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Original Article

Designing the Relationship Obsessive-Compulsive Inventory (ROCI) Based on Iranian Culture and Evaluation of Its Psychometric Properties

Soheila Ghomian[1*], Mohammad Reza Shaeiri[1], Hojjatollah Farahani[2]

Abstract

Objective: The purpose of the present study was to evaluate the factor structure, validity, and reliability of the revised Relationship Obsessive-Compulsive Inventory (ROCI), with emphasis on Iranian culture.
Method: The statistical sample consisted of 341 married students studying in Tehran universities in the academic year 2018-2019, who were selected by available sampling method. The New ROCI, Obsessive-Compulsive Inventory-Revised (OCI-R), Obsessive Beliefs Questionnaire (OBQ), Depression, Anxiety and Stress Scale (DASS), Dyadic Adjustment Scale (DAS), and Relationship beliefs inventory (RBI) were the tools of the present study.
Results: The Content Validity Index (CVI) and Content Validity Ratio (CVR) of the new ROCI were good. Also, there was a significant and negative correlation between all subscales and the total score of the new ROCI with all subscales and the total score of the DAS, and there was also a significant positive correlation between the subscales and the total score of the new ROCI with the subscales and the total score of OBQ, OCI-R, RBI, and DASS. Also, the two factor model explained 54.50% of the variance in the new ROCI. Furthermore, all of the confirmatory factor analysis indices of the new ROCI were better than the original ROCI. The results of test-retest correlation of the factor one and two of ROCI were 0.85 and 0.78, respectively. Also, the Cronbach's alpha of the factor one and two of ROCI were 0.60 and 0.74, respectively.
Conclusion: In general, it can be said that the new ROCI was different from the original ROCI, and the new ROCI had better indicators than the original ROCI.

Key words: *Culture; Obsessive-Compulsive Disorder; Symptom Assessment*

1. Department of Psychology, Faculty of Humanities, Shahed University, Tehran, Iran.
2. Department of Psychology, Faculty of Humanities, Tarbiat Modares University, Tehran, Iran.

***Corresponding Author:**
Address: Department of Psychology, Faculty of Humanities, Shahed University, Tehran, Iran, Postal Code: 3371794867.
Tel: 98-21 36270702, Fax: 98-21 51213564, Email: Soheila_ghomian@yahoo.com

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Obsessive-Compulsive Disorder (OCD) is a severely debilitating disorder (1). Many patients with OCD also have other psychiatric disorders at the same time (2), including body dysmorphic disorder, trichotillomania, eating disorders, impulse control disorders, and self-destructive behaviors. Also, the results of some studies suggest a link between OCD, Toure syndrome, autism and obsessive-compulsive schizophrenia (3-5).

A comprehensive assessment of the severity and persistence of OCD is the most important step in the clinical field and OCD research. Because symptoms of OCD are often internalized and patients with OCD no desire to express their symptoms, it usually takes years from the time symptoms occur to treatment, and can have devastating effects on one's performance. Thus, early evaluation and diagnosis of this disorder is very important (6). So far, many scales have been designed to measure OCD. In Iran, in addition to the most commonly used questionnaires, such as the Obsessive-Compulsive Inventory – Revised (OCI-R), Yale-Brown Obsessive Compulsive Scale (Y-BOCS), and the Maudsley Obsessive-Compulsive Inventory (MOCI), the psychometric properties of other questionnaires related to OCD have been investigated, including the Saving Inventory-Revised (SI-R) (7), Thought Fusion Instrument (TFI) (8), Hoarding Rating Scale-Interview (HRS-I) (9), and VOCI Mental Contamination Scale (VOCI-MC) (10).

Doron et al. (11) have proposed a tool to measure Relationship Obsessive Compulsive Disorder (ROCD), a disorder recently focused on obsessions and compulsions related to the relationship with the spouse and the characteristics of the spouse. One of these measures is the Relationship Obsessive-Compulsive Inventory (ROCI), a 12-item self-report scale that measures the severity of obsessive compulsive (OC) symptoms focused on relationship with spouse in three domains. These domains are the feeling a person has about his/her spouse, the feeling the person's spouse has about him/her, and the "rightness" to experience that relationship. In the study of Doron et al. (12), this tool showed a good internal correlation. The internal correlation coefficients of the subscales of this scale were obtained in the range of 0.60 to 0.92, which were significant at the level of $P < 0.001$. Regarding its validity, the subscales of this tool showed a good correlation with the subscales of OCI-R, all of which were significant in the range of 0.21 to 0.47 and at the level of $P < 0.001$. Also, its subscales showed a significant correlation with subscales of OBQ in the range of 0.16 to 0.34, with Depression Anxiety Stress Scale (DASS) in the range of 0.34 to 0.56, with the subscales of the anxiety and avoidance of Experiences in Close Relationships scale (ECR) in the range of 0.24 to 0.36 and with the Relationship Assessment Scale (RAS) in the range of -0.39 to -0.61 ($P < 0.001$). Also, the results of confirmatory factor analysis indicated that the three factors were suitable for this instrument. In this regard, the goodness of fit indices, such as CFI (0.96) and RMSEA (0.089), were obtained at the appropriate level.

