



Factor Structure and Psychometric Properties of Persian Version of Relationship Emotional Schema Scale Among Iranian Victims of Domestic Violence

Abbas Masoudzadeh ¹, Somayeh Alami², Mehdi Pourasghar² and Yazdan Naderi Rajeh ^{3,*}

¹Department of Psychiatry, Psychiatry and Behavioral Sciences Research Center, Mazandaran University of Medical Sciences, Sari, IR Iran

²Psychiatry and Behavioral Sciences Research Center and Department Psychiatry, Mazandaran Medical University, Sari, IR Iran

³The University of Social Welfare and Rehabilitation Sciences, Tehran, IR Iran

*Corresponding author: The University of Social Welfare and Rehabilitation Sciences, Tehran, IR Iran. Email: yazdan.nr66@yahoo.com

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Abstract

Background: After introducing the emotional schema model, two questionnaires are proposed to assess this structure. This study is the first validation research on the Relationship Emotional Schema scale (RESS) worldwide.

Objectives: The present study aimed to assess the factor structure and psychometric properties of RESS among Iranian victims of domestic violence.

Materials and Methods: This study used a correlational method, and the research population encompassed couples with the experience of domestic violence, who had referred to the Forensics Center of Sari Province in 2018. The sample size of the study was determined to be 227 persons selected by the convenience sampling method. To implement RESS for Iranian population after back translation, a pilot study was conducted on 50 persons. Moreover, internal consistency and exploratory factor analysis were performed to check its structure validity.

Results: Fourteen items have a significant correlation with the scores of the relevant subscale (negative and positive relationship emotional schema). The reliability of these two dimensions was acceptable, as confirmed by Cronbach's alpha coefficient with a range of 0.68 to 0.74. The total value of Cronbach's alpha coefficient was 0.71. Exploratory factor analysis revealed four factors of RESS. Furthermore, a two-factor structure was extracted, and the correlation between items confirmed the structure validity of the scale. Convergent validity analyses revealed that negative and positive relationship emotional schemas had a significant correlation with the domestic violence domains and its total score and with neuroticism and extraversion.

Conclusions: According to the present findings, RESS can be utilized in research and clinical practice.

Keywords: Domestic Violence, Psychometric Properties, Persian Version

1. Background

In recent years, the concept 'emotion' has become increasingly crucial in evidence-based psychotherapy (1, 2), particularly in emotionally-focused couple therapy (3). Leahy (4) developed an emotional schema model addressing the programs, attitudes, and coping strategies used regarding the emotions. Emotional schemas represent individuals' beliefs, views, responses, and tendencies in their daily activities in the presence of emotions to help clients adapt to their emotional experiences (5). Emotional schemas play an essential role in psychopathology (6).

Emotional schemas related to couple relationships refer to planning and strategies in response to the couple's

feelings. Individuals hold disparate emotional schemas regarding their spouses. How they react to their spouses is highly effective in depicting the quality of their marital relations (7). After introducing the model, much research has been carried out on the significance of schemas in couples' relations. According to many studies, emotional schema is associated with many psychopathologies and marital status. Previous research has indicated that the emotional schemas account for 20 percent of marital satisfaction (8). Moreover, Hasani et al. (8) study indicated that the explanation of emotional schemas in marital life goes beyond emotional intelligence. In stepwise regression analysis, Leahy's Emotional Schema scale (LESS) predicted marital satisfaction as follows: "greater validation,

less blame, higher values, less simplistic view of emotions, greater comprehensibility, and higher acceptance of emotions" (9). Such beliefs and interactive styles in an intimate relationship may play a critical role in creating discord and increasing the risk of depression in both partners. The emotional schema model in intimate relations highlights the implied views indicating that partners' emotions may lead to harmful responses to emotional distress and feelings such as insults, stonewalling, humiliation, and dismissive responses in couples' relations. To expand this model, Leahy (10) proposed 14 dimensions similar to the emotional schemas to which individuals are exposed regarding their emotions.

