma survivors [1]. Similarly, Vanderkolk (2005) introduced developmental trauma for chronic interpersonal traumas caused by maltreatment and suggested its inclusion in psychological disorder classifications [2]. The Fourth Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) did not confirm the concept of CPTSD as a separate disorder and considered it as one of the criteria for PTSD [3]. The fifth edition revision, through critical evaluation of the existing literature and addressing conceptual ambiguity and validity concerns, decided not to consider CPTSD as a separate diagnosis [4]. Instead, they added a new specifier to the three clusters of the disorder (re-experiencing, avoidance, and hyperarousal), which is continuous negative changes in cognition and mood. This specifier was considered a subgroup of the dissociation symptom derived from PTSD [5]. Nevertheless, within the context of the ICD-11, a determination was reached by the specialized task force on stress-related conditions. This task force comprised delegates from diverse continents and nongovernmental organizations and was under the World Health Organization (WHO) [6]. In this revision, the importance of distinguishing between these two disorders was emphasized, and they were categorized as separate entities. This change in the revision underscores the significance of separating these two disorders and placing them within the realm of health-related issues [7]. Accordingly, PTSD is classified under a specific code (6B40), and it is recognized as a result of experiencing one or more traumatic events in adulthood. Additionally, CPTSD is categorized under another specific code (6B41) and is defined as a consequence of experiencing one or more prolonged interpersonal traumatic events, especially during childhood [8]. It is recognized under the general category of disturbance in self-organization [9]. Despite compelling evidence indicating the distinction between PTSD and CPTSD, there was a recognized need for a valid scale for diagnosis and research [3]. Therefore, the WHO further developed the International Trauma Questionnaire (ITQ) to enhance its clinical utility for both research and diagnostic purposes [10]. The initial version of the scale consisted of 23 items; six items measured PTSD and the remaining 16 items assessed disturbance in self-organization [11]. Research on convergent and discriminant validity supports this questionnaire [9, 12, 13].

Given the emphasis of the WHO on using a reduced number of core symptoms for each disorder and the efforts to maximize clinical utility [10], the latest version of the questionnaire has been streamlined to 12 items for convenience for clinicians and researchers [14]. Furthermore, the effect of both disorders on functioning is also measured [15]. In the latest version of the International Trauma Questionnaire, six items measure PTSD, similar to the 23-item questionnaire. However, the number of symptoms for identifying disturbance in self-organization (DSO) has been reduced from 16 symptoms to six symptoms.

The PTSD symptoms include three clusters with six items. 1- Re-experience cluster: This cluster consists of two

items: unpleasant dreams, nightmares related to the traumatic event (Re1), and a sense of a traumatic event recurring here and now (Re2). 2-Avoidance cluster: This cluster also comprises two items: Avoidant of internal reminders (Av1) and Avoidant of external reminders (Av2). 3-Sense of Threat includes arousal (Th1) and hypervigilance (Th2). These three clusters have been confirmed by the ICD-11 as factors of PTSD [5]. In addition, the three other items also measure the impact of these symptoms on creating a disturbance in the individual's life such as work and social relationships, or ability to do and accomplish everyday life tasks and other significant aspects of life as education and parenting [15]. The cluster of DSO symptoms includes Affective Dysregulation (AD), Negative Self-Concept (NSC), and Disturbance in the Relationship (DR) and three items also measure the impact of these symptoms. A systematic literature review [11] has demonstrated that a two-factor structure represents dimensions of PTSD and CPTSD. Many other studies have identified the correlated six-factor first model as the most accurate structural depiction of PTSD and CPTSD [16, 17]. Many studies have identified the four-factor model [18].

This study was conducted to examine the psychometric properties of the 18-item version of the International Trauma Questionnaire and determine its latent structure by examination to 4 models, among non-clinical middle-aged Iranian women. Given that this questionnaire has been administered in various languages worldwide and has demonstrated discriminative validity of its factorial structure [17, 18], and considering the higher risk of complex stress disorder in women compared to men, as well as the necessity for appropriate diagnosis and prevention of overlap with other neurological and psychological disorders, this study was carried out in 2022-2023 to validate the factorial structure of this questionnaire in the Persian language.