The results of the study by Trak and Inözü (13), which aimed to investigate the psychometric properties of the Turkish version of ROCI on married individuals aged 18 to 63 years, showed that in confirmatory factor analysis, the factor structure corresponded to the factor structure of the original scale (12). In addition, the results of their study showed that ROCI has good predictive and concurrent validity. Also, it has a good internal correlation and test-retest reliability.

The scores of ROCI can distinguish ROCD symptoms from other OCD symptoms. Doron et al. (14) in a pilot study using the ROCI compared scores of 17 patients with ROCD, with scores of 18 patients with other themes of OCD. They also used the Mini-International Neuropsychiatric Interview (MINI) (MINI; 15) to achieve clinical diagnosis. Findings of the study showed a significant difference between the 2 groups in terms of scores of ROCI, $F(1.33) = 10.28$, $P = 0.003$, $\eta = 0.24$. The mean of scores of patients with ROCD ($M = 2.10$, $SD = 0.67$) were higher than patients with other OCD symptoms ($M = 1.16$, $SD = 1.02$). This difference was still significant with control of OCD severity and depressive symptoms. Thus, as the results of that study showed, ROCD symptoms appear to be distinct from other aspects of OCD.

Many OCD questionnaires have some limitations (16). Some of these limitations make these tools less efficient in terms of efficiency, empirical consistency, and precise measurement of OCD symptoms. The limitations of these tools include inability to distinguish between the severity and number of OCD symptoms (17); lack of attention to the broad, heterogeneous, and subjective nature of obsessive-compulsive syndrome (16); 1-dimensional measurement of obsessive-compulsive syndrome (18-20); separate assessment of obsessive-compulsive syndrome (18,21); insufficient attention to avoidance strategies of obsessive types (16); and the last and most important limitation is the lack of attention to the role of culture in the use of OCD tools.

Designing and preparing culturally appropriate tools is possible, even with many challenges (22). Alegria et al. (23) conducted a study in this regard. The purpose of their research was to translate a series of mental health tools from English into Asian and Latin to examine the prevalence of mental disorders in Asian and Latin American populations. In the process of the National Latino and Asian American Study (NLAAS), the researchers concluded that three key components are important to design quality tools: cultural relevance, equivalence, and generalizability. Cultural relevance implies that the tool must be related to the culture in which it is applied and designed in such a way that the respondent understands the items. Equivalence implies that the tool beyond the language being translated and the culture in which it is used must convey similar information, and the generalizability implies that the tool has usability in the used culture.

Thus, the mere translation of a tool does not make it applicable to another culture, but considering the interlanguage and intercultural differences, the validity of the tool should also be considered (24). Therefore, the necessity of restructuring the ROCI as a tool to measure the relationship theme of OCD— a theme that suggests individual and couple distress (11) — based on the findings of the conceptualization of ROCD in Iranian culture (25) and its psychometric properties in Iranian sample is important. The importance of such a tool, especially in terms of a comprehensive assessment of the persistence and severity of ROCD, difficulty to diagnose this disorder due to people's reluctance to express their symptoms and the existence of sensitive tools to treat the disorder in the clinical setting is remarkable (6). On the other hand, providing a suitable diagnostic tool, especially for ROCD, to prevent the spread of communication conflicts and ultimately to prevent the exacerbation of its symptoms is very important (12). Thus, considering the importance of a valid and reliable tool that can assess ROCD independently from the perspective of Iranian culture to be used in a variety of cases, including evaluating the psychiatric changes of individuals with ROCD, the current study aimed to evaluate the psychometric properties of the revised ROCI with emphasis on Iranian culture.

Materials and Methods

The present study was conducted as a descriptive study to modify the original ROCI items and to determine the validity and reliability of the new ROCI. The statistical population consisted of all married students studying in Tehran universities in the academic year 2018-2019. Participants were selected using available sampling method from Tehran, Shahid Beheshti, Shahed, Tarbiat Modares, Allame Tabatabai, Amir Kabir, Sharif and Kharazmi universities. On the other hand, to evaluate the validity of the new scale developed by the researcher, all experts (PhD in clinical psychology or PhD student in clinical psychology) were included in this study. In reviewing the new ROCI, 341 individuals finally agreed to participate in the study and the sampling method was available sampling method. Also, ten experts, using available sampling method, evaluated the modified scales. The criteria for entering the present study were being married, being students at the mentioned universities, and agreement to participate in the study.

Among the participants in the study, 28.44% were male and 71.55 % were female. Among the various universities where the sample studied, many of them studied at the University of Tehran (20.2%). Also, many of them studied humanities (59.8%) and postgraduate studies (36.1%). Their average age was 26.83 years and their average marriage period was 4.74 years. In this study, information about the sample remained confidential. This research has been approved by the ethics committee of Shahed University.

