Structural Modeling of Object Relations Mediated by Cognitive Emotion Regulation to Predict the Love Trauma Syndrome in Female Students

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Abstract

Background: Love trauma syndrome includes a set of symptoms manifesting after the end of an emotional relationship and negatively affecting performance in various areas.

Objectives: The current study aimed at determining the effect of object relations mediated by cognitive emotion regulation on the prediction of love trauma syndrome in female students.

Methods: The correlation-based structural equation modeling was employed as a research method. The statistical population included all female students in Kerman, Iran, in the academic year of 2019-20. A total of 243 subjects were selected by multi-stage cluster sampling. Data collection instruments included the Ross love trauma inventory (LTI), the Bell object relations and reality inventory (BORRTI), and cognitive emotion regulation questionnaire (CERQ). Data analysis was performed by the structural equation modeling using SPSS and LISREL software.

Results: The study findings indicated that object relations directly affect the cognitive regulation of negative emotion; on the other hand, cognitive emotion regulation plays a mediating role between object relations and love trauma syndrome. According to the findings of the structural equation modeling, the Root Mean Square Error of Approximation was 0.037, and the model had a good fit.

Conclusion: The present study findings indicated the mediating role of cognitive emotion regulation between object relations and love trauma syndrome. Hence, the mentioned variables can be considered in interpersonal, pedagogical, family, and therapeutic relationships.

Keywords: object relations, cognitive emotion regulation, love trauma syndrome

Introduction

Love and belonging needs are one of the main human characteristics and basic needs from childhood to old age [1]. A happy and self-actualized adult is considered as an individual who can love and build long-term relationships [2]. Love is one of the most amazing and also the most painful emotions to experience. Romantic relationships may break up for a reason, which is one of the most painful events experienced during life [3].

Females are more vulnerable to socio-psychological harm than males and are at higher risk of depression in response to problems in romantic relationships [4].

Love trauma syndrome was introduced by Ross [5]. It includes a set of severe signs and symptoms manifesting after the breakdown of a romantic relationship, disrupting performance in educational, social, and professional areas, leading to maladaptive reactions, and remaining for a long time.

In the present study, object relations are considered as an act of I, which is a common concept in many psychodynamic theories. Object relations are the basic components playing a

pivotal role in explaining health, psychopathological forms, and even personality structures. Generally, object relations are defined as inner images of the self and other, as well ashes manifestation of these images in interpersonal situations [6]-i e, the capacity of individuals to establish relationships formed in the first years of life [7]. In other words, object relations theory is the process of developing a psyche in relationship with others in the childhood environment. According to the object relations theory, interpersonal relations and adulthood life rely on family relationships, especially between mother and child [8].

Since self-injurious behaviors [9], suicidal thoughts [10], depression [11], disruption in attachment styles and interpersonal difficulties [12], changes in mood, self-esteem, and social motivation [13], and anxiety manifest following relationship breakdown [14], the emotional cognitive regulation is one of the main ways to cleverly deal with stressors that actively interact with coping strategies [15]. Cognitive emotion regulation implies the employment of thoughts and behaviors affecting emotions, and cognitive emotion regulation refers to the way that a person cognitively processes his/her emotions when faces traumatic and stressful events [16].

Previous studies showed that the ability to regulate emotion develops early in life through exchanging interpersonal emotions between caregivers and the child. The quality of emotional exchanges between caregivers and child plays a pivotal role in the capacity for emotion regulation during adulthood (Huh, 2017). It seems that childhood traumas prevent the development of emotion regulation in a healthy manner. Childhood traumas especially repeated interpersonal ones between the caregiver and the child, interfering with the development of emotional regulation skills [17].

Based on the findings of other studies, people who grow up in emotionally stressful families are more likely to suffer and be insecure about their behaviors [18]. Therefore, parents and caregivers play a pivotal role in shaping, expressing, and regulating the emotional world of the child.

According to the theoretical background, object relations are the outcomes of not meeting the basic needs in relationship with parents in the early childhood environment and affect subsequent intimate relationships. Therefore, it is expected that people who suffer from clinical symptoms, such as depression and anxiety, for months after the deterioration of a romantic relationship differ from those who have the same experience in a shorter time with less difficulties. Identification of the involved factors is crucial in prediction, as well as prevention and treatment of such difficulties.