Method

This study employed an evaluative design in the psychometric and validation domain. The target population consisted of non-clinical married middle-aged women with children aged 6 to 12 years who were registered in the Comprehensive Health Service Center of Bushehr province in the year 2022-2023, and they responded to the questionnaires for two months. A total of 632 individuals participated in this study. The sample size was determined by cluster sampling method, with a focus on adequate sizes (200), very good sizes (500), and excellent sizes (1000), for factor analysis assessment [19, 20]. The resulting sample size was estimated to have an average of 700 [20].

Due to the researchers' free access to the International Trauma Questionnaire from traumameasuresglobal.com (15), the questionnaire was downloaded from the relevant website and then translated from English to Persian by a bilingual translator. Subsequently, the Persian version was translated back to English by another translator.

An expert committee included the translators and the researcher reviewed and revised the items. Content

validity was evaluated by a team of 10 professionals, including two psychiatrists, and six clinical psychology PhD holders, and two active psychologists who were working in the clinical health center. These individuals were contacted via email and were asked to rate the questionnaire items on a four-point Likert scale ranging from completely relevant and appropriate to completely irrelevant and inappropriate. Using the Content Validity Index (CVI), all items received a score higher than 0.70. A pilot test involving 20 participants gauged the questionnaire's simplicity, clarity, and importance with 93% giving positive responses. Sample selection involved dividing Bushehr Province into four regions: North, South, West, and East. Then four cities were selected from these regions, specifically: Genaveh, Khormoj, Bushehr, and Borazjan. Representative cities were chosen, and health centers were subsequently selected. These cities were divided into four regions and one health center was randomly chosen for each region. A list of middle-aged women registered under each health service center was obtained from the responsible authorities of the selected cities. Each health worker entered the names of the women under their coverage into a list. From each list, participants were randomly and systematically selected, and through telephone contact, their willingness to participate in the research was obtained. Then, a text message containing a questionnaire link was sent to their mobile phone. Out of 700 sent text messages, 632 participants responded to the questionnaires. Entry criteria included middle-aged (30-40 years) and negative screening bipolar and psychotic disorder since they were registered in an electronic system. The exclusion criteria encompassed certain disorders and unwillingness to participate. For reliability, 33 participants that were selected randomly, were re-answered within two weeks to one month. For concurrent validity assessment, a hospital anxiety and depression questionnaire and Adverse Childhood Experiences (ACE) were also used. In adherence to ethical principles, participants were informed about the confidentiality of their information and their freedom to choose not to answer questions. In addition, participants' consent was obtained and they were informed that they could withdraw from the study at any time. This step was performed to investigate the correlation and relationship between the variables of these questionnaires and ITQ. Considering the specific theoretical structure, factor analysis was used to determine the questionnaire's validity. The data were analyzed using R software version 4.2 and SPSS version 25.

The tools used in this study were as follows:

International Trauma Questionnaire (ITQ-18 item):

The ITQ-18 Items is a self-report questionnaire developed by Clotre (2018) for assessing ICD-11 PTSD and CPTSD [14]. It consists of 18 items, including 12 core items that evaluate primary symptoms and six items that assess functional impairment, such as occupation, social relationships, daily ask, education, and parenting [15]. Participants should rate the distress caused by each main symptom cluster experienced in the past month using a five-point Likert scale, ranging from not at all (score 0) to

extremely (score 4), based on their most distressing life event. The questionnaire evaluates R-experiencing, Avoidance, and threat clusters, each containing specific items, all confirmed as factors of PTSD by ICD-11 [21]. Additionally, it assesses Disturbance Self-Organization (DSO), comprising Affect Dysregulation (AD), Negative Concept (NSC), and Relationship Disturbance (DR) clusters, each with specific items (26). For diagnosing CPTSD, a minimum score of 2 or more in each symptom cluster related to PTSD, as well as DSO, is required. Also, at least one individual's functioning should be impaired due to these symptoms [18]. Internal reliability by Cronbach alpha, of the six PTSD items used for diagnostic purposes was satisfactory ($\alpha=0.89$). They were satisfactory for the re-experience cluster ($\alpha=0.80$), Avoidance ($\alpha=0.87$), Treat (0.86), as well as Cronbach's alpha for total scores of DSO ($\alpha = 0.90$) and were satisfactory for, Emotional Dysregulation ($\alpha = 0.67$), Negative Self-Concept ($\alpha = 0.94$), and disturbance in Relationships ($\alpha = 0.87$) [14]. Internal consistency of the 12-item ITQ in the original version as measured by Cronbach alpha, was obtained as follows for the total of PTSD ($\alpha=0.80$) and the cluster of experience here and now ($\alpha=0.80$), Avoidance cluster ($\alpha=0.80$), Treat of the cluster (0.86). Cronbach's alpha for total scores of DSO ($\alpha = 0.90$) and its clusters, Emotional Dysregulation ($\alpha = 0.67$), Negative Self-Concept (NSC) ($\alpha = 0.96$), and disturbance in Relationships ($\alpha = 0.80$), was obtained [14].