In this study, to evaluate the reliability of the new ROCI, Cronbach's alpha and correlation coefficient of test-retest were used. Convergent, divergent, and construct validity were used to assess the validity of this scale. To obtain convergent validity of the new ROCI, its correlation with OCI-R, DASS, RBI, and OBQ was used. Also, to obtain divergent validity of the scale, its correlation with DAS was used. In addition, exploratory factor analysis (using SPSS) and confirmatory factor analysis (using LISREL) were used to obtain construct validity.

The tools used in this research are as follows:

1. New Relationship Obsessive-Compulsive Inventory (New ROCI) (in accordance with Iranian culture): The new ROCI, based on the previous study (25), after extracting the categories from qualitative interviews with patients with ROCD, and collecting the opinion of the reviewers on the appropriateness of its content validity was designed and constructed. More information about this scale is provided in the results section .
2. Obsessive-Compulsive Inventory-Revised (OCI-R) (26): This scale is a revised version of Obsessive-Compulsive Inventory (OCI). This scale consists of six subscales and 18 items that are graded based on a 5-point-Likert scale (from 0 to 4). The subscales of OCI-R are washing, obsession, hoarding, ordering, checking, and undoing. The OCI-R has an appropriate internal consistency and test-retest reliability (27-30). In Iran, Mohammadi et al. (31) studied the reliability of the OCI-R. The results of their study showed the suitable internal consistency, calculated through the Cronbach's alpha coefficient (ranging from 0.51 to 0.72). In addition, the six factor structure obtained in the original research was confirmed by confirmatory factor analysis. Also, the results of their study showed that there were significant correlations between subscales of OCI-R ($P < 0.01$), but it was not too high (correlations were in the range of 0.26 to 0.80).
3. Obsessive Beliefs Questionnaire (OBQ) (Obsessive Compulsive Cognitions Working Group (OCCWG) (32): This is a 44-item self-report questionnaire developed to diagnose and evaluate the extent of obsessive beliefs by the OCCWG (32). The questionnaire consisted of six subgroups of responsibility for injury, threat estimation, perfectionism, need for certainty, importance of thoughts, control of thoughts, rated on a 7-point scale, ranging from 1 strongly disagree to 7 strongly agree. Cronbach's alpha range for subscales of this scale ranged from 0.87 to 0.93. Also, the correlation coefficients for test-retest of the subscales were 0.48 to 0.83. In addition, to obtain convergent validity of this scale, its correlation with the Interpretation of Intrusions Inventory (III) ranged from 0.41 to 0.79 ($P < 0.001$). Shams et al. (33) reported Cronbach's alpha coefficient and correlation coefficient of test-retest,

0.92 and 0.82, respectively. Convergent validity was obtained by two Madsley Obsessive-Compulsive Questionnaire and OCI-R, 0.57 and 0.50, respectively ($P < 0.01$).

4. Depression, Anxiety and Stress Scale (DASS) (34): This scale consists of 21 phrases related to symptoms of negative emotions (eg, depression, anxiety, and stress). Lovibond and Lovibond (34) reported that the internal consistency coefficients (Cronbach's alpha) of the three subscales of depression, anxiety, and stress were 0.91, 0.81, and 0.89, respectively. Also, the results of their research showed that the three factor models could better suit the data. In Iran, in the study of Asghari Moghadam et al. (35), the three factor structure of DASS was also confirmed. Also, the reliability of the scales was confirmed by examining the internal consistency coefficients (Cronbach's alpha higher than 0.70 in all subscales) and test-retest coefficients (for depression scale: 0.84, for the anxiety scale: 0.89, and for the stress scale: 0.91) ($P < 0.001$). In addition, the construct validity of the two scales of depression and anxiety was confirmed through using the correlation coefficient between the scores of the two scales with the scores of the Beck Depression Inventory (BDI) and the Four Systems Anxiety Questionnaire (FSAQ). In this regard, the correlations were in the range of 0.42 to 0.90, which were significant at the level of $P < 0.001$.
5. Dyadic Adjustment Scale (DAS) (36): This questionnaire is a 32-item tool for assessing the quality of the marital relationship in terms of the husband and wife or two people who live together. The DAS measures four dimensions: dyadic consensus, dyadic satisfaction, dyadic cohesion, and affectional expression. The total score is between 0 to 151. The higher scores indicate better relationship. The total score of DAS with Cronbach's alpha of 0.96, has a significant internal consistency. The internal consistency of the subscales is between good to excellent: dyadic satisfaction = 0.94, syadic cohesion = 0.81, dyadic consensus = 0.90, and affectional expression = 0.73 ($P < 0.001$) (36). Sharply and Cross (37) reported that the reliability of DAS was 0.96. In another study by Spanier, and Thompson (38), the Cronbach's alpha coefficient was 0.91. In Iran, in the study of Molazadeh (39), the reliability coefficient was 0.86 ($P < 0.001$) and Cronbach's alpha was 0.89. Using concurrent implementation of DAS and Lock-Wallace Marital Adjustment Test (LWMAT), the validity coefficient for 76 couples similar to the sample couples was obtained to be 0.90. ($P < 0.01$).
6. Relationship Beliefs Inventory (RBI) (40): This scale was built to measure the relationship beliefs in marital life and has five subscales which measures five ineffective relationship beliefs. These beliefs include “disagreement is destructive,” “the partner cannot change,” “mind reading is expected,” “the sexes are different, "and “sexual perfectionism.” Eidelson and Epstein (40) reported Cronbach's alpha coefficient of five subsamples of RBI to be in the range of 0.72 to 0.81. The reliability of RBI through test-retest was obtained to be 0.81. The Persian version of RBI is provided by Mazaheri and Pur Etamad (41) and in their study, the Cronbach's alpha of RBI was estimated as 0.75. Dehshiri (42) reported that Cronbach's alpha of RBI was 0.88.