To address how partners handles each other's emotions, Leahy (10) developed RESS (a self-report scale with 14 items) with the aim of assessing how a patient views a partner's response to the patient's emotional difficulties. Previous studies have reported that the total score of RESS accounted for about 36 percent of variance on the Dyadic Adjustment scale (DAS); therefore, it could predicted marital satisfaction, even better than depression level or one's emotional schemas. A study on satisfaction with marital relations showed that all dimensions of RESS were significantly correlated with marital satisfaction (7). Amongst the RESS dimensions, less validation was the robust predictor of marital problems. Couples on the verge of divorce report that their partner responds negatively to their emotions and feelings. These perceived negative responses by partners accounted for almost 50% of the variance in marital satisfaction and also highly predicted depression. Moreover, RESS was developed to determine the partner's beliefs and attitudes towards their emotions (7). In this regard, RESS is to help therapists identify couples' relationship emotional schemas. Since the concept 'relationship emotional schema' is novel, the psychometric properties and factor structure of RESS have not been addressed yet. On the other hand, this concept is critical in marital and relational dissatisfaction. This study was the first research conducted to investigate the validity, reliability, and factor structure of the Persian version of RESS, which evaluates partners' attitudes towards each other's emotions.

2. Objectives

This study aimed to assess the factor structure and psychometric properties of the Persian version of the Relationship Emotional Schema scale (RESS) among individuals referred to Forensic Center for domestic violence.

3. Materials and Methods

In this correlation study, correlation coefficients and exploratory factor analysis were used to investigate psychometric properties and factor structure (RESS) among Iranian population. After obtaining approval from the scale developer to back translate it to Persian and assess its different dimensions, a team, including two psychiatrists, two clinical psychologists, and an English specialist, translated the questionnaire. Following the direct translation phase, the reverse-translation to English was also performed. According to Monroe, the sample size needed for factor analysis is between 200 and 500 persons (11). The sample size of the present study was estimated to be 227 persons; hence, 227 individuals referred to the Forensics Center of Sari province in 2018 were selected by using the convenience sampling method. Inclusion and criteria were literacy, age range of 16 - 60 years, married, tendency to participate in the study, and referral due to domestic violence. Other psychiatric disorders such as psychotic disorders were excluded from the study. When the participants were explained about the research objectives, they were provided with a written consent form. After signing the forms, they were included in the study.

3.1. Instruments

3.1.1. Relationship Emotional Schema Scale

The double translation method was used to implement this scale for the Iranian population. First, the scale was translated by some experts. Then two faculty members checked the translated version and compared it with the original version of the scale. In the next step, a pilot study was conducted, and some modifications were made. Relationship Emotional Schema scale (RESS) is a self-report questionnaire detecting how a patient thinks his or her intimate partner responds to the patient's emotion. RESS encompasses fourteen items scored based on a Likert scale ranging from 1 (very untrue of me) to 7 (very true of me). The scale consists of 14 sub-dimensions, each one being addressed by one item. These 14 items represent one of the dimension of relationship emotional schemas, including blame, expression, rumination, looking at emotions clearly, consensus, duration, acceptance of feelings, demand for rationality, uncontrollability, high values, numbness, guilt, comprehensibility, and validation by others (10).

3.1.2. Spouse Abuse Questionnaire

Ghahari developed Spouse Abuse questionnaire (SAQ): to evaluate emotional, physical, and sexual abuse. The psy-

chometric properties of SAQ indicated that its internal consistency was excellent (Cronbach's alpha: 0.92), and its test-retest reliability was highly acceptable (0.98) (12).

3.1.3. The NEO five-Factor Personality Inventory

This inventory is a short version of the five-factor personality questionnaire (13). This inventory consisted of sixty questions scored based on a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree". In Iran, a study (14) revealed that The NEO five-Factor Personality inventory (NEO-FFI) had sufficient and acceptable reliability (Cronbach's Alpha = 0.86).

3.2. Procedures and Data Analysis

After collecting the required data, SPSS software version 24 was used to analyze the participants' scores in all variables. To check its convergent validity, SAQ and NEO-FFI were used, and exploratory factor analysis and internal correlation were performed to examine its structure validity. Moreover, the scale's reliability was estimated based on its internal consistency. Bartlett's test and Kaiser-Meyer-Olkin (KMO) analysis were run to evaluate the eligibility of factor analysis and sample sufficiency.

3.3. Ethical Clearance and Informed Consent

The study was conducted after receiving the Code of Ethics from the Student Research Committee of the University (Code: IR.MAZUMS.REC.1397.1485).

4. Results

Table 1 presents the participants' demographic characteristics, and Table 2 shows the internal consistency and other psychometric properties of the items. The total value of Cronbach's alpha coefficient for the scale was 0.71, indicating that the scale had acceptable internal consistency. Cronbach's alpha coefficients were estimated for each of the 14 dimensions. Table 2 also shows the psychometric properties of RESS.