Hospital Anxiety and Depression Scale (HADS):

HADS is a short questionnaire designed by Zigmond (1983) to measure psychological distress in cancer patients [22]. It has undergone validation and has been translated into various languages. This scale serves as a suitable means for screening clinical and non-clinical groups [23]. The questionnaire consists of 14 items and measures two scales of anxiety and depression. Scores of 11 or higher for each disorder indicate a psychological disorder. Scores between 8 and 10 falls within the borderline range, while scores from 0 to 7 are considered normal. Each item is scored on a four-point scale from (0) for never and (3) for extremely. In its English version, the scale demonstrates good reliability with Cronbach's alphas of ($\alpha= 0.86$) for the total test, and, ($\alpha= 0.82$) for depression and ($\alpha=0.66$) for anxiety. Cronbach's alphas for the Persian version of this test in an Iranian population were found to be ($\alpha= 0.78$) for the anxiety subscale and ($\alpha=0.86$) for the depression subscale [24]. In the current study, Cronbach's alphas were also obtained, yielding ($\alpha= 0.86$) for the total test ($\alpha= 0.82$) for the depression subscale, and ($\alpha= 0.82$) for the anxiety subscale.

The Adverse Childhood Experience Questionnaire (ACE):

ACE-Q is designed to measure negative and undesirable experiences in childhood that can impact psychological well-being. This questionnaire consists of 10 questions that cover various aspects of ACE. It was first developed and published by Felicity et al. in 1988 to investigate the relationship between ACE and health outcomes in adulthood [25]. The questionnaire measures five questions related to the aspects of negative behaviors with children and five questions related to parental or

family disorders. The responses to the questions are in the form of yes or no, with higher scores indicating more adverse experiences. The questionnaire has shown good reliability in its English version [26]. In an Iranian study, the validity and reliability of this questionnaire were examined among athletes, and a Cronbach's alpha coefficient greater than ($\alpha=0.70$) was obtained [27]. The Cronbach's alpha coefficient ($\alpha=0.69$) indicates the reliability of this questionnaire in the present study.

Result

The present study assessed the psychometric properties, validity, and reliability of the 18-item International Trauma Questionnaire, specifically examining the structure of core symptoms [15]. The

assessment involved 632 married middle-aged women ($M= 34, 8, SD= 3.58$). Confirmatory factor analysis assumptions were utilized including multivariate normality, lack of multivariate outliers, and no missing data. Mahalanobis distance identified and removed five outlier data points, and the Chi-square test's insignificance ($P<=0.01$) confirmed the absence of outliers. Data loss was prevented due to the survey's online administration and it was not possible to send the questionnaires until all the questions were answered by participants. To do so, four models were analyzed [17]. Model one had two factors (PTSD and DSO), model two had a unifactorial CPTSD latent variable, and model three had a correlated six-factor structure based on ICD-11 specifications (Figure 1) [28].