Results

The results should be mentioned in two stages. The first step is to design a new ROCI.

The second stage is to determine the factor structure, validity, and reliability of the new ROCI .

First step: Designing the New ROCI

In order to fit the ROCI with Iranian culture, after extracting the concepts derived from the clinical interview in the previous study (25), these concepts were designed as a question and after going through the Content Validity Index (CVI) and Content Validity Ratio (CVR), which was accomplished by expert evaluation, some items were included on the ROCI and eventually became an ROCI that is applicable in Iranian culture .

Based on the categories obtained from interviews with individuals, eight questions were finally designed (Table 1). Then, to evaluate CVI and CVR, these questions were presented to ten experts and their views on the necessity of the terms, relevance to the content of the categories, simplicity and fluency, and transparency and clarity were examined. It is worth noting, however, that in the new ROCI, previous items of the original scale were retained and these new items were added to the previous items after expert evaluation. After expert evaluation, it became clear that item 2 needed to be modified. This item was modified and incorporated into the new ROCI items after expert reassessment and the suitability of CVI and CVR .

Second stage: Factor Structure, Validity, and Reliability of the New ROCI

The results of the present study showed that 71.55% of the sample were women and 28.44% were men. Also, Tehran University (20.2%) had the highest sample size and Sharif and Amir Kabir universities of technology (6.5% and 6.74%, respectively) had the lowest sample size. In addition, studying in humanities (59.8%) and art (0.9%) were the highest and the lowest, respectively. In terms of degrees,

Undergraduate (44%), and associate (0.6%) degrees had the highest and the lowest sample size, respectively. The mean age of students was 26.83 years (SD, 7.01) and their marriage duration average was 56.88 months or 4.74 years (SD, 69.74 months or 5.81 years). Also, as the results of the study showed, most of the sample individuals were not employed (77.1%) and most of the students had no children (73.6%).

In addition, the results of the current study showed that the mean of the total score of the new ROCI was 10.56 (SD, 6). Also, the descriptive results of the other scales were as follows: the mean total score of the DAS was 121.26 (SD, 19.76). The mean of depression, anxiety, and stress of DASS was 3.33 (SD, 3.34), 2.77 (SD, 2.66), and 6.11 (SD, 4.04), respectively. The mean score of the OCI-R was 16.24 (SD, 11.10). The mean total score of the RBI was 79.22 (SD, 16.56), and the mean total score of the OBQ was 166.63 (SD, 40.50).

The results of the divergent validity of the new ROCI in the form of correlation with DAS and the results of the convergent validity of the scale in the form of correlation with DASS, OBQ, OCI-R, and RBI are presented in Table 2.

As the results in Table 2 indicate, there was a significant and negative correlation between all subscales and the total score of the new ROCI with all subscales and the total score of the DAS. There was also a significant and positive correlation between the subscales and the total score of the new ROCI with the subscales and the total score of OBQ, OCI-R, RBI, and DASS.

Before exploring the exploratory factor analysis of the new ROCI, in the first step, the exploratory factor analysis assumptions were examined.

- Examination of Sample Normality: Considering the significance of Kalmogorov-Smirnov test and Shapi -ro-Wilk test results, the sample used in this part of the study did not show a normal distribution. For this reason, in the method part of SPSS program for exploratory factor analysis, principal axis factoring method was used.

- Correlation Examination of the Items of the New ROCI with Total Score: In this step, correlation of items with total score was investigated. Items with low correlation with total score (correlation less than 0.33) were excluded from factor analysis (43). The correlation results of the new ROCI items with the total score showed that all correlations were significant at the 0.01 level, except for items 4 and 15 that were excluded from the exploratory factor analysis .

- Correlation Examination of the Items of the New ROCI with Each Other: In the second step, the correlation matrix of questions was examined. In the obtained correlation matrix (matrix 21*21), in general, many of them had correlations above 0.30 (44). Thus, the exploratory factor analysis process of the new ROCI can be performed. In this regard, exploratory factor analysis was performed on 50% of the sample volume and on the remaining 50%, subsequently, confirmatory factor analysis was performed.