Given the theoretical background, object relations are the outcome of not meeting the basic needs in early childhood environments and relationship with the parents; however, such communication patterns affect the subsequent intimate relationships, so that such individuals even several months after the end of a romantic relationship still demonstrate clinical symptoms, such as depression and anxiety. Therefore, identifying the factors involved in both the prediction and prevention and treatment of such health issues is helpful. [19].

Therefore, the present study aimed at providing research evidence on the effect of object relations on relationship breakdown by the mediating variable of cognitive emotion regulation.

Methods
The present study used the correlation-based structural equation modeling (SEM) as the research method. The statistical population included all female students in Kerman, Iran, in the academic year of 2019-20. The sample size was determined using the method described by Klein [20] as the suitability of the normal size of 200 for structural equations. However, a total of 250 subjects were enrolled using the multi-stage cluster sampling method, considering the probability of incomplete questionnaires. Demographic variables, including age, level of education, economic status, number of relationship breakdowns, and duration of involvement in relationships, were evaluated. Informed consent was obtained from all the participating students. The research project was approved by the Vice-Chancellor for Research of the relevant universities. It was a group research, and the mean age of the participants was 23 years. After attending the universities, the researcher explained the study objectives to students in order to implement the questionnaires, and they were asked to participate in the study if they were

interested and accurately complete the questionnaires. All the subjects were assured of the confidentiality of their information, and the university officials were also assured that the research results would be placed at their disposal if they are interested.

Love trauma inventory (LTI): It is a scale developed by Ross (1999) to assess the intensity of love trauma [5]. LTI consists of 10 four-choice items, and the respondent should choose the most appropriate one based on his/her traumatic experience of love. LTI provides an overview of the extent of physical, emotional, cognitive, and behavioral disturbances. Scores ranging from 20 to 30 are considered as a serious experience of love trauma syndrome, 10 to 19 as a more tolerable love trauma syndrome, and 0 to 9 as a tolerable and controllable syndrome, not seriously destroying life. A score of 20 is also considered as the cutoff point. The internal consistency coefficient (alpha coefficient) of LTI was 0.81, and its validity coefficient was 0.83 using the test-retest method with a week interval in a group of 48 students [21].

The Bell object relations and reality inventory (BORRTI): It is a 90-item inventory designed by Bell et al., [22] from which only the object relation items were used in the present study. It is standardized for both clinical and non-clinical populations and is used in many studies on interpersonal relationships and the diagnosis and prediction of psychological traumas. BORI consists of 45 true/false items and offers a more accurate and valid assessment of object relations through four subscales of alienation, insecure attachment, egocentricity, and social inadequacy. To complete the questionnaire based on the provided guide, the subject should choose the true or false answer for each item. For scoring, true answers are given1 point, while some items are scored reversely, according to the provided key. The sum of scores in each subscale is considered as the score of that subscale. In terms of the reliability and validity of the questionnaire, Bell et al. (2007) reported that the BORI has a high level of discriminant validity since it can differentiate the clinical population; in addition, an acceptable validity is estimated for this instrument due to its high correlation with other psychological trauma assessment tools. A preliminary assessment of its validity and reliability was conducted by Hadinejad et al. [23]. They reported the Cronbach's alpha coefficient of 0.78 to 0.90 for the four object relations subscales.

Cognitive emotion regulation questionnaire (CERQ)

The CERQ designed by Garnowski et al., was used in the current study [24]. It is a 36-item self-report instrument scored based on a five-point Likert scale from always to never to assess post-traumatic cognitive emotion regulation strategies. In general, nine factors of CERQ can be placed in two general subscales of positive and negative emotion regulation. The alpha coefficient for the subscales of CERQ ranges from 0.71 to 0.81. The Persian version of the questionnaire was validated in Iran by Samani and Sadeghi [25], and its reliability was reported 0.62 to 0.91.

Descriptive statistics, such as mean, standard deviation, and Pearson correlation coefficient were used in the present study; to evaluate the fitness of the hypothetical model, path analysis using AMOS and SPSS version 21 was utilized.