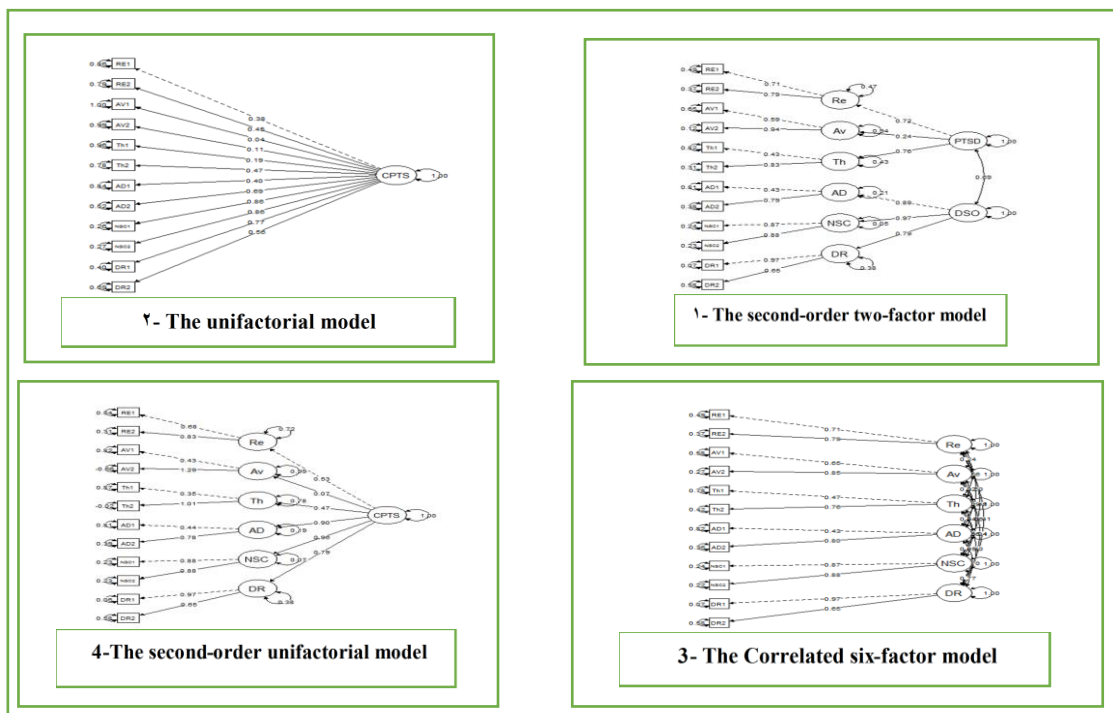


Figure 1. Examination of latent variables of PTSD and CPTSD with 4 hypothesized models.

In the confirmatory factor analysis model, the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values above 0.90 indicate a good model fit. Additionally, the Root-Mean-Square Error of Approximation (RMSEA) should be less than 0.90, and the Standardized Root Mean Square Residual (SRMR) should be less than 0.80, both indicating a desirable model fit. The values of the normed fit indices, including the Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), and Comparative Fit Index (CFI), range from 0 to 1. Values above 0.90 indicate a very good model fit, while values above 0.80 suggest a good model fit.

The findings from comparing these indices across the four

models showed that model one, a second-order two-factor model, with CFI= 0.959, TLI= 0.943, RMSEA= 0.61, and SRMR= 0.56, provided the most appropriate fit (Table 1).

The determinant for selecting the best model is the Bayesian Information Criterion (BIC), which indicates the amount of information lost in the model. Thus, the smaller the BIC value, the better and more appropriate the model is relative to others. Therefore, considering the lowest BIC value in model one, the second-order two-factor model with BIC=21879.875 and a difference of more than 10 in this index was chosen as the most suitable model (Figure 2) [20].

Table 1. Goodness- of Fit Indices in the 4proposed Models for Determining Latent Variables of 12-Item International Trauma Questionnaire.

model	χ^2	df	P<	RMSEA	SUMMER	GFI	CFI	NFI	NNFI	IF	TAG	BIC
1	156	47	0.001	0.61	0.56	0.95	0.95	0.94	0.94	0.96	0.94	21879.87
2	789	54	0.001	0.14	0.11	0.81	0.72	0.71	0.66	0.72	0.66	22458.50
3	130	39	0.001	0.61	0.5	0.96	0.96	0.95	0.94	0.96	0.94	21896.65
4	196	48	0.001	0.7	0.7	0.94	0.94	0.92	0.92	0.94	0.92	21904.46