In the second step, for factor analysis, Kaiser-Meyer-Olkin measure (KMO) of sampling adequacy was calculated to ensure the adequacy of sample size. Then, since the correlation between the test questions is the basis of factor analysis, to determine the correlation between the variables is not zero, in the third step, the Bartlett's test of sphericity was used. The KMO values were obtained to be 0.90. Since this value is greater than 0.60, the sample size is sufficient for factor analysis. Also, the chi-square in Bartlett's test was 2.05, which was statistically significant ($P < 0.001$), and indicated that the data correlation matrix is not zero in the society (44, 45).

In the next step, appropriate rotation was investigated. We first used the direct Oblimin rotation and examined the correlation between factors. The results showed that all correlations were less than 0.33, so the quartimax rotation was used (44).

Thus, the principal axis factoring method with quartimax rotation was used for factor analysis. Table 3 shows the factor loadings, eigenvalues, and percent of variance for the factor obtained from the quartimax rotation (Figure 1).

The results of Table 3 show that the two factor model explains 54.50% of the variance in the new ROCI. The remarkably, in relation to the factors obtained from the quartimax rotation, items with a factor loading less than 0.3 were not shown in the factor analysis table. Also, the results of the anti-image table, the output of exploratory factor analysis, which is a 21*21 matrix and shows correlation between items related to different factors, showed that none of the items on this scale had correlations with items on other factors above 0.3 and no items were omitted from this matrix. After examining the content of the factors, factor one referred to the obsession with loving a spouse, being loved by a spouse, and "correcting" the relationship, and factor two encompassed compulsive behaviors in loving the spouse, being loved by the spouse, and "correcting" the relationship. Items that were included in this scale based on materials obtained from interviews with individuals and ultimately remained in exploratory factor analysis were items 1 (number 1 in new scale), 3 (number 3 in new scale), 5 (number 4 in new scale), 7 (number 6 in new scale), 12 (number 11 in new scale), 16 (number 14 in new scale), and 19 (number 17 in new scale). Item 1 focuses on "correctness" of relationship, item 3 on excessive comparison of spouse relationship with premarital perception, items 5 and 16 on extreme thinking about lack of strong relationship with spouse (emotional strife), and items 7, 12, and 19 refer to compulsive behaviors related to neutralizing disturbing thoughts about loving a spouse, being loved by the spouse, and being "right" with the spouse, respectively.

In the next step, parallel analysis was used to select the acceptable factors obtained from exploratory analysis. The results of the parallel analysis showed that the eigenvalues of all the main factors were higher than the special percentile level values obtained from the parallel analysis, but according to Table 3, the first of two factors were considered.

In order to verify the construct validity of the new ROCI, confirmatory factor analysis of this scale was performed and compared with the results of factor analysis of its original scale. The indicators associated with confirmatory factor analysis without covariance liberalization are shown in Table 4.

The results in Table 4 show that all of the confirmatory factor analysis indicators of the new ROCI are better than the confirmatory factor analysis indicators of the original ROCI. By examining the chi-square difference of the factors of the new scale with the factors of the original scale (291/85) compared to the chi-square of the table (43.77) and by examining the chi-square difference of the factors of the new scale with exploratory factors of the original scale (189/05) compared to the chi-square of the table (43.77) at the significant level of 0.05, it can be concluded that the difference of the chi-square is significant. On the other hand, the difference between the RMSEA indicators in both comparisons is greater than the standard value (0.015) (46). Regarding the CFI difference, in both comparisons, it is greater than the standard value (-0.01) (46). Thus, in general, it can be said that the new ROCI differs from the original ROCI (based on external or exploratory factors) and the new ROCI has better indicators than the original ROCI (based on external factors or exploratory factors). Next, a new ROCI structural model is presented.

The results of the reliability of the new ROCI shows that the test-retest correlation for factor one, factor two, and the total score are 0.85, 0.78, and 0.79, respectively. Therefore, all the test-retest correlations of the ROCI are positive and significant ($P < 0.01$). Also, Cronbach’s alpha for factor one, factor two, and total score is 0.60, 0.74, and 0.83, respectively. Based on the results, it can be concluded that the Cronbach's alpha of the subscales and the total score of the new ROCI are within the acceptable range.

Thus, based on the results, the new ROCI has good validity and reliability.

Table 1. Designed Phrases in New ROCI Based on Iranian Culture

Number	Designed phrases
1	It is difficult for me to give up the thought that "the emotional connection between me and my spouse is not very strong"
2	Doubt about the love affair between me and my spouse, annoys me
3	I often compare my relationship with my spouse with the one I had before marriage
4	I often compare the emotional connection with my spouse with the emotional connection of my relatives and acquaintances.
5	By comparing the emotional connection between myself and my spouse with couples who have a troubled relationship, I try to break free from the "lack of emotional connection with my spouse".
6	When I compare the relationship with my spouse with the one I had before marriage, there is nothing I can do and only these thoughts are repeated in my mind.
7	I avoid watching movies or going to parties that make my spouse in love
8	Thinking of the times when I have a good love affair with my spouse, I try to free myself from the doubt about my love affair with my spouse.