The total score and subscales of SAQ and NEO-FFI were used to assess the convergent validity. The correlation results between the dimensions of RESS and SAQ indicated that the dimensions of positive relationship emotional schema (namely rumination, blame, control, duration, numbness, guilt/shame, and rational) had a significant direct relationship with the total score of domestic violence ($r = 0.45$, $P = 0.000$). On the other side, the dimensions

Table 1. The Participants' Demographic Characteristics

Variable	No. (%)
Level of education	
Elementary	19 (8.42)
Middle	36 (16.01)
Diploma	72 (32.06)
Academic	98 (43.60)
Gender	
Male	29 (12.90)
Female	196 (87.12)
Job	
Self-employed	67 (29.80)
Employee	28 (12.43)
Unemployed	12 (5.38)
Housewife	99 (44.06)
Retired	12 (5.30)
Student	7 (3.19)
Age	
16 - 32	107 (47.10)
33 - 49	102 (44.91)
50 - 64	18 (8.50)

of positive relationship emotional schema (namely comprehensibility, values, consensus, acceptance, differentiation, expression, and validation) had a significant negative correlation with the total score of domestic violence ($r = 0.21$, $P = 0.001$). Furthermore, there was a significant correlation between negative relationship emotional schemas with neuroticism and extraversion ($r = 0.38$, $P = 0.000$ and $r = 0.34$, $P = 0.000$, respectively). Moreover, a positive relationship emotional schema had a significant correlation only with extraversion ($r = -0.20$, $P = 0.002$). Figure 1 depicts the correlation matrix of the RESS dimensions.

Moreover, exploratory factor analysis was used to evaluate the construct validity of this scale. Before performing exploratory factor analysis, data screening was performed. In the first step, the outliers were deleted using each of the subscales' stem and leaf diagrams. In the next step, the Kaiser-Meyer-Olkin (KMO) test was used to determine the adequacy of sampling. The test results indicated that factor analysis could be performed for the present sample ($P < 0.000$, $KMO = 0.78$). Finally, the Bartlett's test of sphericity was performed to detect whether it is possible to determine a specific factor structure for the scale. In this regard, the test results were also significant, implying that the fac-