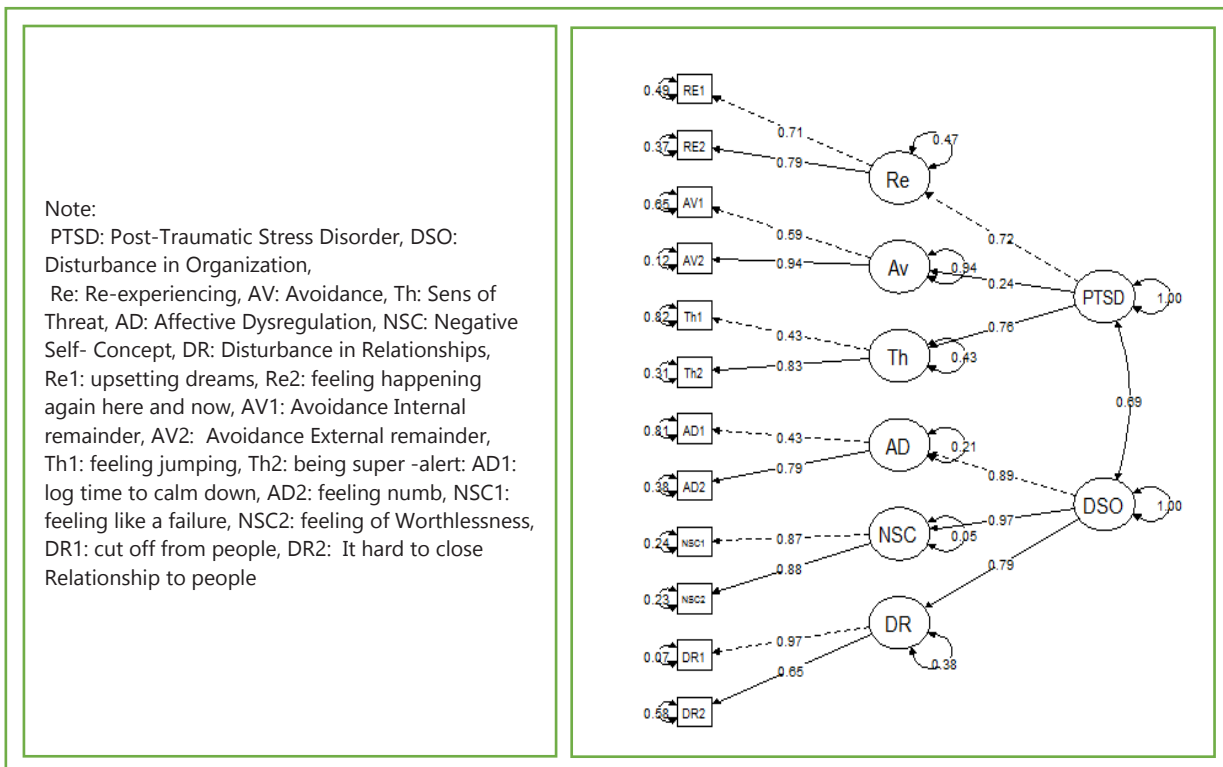


Figure 2. The second two-factor model.

Cronbach’s alpha was employed to assess the internal consistency of questions related to each factor and their ability to measure a single construct. The questionnaire’s internal consistency was evaluated for PTSD and DSO, showing satisfactory values above 0.70, except for Sense of Threat and Affective Dysregulation Ordinary, which

scored 0.52 and 0.50, respectively (Table 2).

In the second-order two-factor model, good validity was indicated by a composite reliability of CR=0.95 and an average variance of AV=0.93. Furthermore, factor loading for model one was statistically significant ($p <= 0.01$). Table 3 contains standardized factor loading for model 1.

Table2. Descriptive Statistics and Internal Consistency of ITQ Persian Version (n=632)

ITQ Dimension	Mean	SD	Minimum	Maximum	Cronbach’s a
ITQ total	16.79	8.15	0	46	0.89
ITQ PTSD	9.93	4.68	0	23	0.78
Re-experience (Re)	2.42	1.98	0	8	0.72
Avoidance (AV)	4.04	2.43	0	8	0.71
Sense of Threat (Th)	3.46	2.13	0	8	0.52
Total DSO	6.86	5.16	0	23	0.89
Affective Dysregulation (AD)	3.30	1.89	0	8	0.50

Table 3. Standardized Factor Loadings for Model 1, Correlation of Items and their Factors in the Second-Order Two-Factor Model; N=632