Table 2. The Results of Correlation of the New ROCI with DAS, DASS, OCI-R, OBQ, and RBI*

		ROCI Factor 1	Factor 2	Total score
DAS	dyadic satisfaction	-0.46**	-0.28**	-0.53**
	dyadic cohesion	-0.37**	-0.16*	-0.39**
	Dyadic consensus	-0.44**	-0.10*	-0.41**
	affectional expression	-0.39**	-0.14*	-0.39**
	Total score	-0.51**	-0.20*	-0.52**
DASS	Depression	0.32**	0.38**	0.38**
	Anxiety	0.23**	0.22*	0.24**
	Stress	0.36**	0.34**	0.37**
OCI-R	washing	0.09	0.16	0.13
	obsession	0.35**	0.35**	0.38**
	hoarding	0.24**	0.23*	0.25**
	ordering	0.09	0.19*	0.15
	checking	0.28**	0.29**	0.31**
	undoing	0.21**	0.21*	0.23**
	Total score	0.28**	0.32**	0.32**
RBI	“disagreement is destructive”	0.41**	0.19*	0.44**
	“mind reading is expected”	0.27**	0.25**	0.37**
	“the partner cannot change”	0.16	0.24**	0.28**
	“sexual perfectionism”	0.05	0.42**	0.30**

	“the sexes are different "	0.07	0.27**	0.22**
	Total score	0.33**	0.42**	0.51**
OBQ	responsibility for injury/ threat estimation	0.31**	0.29**	0.32**
	Perfectionism/ need for certainty	0.27**	0.20*	0.26**
	importance of thoughts/ control of thoughts	0.25**	0.28**	0.28**
	Total score	0.32**	0.29**	0.33**

** P<0.01, * P<0.05

* New Relationship Obsessive-Compulsive Inventory (ROCI), Obsessive-Compulsive Inventory-Revised (OCI-R), Obsessive Beliefs Questionnaire (OBQ), Depression, Anxiety and Stress Scale (DASS), Dyadic Adjustment Scale (DAS), and Relationship beliefs inventory (RBI)

Table 3. Factor loadings, Eigenvalues, Percentage of Variance and Cumulative Variance Percentage for Extracted Factors in New ROCI

	Factors	
	Factor 1	**Factor 2**
Item 3		
Item 2		
Item 8		
Item 16		
Item 18	0.90	
Item 17	0.87	
Item 9	0.86	
Item 5	0.82	
Item 1	0.78	
Item 10	0.75	
Item 20	0.69	0.61
Item 13	0.67	0.60
Item 11	0.60	0.55
Item 21	0.52	0.55
Item 14		0.52
Item 12		0.50
Item 7		0.42
Item 6		0.42
Item 19		0.39
Eigenvalues of extracted factors	8.32	2.04
Percent of variance	43.81	10.76
Percentage of cumulative variance	43.81	54.50

Table 4. Evaluation Indicators for Model Fitting in New ROCI and Original ROCI

	New ROCI	**Original ROCI**	
Index	**Index value**	**Index value**	**Acceptable value (Tabachnick and Fidell, 2007)**
Chi-Square/df	1.99	11.62	3<
RMSEA	0.07	0.15	0.06 < or 0.08<
Standardized RMR	0.06	0.07	0.05 < or 0.08<
GFI	0.83	0.82	0.8 > or 0.9>
AGFI	0.79	0.73	0.8 >
NFI	0.93	0.91	0.8 > or 0.9>
NNFI	0.96	0.89	0.9 >
CFI	0.96	0.92	0.90 > or 0.95>
RFI	0.92	0.88	0.9 >
IFI	0.96	0.92	0.9 >