Results
Totally, data of 243 subjects were analyzed. First, the demographic data of the subjects were analyzed, and the results showed that the mean age was 23±3 years. In terms of the numbers of relationship breakdown, 59.5% experienced once, 23.5% twice, 6% three times, and 11% more than three times. In terms of duration involved in the relationship, it was one month in 12.5%, 1-6 months in 28.5%, 6-12 months in 22%, and more than 12 months in 37%. In terms of income status, 38% belonged to high, 58% middle, and 4% low classes. Also, the highest level of education was a bachelor's degree (n=146, 60%). Table 1 presents descriptive data of the study variables in mean, standard deviation, skewness, and elongation. Klein (2011) suggests that the distribution of variables should be normal in causal modeling. He also stated that the elongation and skewness of variables should vary in the range from-2 to+2. Therefore, the presumption of causal modeling- i e, univariate normality, is established.

Table 1: Descriptive data of the study variables

variable	Mean	SD	Elongation	Skewness
Love trauma syndrome	16.84	4.17	0.89	0.94
alienation	7.24	4.54	1.02	0.46
insecure attachment	7.85	4.27	0.57	0.95
egocentricity	6.44	3.34	0.92	0.58
social inadequacy	6.38	2.64	0.84	0.67
Object relations	27.72	5.74	0.67	0.54
Positive refocusing	10.05	3.72	0.52	0.74
Positive reappraisal	11.02	4.41	0.92	0.35
positive strategy	21.08	6.84	0.42	0.27
Self-blaming	11.59	3.24	0.37	0.78
Catastrophizing	11.24	3.68	0.99	0.54
negative strategy	22.84	6.55	0.57	0.62

According to Table 2, all variables were significant at 0.01% and 0.05% levels.

According to Table 3, all the indicators show a good fit for the presented model. In the final model presented in the study, the ratio of Chi-square to the degree of freedom was 1.14, goodness-fit index (GFI) 0.957, adjusted goodness-fit index (AGFI) 0.944, the incremental fitness index (IFI) 0.962, Tucker-Lewis index (TLI) 0.948, normalized fitness index (NFI) 0.940, and the root mean square error of approximation (RMSEA) 0.037

Table 2: Results of the correlation matrix of the study variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Love trauma syndrome	1											
alienation	0.57**	1										
insecure attachment	0.21*	0.68*	1									
egocentricity	0.27*	0.74**	0.75**	1								
social inadequacy	0.26**	0.69**	0.70**	0.67**	1							
Object relations	-0.46**	-0.33**	-0.34**	-0.28**	-0.27**	-0.37**	-0.39**	-0.34**	1			
Positive refocusing	-0.26**	-0.19*	-0.35**	-0.18**	-0.29**	-0.35**	-0.34**	0.32**	0.72**	1		
Self-blaming	0.28**	0.41**	0.28**	0.64**	0.49**	0.59**	0.59**	0.57**	0.33**	0.59*	1	
Catastrophizing	0.28**	0.41**	0.28**	0.64**	0.49**	0.59**	0.59**	0.57**	0.35**	0.38**	0.56*	1

*P≤0.05; **P≤0.01

Table 3 shows the RMSEA values obtained in the present study and the acceptable threshold level of each fitting index. According to data shown in Table 3, all fitted indices were at the desirable level, and it can be concluded that the tested model fitted the data well. Figure 1 shows the tested model.