Factor	Items	Cluster					
		Re-experience (Re)	Avoidance (AV)	Sense of Threat (AD)	Affective Dysregulation (AD)	Negative Self-Concept (NSC)	Disturbance in Relationship
PTSD	Re 1	0.88					
	Re 2	0.88					
	AV1		0.87				
	AV2		0.88				
	Th1			0.82			
DSO	Th2			0.82			
	AD1				0.80		
	AD2				0.83		
	NSC1					0.94	
	NSC2					0.92	
	DR1						0.89
	DR2						0.90
PTSD		0.72	0.24	0.76			
DSO					0.89	0.97	0.79

Note: All Factors and items are Significant ($p <= 0.01$)

In concurrent validity, notable correlation coefficients emerged: clinical anxiety, and depression, with Clusters of PTSD and DSO except the avoidance cluster. Table 4 provides descriptive states and Cronbach's alpha for each subscale. The DSO had significant correlations with clinical anxiety, depression, and their clusters. The NSC had the highest correlation with anxiety ($r=0.57$, $p<=0.01$) and depression ($r=0.63$, $p<=0.63$). The ACE showed a significant correlation with PTSD and DSO. ACE showed a significant correlation with PTSD and DSO. Overall, PTSD prevalence was 38%, (N=241), DSO was 26% (N=167) and

CPTSD was 18% (N=117) The correlation between factors and subscales that were used is observable in Table 4. Additionally, the odds ratio for the likelihood of developing PTSD (OR=1.97, 95% CI: .736-1.421), DSO (OR= 2.604, 95% CI: 3.75- 8.61), and CPTSD (OR= 1.50, 95% CI: 2.71- 3.437) was higher with ACE. Moreover, a significant correlation coefficient was identified using the test-retest method after two weeks to one month between responses in the first and second phases for the responses, and a range was obtained between 0.53 for PTSD and 0.77 for DSO.

Table 4. Correlation between Factors and Subscales with Hospital Anxiety, Depression, and Adverse Childhood Experience (ACE)

Factors	Clusters	HADS- Anxiety	HADA- Depression	ACE
PTSD	Re-experience (Re)	0.50**	0.28**	0.14**
	Avoidance (AV)	0.067**	0.018	0.9*
	Sense of Threat (Th)	0.50**	0.28**	0.14**
DSO	Affective Dysregulation (AD)	0.43**	0.48**	0.15**
	Negative Self- Concept (NSC)	0.57**	0.63**	0.30**
	Disturbance in Relationship (DR)	0.44**	0.50**	0.16**
	ITQ- PTSD	0.33**	0.20**	0.26**
	ITQ- DSO	0.48**	0.30**	0.27**
	ITQ- CPTSD	0.38**	0.29**	0.24**

(**) : $P<=0.01$ and (*) : $p<=0.05$

Discussion

The current study is the first to validate the ITQ-18 in Persian. It focused on 12 core symptoms and involved nonclinical Iranian middle-aged women. The Persian version of the ITQ with 12 items displayed satisfactory internal consistency. Among four hypothesized models, including the second-order two-factor and correlated six-factor models, both demonstrated a good fit in CFI. All items are loaded onto their respective clusters in these models, aligning well with the data. Based on the BIC, the second-order two-factor and correlated six-factor model had the lowest values. With a difference of more than 10 points in BIC from the first-order six-factor model, the second-order two-factor model was deemed more suitable. This finding aligns with the description of CPTSD in ICD-11 [14]. The second-order two-factor model has been supported by previous non-clinical studies [17, 29, 30]. The study's outcomes were consistent with this prior research finding.