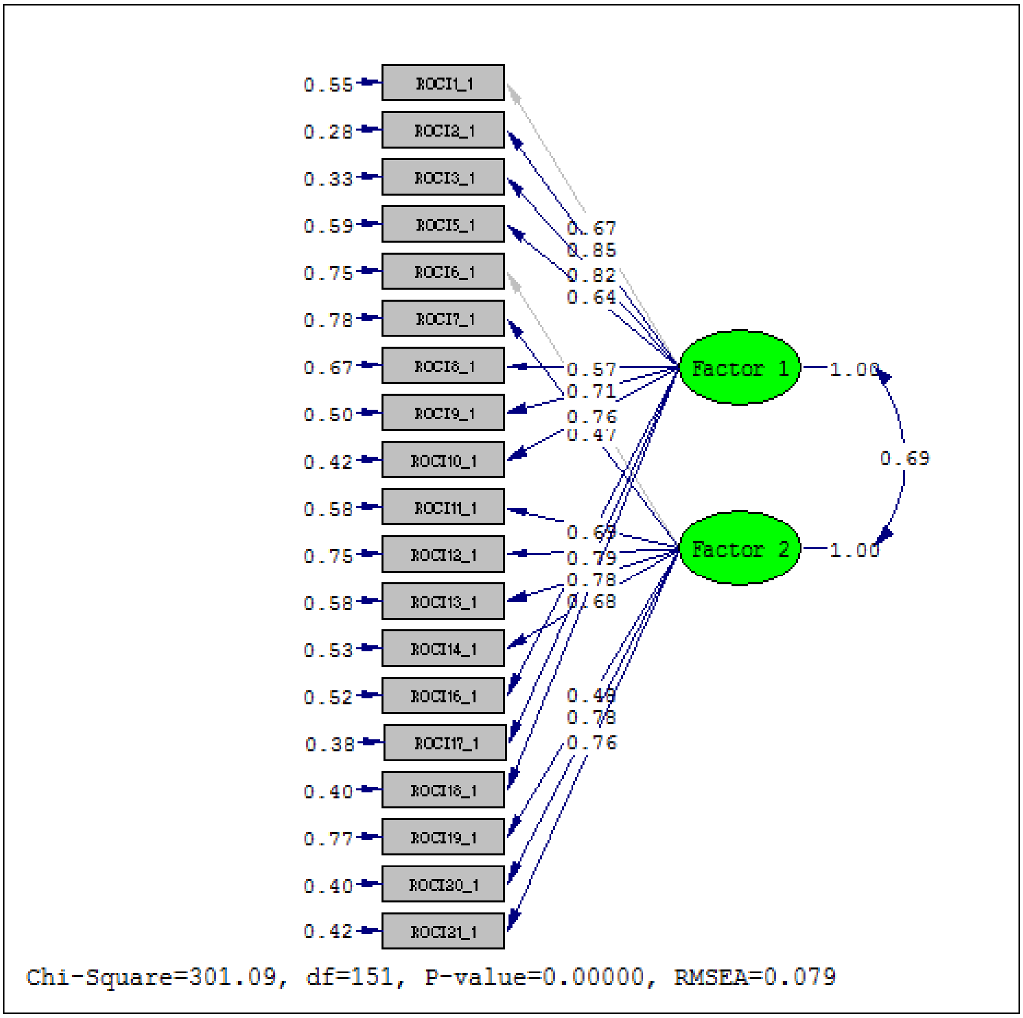
0.55
ROCI1_1
0.28
ROCI2_1
0.33
ROCI3_1
0.59
ROCI5_1
0.75
ROCI6_1
0.78
ROCI7_1
0.67
ROCI8_1
0.50
ROCI9_1
0.42
ROCI10_1
0.58
ROCI11_1
0.75
ROCI12_1
0.58
ROCI13_1
0.53
ROCI14_1
0.52
ROCI16_1
0.38
ROCI17_1
0.40
ROCI18_1
0.77
ROCI19_1
0.40
ROCI20_1
0.42
ROCI21_1
0.67
0.85
0.82
0.64
0.57
0.71
0.76
0.47
0.69
0.79
0.78
0.68
0.49
0.78
0.76
Factor 1
1.00
0.69
Factor 2
1.00
Chi-Square=301.09, df=151, P-value=0.00000, RMSEA=0.079

Figure 1. Structural Model of the New Relationship Obsessive-Compulsive Inventory

Discussion

The results of the present study showed that the new ROCI has good reliability and convergent, divergent and construct validity. The new ROCI was significantly different from the original ROCI and showed better indicators in terms of chi-square, CFI, and RMSEA. In addition, it had better divergent validity as well as better convergent validity, especially with the OBQ compared to the original ROCI, which probably indicates a better adaptation to Iranian culture and its suitability for implementation in Iranian society.

Also, in relation to the new ROCI, two factors eventually emerged, which the first included obsessive thoughts about the spouse and the second involved coping behaviors against obsessive thoughts. Items on this scale, similar to the ROCI of Doron et al. (12), indicated doubt about loving a spouse, being loved by her/him, and communicative perfectionism. The distinguishing feature of this new scale from the Doron et al. (12) scale was the greater breadth of items on coping behavior that have been dealt with very narrowly in the Doron et al. (12) scale. Also, on this new scale, items related to emotional conflict have been added, which refers to the couple's emotional relationship.

After the implementation of the new ROCI, its validity and reliability were evaluated. In general, the reliability findings, using the Cronbach's alpha, and the test-retest correlation of the new ROCI are in line with the research by Doron et al. (12) and Trak and Inözü (13).

In the present study, the DASS, OCI-R, RBI, and OBQ were used to evaluate the convergent validity of the new ROCI. Also, the DAS was used to investigate the divergent validity of this scale.

The results of this study, in line with the researches by Doron et al. (11, 12), Szepsenwol et al, (47) and Trak and Inözü (13), showed that there is a significant positive relationship between the new ROCI and OCI-R. In the study by Doron et al. (12), similar to the current study, it was shown that there is a moderate correlation between ROCI and OCI-R (48), and in particular, the total score of ROCI showed a moderate correlation with the total score of OCI-R (r = 0.45) and the scores of its subscale (ranging from 0.28 for neutral to 0.47 for obsessions). In fact, as shown by Doron et al. (11), similar to the present study, obsessions and compulsive behaviors related to ROCD, similar to OCD, lead to individual distress and often affect social, occupational, and other areas of life. Mental occupations about communication are often ego-dystonic, meaning that they are inconsistent with the person's perception of relationship with her/his spouse, or may be inconsistent with one's intrinsic values. These mental conflicts are perceived as unacceptable and unwanted, and often the individual feels guilty and embarrassed by their occurrence and/ or content (11).