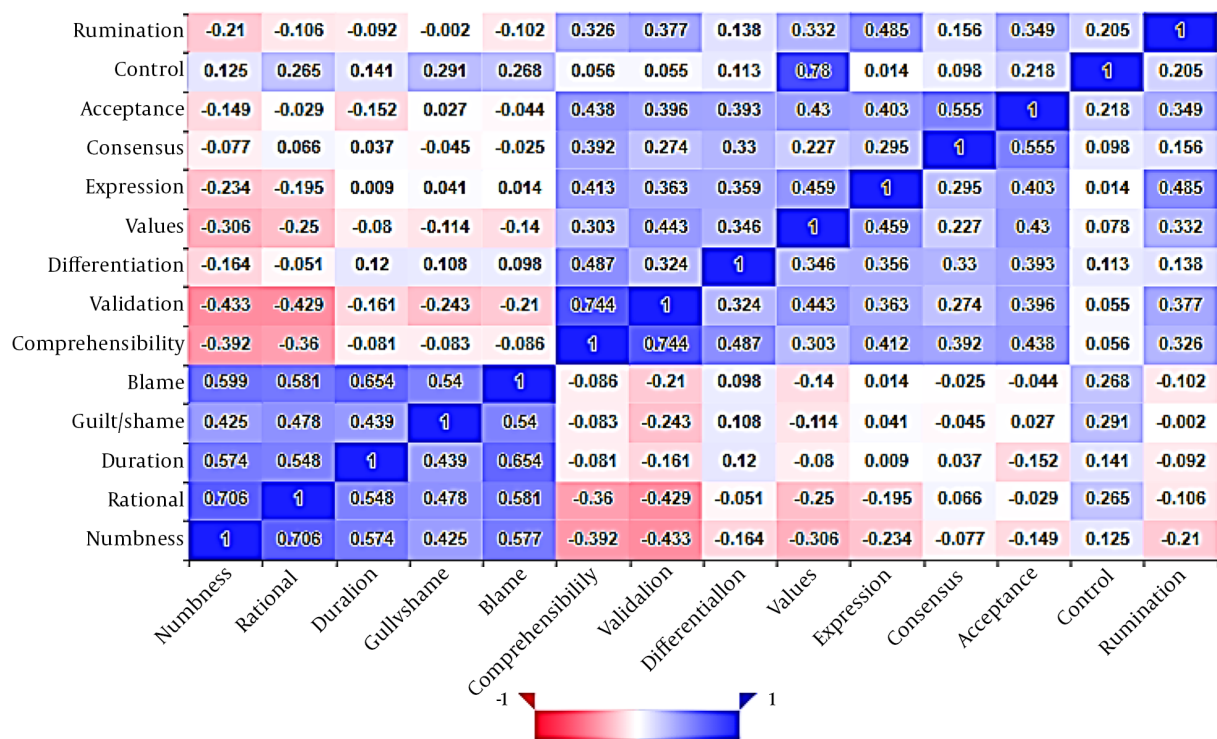


Figure 1. Correlation matrix

tor analysis could be utilized. To this end, the varimax rotation method was used to perform factor analysis. Table 3 shows the findings of the factor structure analysis. Factor loads and the variance values are presented to clarify the correlation between each item with the relevant subscales and descriptive data of the extracted factors.

As presented in Table 3, the variance of each factor accounted for 67.03% of the total variance. Table 3 reveals factor loads, eigenvalues, and the percentage of explanatory power of the variance. According to Table 3, all extracted factor loads are > 0.59. A careful examination of the scree plot indicated a four-factor solution accounting for 67.03% of the variance.

Exploratory factor analysis revealed a four-factor solution. The communality among the 14 items was in the range of 0.46 - 0.78. Four factors of the items were developed by using varimax rotation: Factor 1 (numbness, rational, duration, guilt/shame, and blame explained 23% of variance), factor 2 (comprehensibility, validation, differentiation, values, and expression explained 22% of variance), Factor 3 (consensus and acceptance explained 11% of variance), and Factor 4 (control and rumination explained 9% of variance) (Table 4).

5. Discussion

The present research was to assess the psychometric properties and factor structure of RESS (10) among the victims of domestic violence in Iran. To this end, the internal consistency method was used to evaluate the reliability of this scale, and the exploratory factor analysis, convergent validity, and internal correlations were performed to evaluate the construct validity of this scale. The findings of the present study revealed acceptable psychometric characteristics (i.e., factor structure, validity, and reliability) of RESS among Iran's population. This was the first study to assess the structure and psychometric properties of RESS. The reliability (internal consistency coefficients) of RESS was acceptable (0.71). The significant correlation of RESS with the total score of domestic violence and emotional, physical, and behavioral subscales confirmed the construct validity of the RESS. These findings are consistent with previous research indicating that emotional schemas are associated with marital dissatisfaction and marital conflict, and that the modification of emotional schemas can ameliorate emotion dysregulation components in individuals with a history of neglect and abuse (15, 16). Accordingly, the modification of couples' relationship emotional schemas

Table 2. Internal Consistency and Other Psychometric Indices of Items in RESS

Item	Scale Variance with Question Elimination	Correlated Whole Correction	Cronbach's Alpha by Removing Questions	Scale's Mean Score with Deleted Items	Squared Multiple Correlation
My partner helps me make sense of my emotions.	92.79	0.32	0.68	40.58	0.69
My partner helps me feel being understood and cared for when I talk about my feelings.	94.35	0.20	0.69	40.30	0.65
My partner criticizes me and tries to make me feel ashamed and guilty about the way I feel	87.51	0.33	0.68	38.07	0.40
My partner helps me understand that it is OK to have mixed feelings	89.60	0.41	0.67	40.51	0.38
My partner relates my painful feelings to remarkable values.	90.81	0.25	0.69	39.73	0.41
My partner thinks that I am out of control with my feelings.	87.97	0.33	0.68	38.33	0.22
My partner seems to be numb and indifferent when I talk about my feelings.	95.91	0.12	0.70	37.47	0.63
My partner thinks I am often irrational.	91.61	0.24	0.69	37.75	0.65
My partner thinks that my painful feelings just keep existing.	86.94	0.35	0.68	38.24	0.57
My partner helps me realize that many people also feel the way I feel.	89.20	0.34	0.68	40.12	0.41
My partner accepts and tolerates my painful feelings and doesn't try to make me change.	88.52	0.45	0.67	40.40	0.54
My partner seems to think over and over and seems to dwell on why I feel how I feel.	88.80	0.28	0.69	39.24	0.36
My partner encourages me to express my feelings and talk about how I feel.	89.63	0.39	0.67	40.52	0.45
My partner blames me for too upset feeling s.	87.12	0.39	0.67	37.88	0.59

can improve the quality of their relations and reduce domestic violence.