The original developers of the questionnaire (Cloitre et al. 2018) and Shevlin et al. (2018) have found both the second-order two-factor model and the correlated six-factor model to fit well [14, 18]. A study conducted in four East Asian countries by Ho et al. (2020) indicated that the second-order two-factor model provided a suitable fit in the Taiwanese sample (consistent with the current study), while the correlated six-factor model exhibited the best fit in the Hong Kong sample. Both models demonstrated adequate fit in China and Japan as well. Another study conducted among a non-clinical population of Chinese students also demonstrated a very slight difference in BIC values between the correlated six-factor model and the second-order two-factor model, both of which showed a good fit [16]. Other findings of the present study indicated that the rates obtained for the diagnosis of PTSD (38%) and CPTSD (18%) were higher than those reported in

studies with non-clinical samples [11, 18] and comparable to studies involving clinical samples [21, 29, 31-33]. In explaining this matter, it can be acknowledged that the present study was exclusively composed of middle-aged women. Typically, gender, as well as being in the middle-age range (approximately 30 to 45 years old), with relatively fewer men and elderly individuals, can be considered as individual risk factors for susceptibility to developing PTSD [36]. Epidemiological studies related to DSM-5 have also indicated that women have higher rates of PTSD compared to men [37]. This vulnerability in middle-aged women following early-life traumas can be attributed to biological, psychological, and social factors, including endocrine glands, threat perception, loss of control, trauma-related dissociation, and social isolation [32]. It's worth mentioning that half of the participants in the present study had a history of at least one to nine ACE. Additionally, participants in the current study might have been exposed to other traumas, such as witnessing community violence, experiencing, bullying, enduring incurable diseases, or the loss of loved ones, which were not assessed in this study. These unassessed traumas could potentially contribute to PTSD among participants. Another noteworthy discovery from this study was that individuals with a history of ACE were more than twice as likely to develop PTSD and CPTSD compared to those without such experiences. This could indicate the role of interpersonal traumas in the likelihood of developing these disorders, which aligns with findings from previous research [34]. Developmental traumas can have a profound impact on individuals [2, 34]. According to the hypothesis, the current study demonstrated that all the factors and the clusters had a strong and significant association with hospital anxiety and depression. DSO and its clusters demonstrated a stronger correlation with both clinical anxiety and depression. This correlation was

particularly stronger in the cluster of NSC. This finding is consistent with the results of other studies [21, 31]. This could suggest that NSC might significantly impact an individual's life and lead to a distorted self-concept. This can contribute to the development of disorders such as depression and anxiety [35]. Furthermore, the finding of the present study indicated that DSO was more significantly correlated with both anxiety and depression, while PTSD showed a higher correlation coefficient with anxiety compared to depression. These findings, in addition to aligning with the results of other studies [17, 21], are important in that they indicate that the symptoms of PTSD and DSO although strongly interconnected, are associated differently with two clinical external variables: CPTSD with anxiety and depression and PTSD with anxiety [21]. It might also suggest that these individuals may require different clinical interventions and treatment approaches [15, 35]. Failing to receive appropriate diagnosis and treatment could result in the manifestation of physical symptoms as individuals age, and old age, they may not receive the necessary treatment [35]. Among the clusters of PTSDs, the avoidance cluster did not show a significant correlation with depression and anxiety. Other findings of the current study revealed a positive and significant relationship between ACE and both DSO and PTSD and the odds ratio for the effect of adverse childhood experience showed on the likelihood of developing PTSD and DSO is nearly twofold, as demonstrated in previous research [30, 36]. Furthermore, this indicates the detrimental nature and persistence of the negative effects of ACE emphasizing their enduring impact [2].

Conclusion

This study demonstrated the ITQ, emphasizing 12 core symptoms as reliable and valid primary indicators in the non-clinical Iranian women community of middle age. The second-order two-factor model represents the best-fit structure for latent variables in this questionnaire, assessing PTSD and CPTSD. On the other hand, the impact of ACE on developing CPTSD as a detrimental factor can be regarded as an important criterion in the screening process of primary healthcare centers within comprehensive health service facilities. It can also serve as a fundamental aspect of therapeutic and psychological interventions aimed at improving the quality of life and mental health of middle-aged women.

Significant limitations of this study included the concurrent completion of the questionnaire during internet filtering and participants' lack of trust in the sent text messages. Another constraint was the online completion of the questions without control over the response aversion, which might have influenced their answers. Additionally, this study was solely conducted on middle-aged women. It is recommended that in future studies investigate other groups.

Conflict of Interest

The authors have declared no conflicts of interest.

Ethical Approval

This research obtained the ethical code from the Ethics Committee of Royan Institute, Tehran (with code IR.ACECR.ROYAN.REC.1401.06). Participants could only access the questionnaire link and questions upon providing their informed consent to participate in the research.

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