In addition, the results of the current study showed a significant negative correlation between the new ROCI and DAS. In fact, marital adjustment refers to the satisfaction of spouses in all aspects of living together (49). Because OCD exposes one to stress, strife, extreme anxiety, and as a result of strained relationships, it is a dangerous factor in sexual and marital problems. The research by Alimardani Soumee (50), in line with the current study, showed that there was a significant difference between marital satisfaction in those with OCD and normal individuals. In fact, the mean scores of marital satisfaction in individuals with OCD were lower than those of normal participants. The research by Mohammadi et al. (51) also showed that the more severe OCD is associated with lower marital adjustment. As past research has shown, when the focus of OCD symptoms is on the relationship itself, it has a more devastating effect on the couple's intimate communication (52). Also, previous researches showed that OCD has a negative impact on communication performance (53), and these effects in turn exacerbate OCD symptoms. For example, the pressures that patients with OCD exert on their spouse to act in accordance with their obsessions are one of the factors of communication tensions and conflicts and impair the quality of communication (54). Accordingly, spouse adjustment with OCD symptoms (such as participation in obsessive rituals or avoidance of anxious situations) is associated with exacerbated OCD symptoms, decreased treatment outcomes, and decreased life satisfaction (55). Thus, it can be expected that in line with the study by Doron et al. (12) and Trak and Inözü (13), there is a significant negative correlation between the new ROCI with the subscales and the total score of the DAS.

Also, the results of the current study are consistent with previous researches (11, 12, 47) and showed a significant positive relationship between the new ROCI and DASS. In many studies, there has been a close relationship between obsession and anxiety from the semantics point of view (56, 57). Many findings indicated that more than 75% of patients with OCD also have anxiety (58). In addition, depression has a high prevalence in OCD. The results of various studies showed that depression is the best predictor of low quality of life in patients with OCD (59-62). Between one-third (53, 63) to two-thirds (64) of patients with OCD are clinically depressed. Apter et al. (65) concluded that approximately 50% of patients with OCD achieved scores above 30 (i.e., severe depression) on the Beck Depression Inventory (BDI). Results of 1 study showed that 37% of patients with OCD had secondary depression and 29% of patients with OCD were depressed before having OCD (63). Some also speak of the overwhelming sense of responsibility and perfectionism in OCD that are also characteristic of depressed individuals (66). Thus, it can be concluded that just like many patients with OCD who experience other psychiatric disorders, such as anxiety and depression, at the same time (2), patients with ROCD also have other mental disorders, such as depression and anxiety (11). In this regard, the correlation of the new ROCI with the DASS was obtained in line with the scale by Doron et al. (12) and Trak and Inözü (13).

In addition, in the current study, there was a significant positive relationship between the new ROCI and RBI. In this regard, Szepsenwol et al. (47), in line with current research, showed that individuals with ROCD achieved high scores on maladaptive beliefs related to communication. In conclusion, maladaptive beliefs related to communication play a prominent role in the formation and persistence of ROCD. Researches indicated that satisfaction in couples' relationships is highly correlated with communication beliefs (67, 68). The results of Mansour and Abdolmohammadi (69) also showed that mind-reading and destructive expectation of dissent explains 42% of the adjustment changes. In fact, irrational beliefs are 1 of the barriers to communication and according to Ellis (70), they may even lead to neuroticism and communication disruption.

Another result of the current study was a significant positive correlation between the new ROCI and OBQ, which is in line with the research of Doron et al. (12) and Trak and Inözü (13). In this regard, the importance of cognitive factors in OCD can be considered. In fact, researchers have proposed several models for OCD, each of which emphasizes a specific factor, but in all of these theories and models, cognitive factors are considered to be the core of OCD (71-73). OCD theories consider irrational beliefs to be the cause of OCD as well as the therapeutic intervention. Many studies suggest that cognitive dimensions in general and areas of particular beliefs, in particular, can be proposed as cognitive features of OCD (71, 73, 74). The results of Salek Ebrahimi et al. (75) also showed that people with OCD have more cognitive error than other patients, such as patients with social anxiety.

Limitation

One of the most important limitations of the current study was the mere use of the student sample and consequently the inability to generalize the results to other married groups. Also, using the available sampling method and restricting access to professionals to evaluate new items of the new ROCI were other limitations of the current study.

Conclusion

In general, it can be said that the new ROCI was different from the original version, and the new ROCI had better indicators than the original version. Therefore, it seems that the new version of this questionnaire is more applicable in Iranian society due to its adaptation to Iranian culture. However, more research is needed in this regard.

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Conflict of Interest

None.

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