The exploratory factor analysis results in determining the construct validity of this scale revealed four extracted factors. Since the theoretical structure of the schema scale has not been examined using an experimental study, not enough information is available to compare the results of the present study with those of other studies. However, to explain the exploratory factor analysis results in this study, some of the structures proposed in the scheme scale seem to have significant overlap. According to the data analysis, a two-factor structure might be extracted: negative (namely rumination, blame, control, duration, numbness, guilt/shame, and rational) and positive (namely comprehensibility, values, consensus, acceptance, differentiation, expression, and validation) relationship schemas (Figure 1). However, the variable 'control' was not clearly loaded under this two-factor structure. This finding is consistent with previous research (17).

The present study had several limitations, some of which were related to the novelty of the proposed model and the limited data on the psychometric properties of the original version of this scale. Given the cultural differences in individuals' beliefs and attitudes towards their emotions and their expression in Iranian society and Western cultures, comparative research in this field is recommended to detect such differences so that the findings would be generalized to different communities and cultures. Although RESS showed an acceptable range of psychometric properties to be implemented in research studies, it is suggested to reinforce the other aspect of psychometric properties of RESS in future research and use this scale in other cultures. Another limitation of this study was the limited sample size. The present study's sample mainly consisted of women. Although the higher prevalence of domestic violence in women can be justified, it would jeopardize the external validity and generalization of the findings to both genders. Finally, the present study did not include other types of emotional relationships (e.g., white marriage, homosexuals, etc.), for which domestic violence may exist. One of the strengths of this study was that the scale was used in a study for the first time, and considering the predictive significance of this scale in domestic violence, it would promise interventions regarding relationship emotional schemas.

5.1. Conclusions

According to the findings, RESS is a valid and reliable self-report scale to appraise couples' emotional responses

Table 3. Special Values, Percentage of Variance Explanation, and Factor Loading

Elements	Primary Specials			Total Squared of Extracted Loads			Total Squared of Extracted Loads		
	Total	Percentage of Variance	Cumulative Percent	Total	Percentage of Variance	Cumulative Percent	Total	Percentage of Variance	Cumulative Percent
1	4.32	30.90	30.90	4.32	30.30	30.90	3.31	23.66	23.66
2	2.95	21.13	52.04	2.95	21.13	52.04	3.15	22.51	46.17
3	1.07	7.679	59.72	1.07	7.67	59.72	1.60	11.45	57.62
4	1.02	7.31	67.03	1.02	7.31	67.03	1.31	9.40	67.03
5	0.88	6.30	73.34						
6	0.74	5.28	78.62						
7	0.65	4.70	83.33						
8	0.50	3.59	86.92						
9	0.45	3.27	90.20						
10	0.40	2.88	93.08						
11	0.28	2.05	95.14						
12	0.25	1.82	96.96						
13	0.24	1.72	98.69						
14	0.18	1.30	100.00						

Table 4. Factor Loading of Items on RESS

Items	Factors			
	1	2	3	4
Numbness	0.74			
Rational	0.73			
Duration	0.84			
Guilt/shame	0.71			
Blame	0.86			
Comprehensibility		0.77		
Validation		0.74		
Differentiation		0.62		
Values		0.59		
Expression		0.71		
Consensus			0.85	
Acceptance			0.70	
Control				0.67
Rumination				0.67

and strategies to each other in Iranian society. As Leahy (7) suggested, it marital conflict and dissatisfaction and, consequently, domestic violence can be prevented by detecting and targeting couples' emotional schemas.

Footnotes

Authors' Contribution: Abbas Masoudzadeh did conceptualization, supervision, and resources. Somayeh Alami did investigation, writing and preparing the first draft and funding acquisition. Yazdan Naderi Rajeh did writing,

methodology, software, formal analysis. Mehdi Pourasghar did reviewing, and editing.

Conflict of Interests: None.

Ethical Approval: The study was conducted after receiving the code of Ethics from the Student Research Committee of the University (code IR.MAZUMS.REC.1397.1485).

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Informed Consent: When the participants were explained about the research objectives, we provided them with a written consent form. After signing the forms, the participants were included in this study.

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