Table 3: Model fit indices

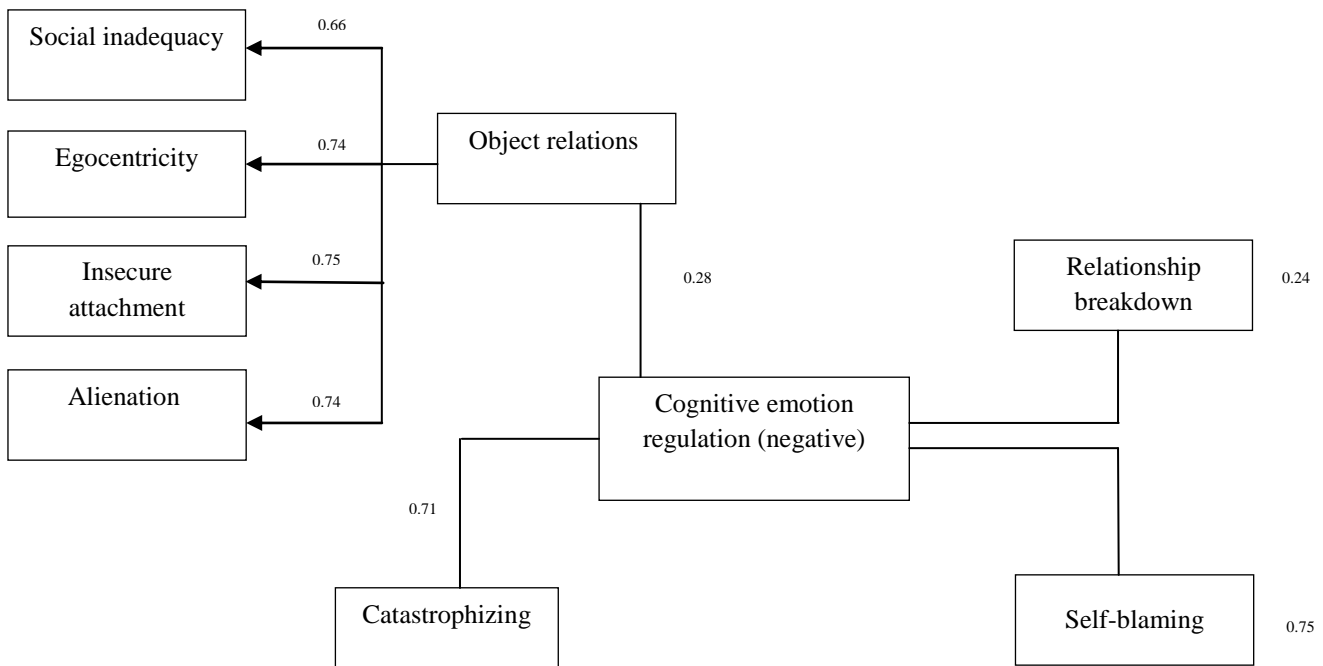| Index/Pattern	χ^2/df	GFI	AGFI	IFI	TLI	CFI	NFI	RMSEA
Proposed model	7.27	0.832	0.774	0.776	0.742	0.794	0.785	0.11
Final model	1.14	0.957	0.944	0.962	0.948	0.954	0.940	0.037

Figure 1: The final model and standard path coefficients

One of the main goals in examining structural models is to evaluate the mediating role between variables. In the model proposed in the present study, cognitive emotion regulation was the mediator between object relations and love trauma syndrome, examined by the bootstrap method. Table 4 shows bootstrapping results to evaluate the mediating role of the variable.

According to Table 4, the level of confidence for cognitive emotion regulation, as a mediating variable, between object relations and love trauma syndrome was at P<0.002, which was statistically significant. Therefore, cognitive emotion regulation had a mediating role between object relations and love trauma syndrome.

Table 4: Bootstrapping results to investigate the mediating role

Path		β	Mean	Upper threshold	Lower threshold	P value
Object relations negative emotions syndrome	**regulation of love trauma**	0.09	0.032	0.154	0.026	0.002

Discussion
The present study aimed at investigating the structural model of object relations mediated by cognitive emotion regulation in predicting love trauma syndrome. Based on the results of the study, the proposed model had a good fit, which is an important step in identifying factors affecting love trauma syndrome, and it can be utilized as an applicable model to develop prevention programs for love trauma and improve the quality of object relations and use cognitive emotion regulation strategies.

The study findings showed that object relations predict cognitive regulation of negative emotions, and the study hypothesis was confirmed. In other words, object relations had a positive and significant relationship with the regulation of negative emotions. The results of a study by Vahediet al., [26] showed that the dimensions of attachment predict emotional problems through positive and negative cognitive emotion regulation strategies. On the other hand, the results of the study by Shaikholeslami and Taheri [27] showed that attachment to parents and peers

positively predict adaptive cognitive emotion regulation strategies and negatively maladaptive strategies.

Explaining this finding; emotion regulation refers to the capacity to monitor, evaluate, understand, and modify emotional responses in a way that helps normal functioning, and naturally is a process by which individuals express their emotions consciously or unconsciously by modifying experiences or changing the evoked emotions [28]. Attachment and emotion regulation are inextricably linked so that more capacity to manage and regulate emotions is a reason why children with secure attachment behave better than their peers and have fewer problems in external and internal behaviors [29].

The findings of the study also showed that the cognitive regulation of negative emotions is a predictor of love trauma syndrome, and the hypothesis was confirmed. In other words, cognitive regulation of negative emotions has a positive and significant relationship with love trauma syndrome. This finding was consistent with those of Hoffman et al. [30]. The results of the study by English et al., [31] showed that emotion regulation is crucial to optimal relationships because it can help to prevent conflict and build enjoyable relationships. The results of the study also showed that emotion regulation both affects close relationships and is affected by such relationships.

The results of a study by Catherine et al., [32] showed that emotion regulation skills develop significantly during adolescence, a period associated with emotional challenges and the development of neural circuits. The results of their study also showed that adolescence is a high-risk period for the onset of anxiety and depression disorders, as well as psychological traumas associated with impaired emotion regulation.

Therefore, according to previous research, some emotion regulation strategies are associated with psychological traumas, such as anxiety and depression. Rumination is one of these strategies that negatively affect mood and performance and is characterized by repeated thinking about the issue, and its causes and consequences. Rumination is activated with negative cognitions in memory and can lead to interpersonal isolation and, consequently, emotional problems, such as anxiety and depression. Emotional suppression, as a maladaptive emotion regulation strategy, is associated with an attempt to hide, inhibit, and reduce emotion expression [33].

The study findings also showed that object relations mediated by cognitive regulation of negative emotions predict love trauma syndrome. The finding was in line with the relationship between the dimensions of object relations and mental health since lovemaking and its capacity are the criteria for mental health. This finding was consistent with that of the study by Besharat and Farahmand [34]. According to the findings of their study, attachment disorders and difficulty in regulating emotions can predict the severity of depressive and anxiety symptoms.

The results of the study by Mesbahi et al., [35] showed that the proposed model for predictors of the love trauma syndrome fits the data, and personality traits, early maladaptive schemas, and the quality of attachment relationships predict love trauma syndrome.

Explaining this finding, people experience love and loss throughout their lives. The experience of any loss can be considered as evoking and re-resolving of the separation-individuation process. In fact, romantic grief brings people back to their core and revives the effective scenario of relationships with influential people in early life. It seems that the more distances from the secure attachment style, the more insecure in interpersonal relationships, especially in close and intimate relationships [36].

Adaptive emotion regulation allows people to easily cope with difficult situations. Increasing the ability to better regulate emotions is essential for healthy interpersonal growth. High-quality emotions may cause positive reactions if they are appropriate to the situation; otherwise, they cause a negative reaction [37]. Thus, when emotions are intense, prolonged, or maladapted, they need to be regulated and provide the ability to cope with events related to emotional and behavioral disorders caused by relationship breakdown during adolescence and youth.

Conclusion

Given the results of previous studies, it can be concluded that since object relations are the basis

for many behaviors, they also lay the basis for healthy social and emotional development in adulthood.

The present study had some limitations; the complexity and depth of the love structure in psychology cause multiple variables to be associated with it. It is impossible to examine all of them in a single research, whether to identify them or measure their effects since the study did not utilize a standard and valid method for this purpose. Therefore, it is suggested that other factors and variables affecting love be considered in future research. Another limitation was that females and males could have differences in the prevalence and pattern of love trauma syndrome, so it is suggested that the effect of male gender also be considered in future research. In addition, since object relations indirectly predict the symptoms of love trauma, which refer to the process of developing a psyche in relationship wih others in the childhood environment, it is recommended to provide pieces of training in building secure and satisfying relationships at the school and university levels, as well as to parents to recognize shortcomings of their parenting methods and modify them.

Conflict of interest
The authors declared no conflict of interest.

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