

Addiction in Romantic Relationships Scale Development: Validity and Reliability Study

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Main Points

- Addiction in romantic relationships affects one's life negatively. The person gets lost in an addiction cycle.
- The study aims to develop a scale to identify individuals' addiction levels in romantic relationships.
- 13-item Addiction in Romantic Relationships Scale, three-factor structure, explained 62.4% of the total variance. Confirmatory factor analysis also revealed that the three-factor structure has high validity.
- The Cronbach's alpha value of the scale showed high reliability.

Abstract

There is a concrete definition and diagnostic need for addiction in romantic relationships. The present study aims to develop a scale to identify individuals' addiction levels in romantic relationships. The Addiction in Romantic Relationships Scale was developed and tested on 1110 Turkish university students (61.4% female; mean age 21.2 ± 2.08 years). The factor structure was investigated with exploratory factor analysis and confirmatory factor analysis. The scale consisted of a 13-item, three-factor structure (dedication, withdrawal, and obsession) that explained 62.4% of the total variance. The correlation coefficients between the Addiction in Romantic Relationships Scale subscales and the total score ranged from .74 to .86. The scale had good fit rates in terms of the confirmatory factor analysis (comparative fit index = .96, normed fit index = .95, goodness of fit index = .96, root mean square error of approximation = .55). Concurrent validity results showed that the Addiction in Romantic Relationships Scale had a high positive correlation between the love addiction criteria ($r = .51$) and Experiences in Close Relationship-Revised ($r = .60$). The scale had high reliability (Cronbach's alpha = .87). As a result, the Addiction in Romantic Relationships Scale is a valid and reliable scale consisting of 13 items and a three-factor structure for evaluation of addiction in romantic relationships.

Keywords: Attachment, codependency, love addiction, romantic relationship, scale development

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Introduction

Addiction in romantic relationships affects one's life negatively. The person is unable to get out of the negative relationship and gets lost in a cycle, and the partner is like a dependent substance. It is characterized as maintaining unhealthy and painful relationships, suffering in the absence of a beloved, and making the relationship the center of life (Peele &

Brodsky, 1974; Reynaud et al., 2010; Sussman, 2010). People can be worried about being abandoned and experience psychological and somatic withdrawal symptoms when something goes wrong. Withdrawal symptoms include depression, anxiety, anhedonia, chronic loneliness, a feeling of emptiness, a loss of pleasure, nervousness, irritability, sleep disorders, appetite disorders, nausea, and abdominal pain (Fisher et al., 2016; Griffin-Shelley, 1993).

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The early stage of romantic love is generally defined as intense emotional responses such as exhilaration when one sees or thinks of the beloved (euphoria/intoxication), the experience of powerful feelings (reward), more interaction (tolerance), craving, obsessive thoughts, focused attention (salience), and emotional dependency on the loved one (Aron et al., 2005; Hatfield & Sprecher, 1986; Zou et al., 2016). Some researchers consider that romantic love could be a behavioral addiction. Romantic relationships—from “falling in love” to separation and subsequent withdrawal—can be considered a form of addiction. Mating and addiction cause very similar neurochemical activity as that of dopamine (Burkett & Young, 2012; Earp et al., 2017; Fisher, 2016).

In the adult population, the prevalence of love addiction ranged from 3% to 6% (Sussman et al., 2011). Another study noted the similarity between obsessive love and love addiction, reporting a prevalence of 17.9% among university students (Ahmadi et al., 2013).

Love addiction is described in the literature as pathological, obsessive, mania, and sick love. Despite some studies similar to those on love addiction, there is confusion about the definition and appropriate diagnostic need (Raffagnino & Zerbetto, 2019). The criteria of love addiction were determined (tolerance, withdrawal, time spent, maintaining, and abandoning social, occupational, and leisure activities) like the criteria of substance addiction (Griffin-Shelley, 1993; Reynaud et al., 2010). Then, 11 criteria for love addiction were proposed according to Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 model (Redcay & Simone, 2008). The Love Addiction Inventory was developed with the theoretical background of Griffiths’ (2005) addiction model (Costa et al., 2021). There are some codependency scales such as the Spann-Fischer Codependency Scale and the Codependency Assessment Tool that evaluate the relationship between a dependent person (alcohol, drug, gambling, sex) and the partner (Fischer & Spann, 1991; Hughess-Hammer et al., 1998). It is possible to experience an addictive romantic relationship without love. From this perspective, the lack of a scale to measure addiction in romantic relationships has led to the need for a scale development in Turkey. It is believed that the scale will be helpful in terms of addiction-based evaluation of behavioral patterns in romantic relationships. In this context, it is aimed to develop an “Addiction in Romantic Relationships Scale” (ARRS) and ensure the reliability and validity of the scale by applying it to those who have had romantic relationships in the course of their lives.

Methods

Participants

The participants of the study were undergraduate students from different faculties of a state university in Turkey. Participants, whose ages ranged from 18 to 35, were from 25 different departments. One thousand two hundred sixty individuals, who reported dating at least once, participated. One thousand one hundred ten of them who completed the all scales were evaluated.

Procedure

Previous scales on love addiction and obsessive love were reviewed, and a literature review was conducted (Feeney & Noller, 1990; Griffin-Shelley, 1991; Peele & Brodsky, 1975; Reynaud et al.,

2010; Sophia et al., 2009; Sussman, 2010; Schaffer, 2011). An item pool was created based on a literature search of key factors and discussions with addiction professionals. Initially, 29 items were evaluated, and then 3 items were excluded, 1 item was added, and 6 items were edited. The final form of the scale had 27 items before the field study. In order to test the comprehensibility of the items, a pilot application was made to a group of 50 volunteer university students. Then, stratification sampling was used to determine both population and sample balance. The number of each faculty and class was proportioned according to the universe, and the number of persons to be applied was determined. The lottery method was used to choose departments. The application was conducted in a class by the researcher. Prior to the study, ethical approval was received from Ege University Research Ethics Committee (Code 12-6/2). Informed consent was obtained from the participants and the volunteers filled out the Informed Consent Form.

Measures

Sociodemographical Form

Sociodemographic information was requested, including specific questions about age, gender, department, class, relationship status, and family structure.

Addiction in Romantic Relationships Scale

Based on the theoretical background of the relationship between love addiction and passionate love and anxious attachment, Schaeffer’s love addiction characteristics and relationship addiction characteristics, the Passionate Love Scale, Sussman’s love addiction criteria, and the Experiences in Close Relationship-Revised (ECR-R) were examined (Brennan et al., 1998; Hatfield & Sprecher, 1986; Schaffer, 2011; Sussman, 2010). Twenty-seven items were created with a focus on general behavior in romantic relationships and partner orientation. The 4-point Likert range is between 1 (never), 2 (sometimes), 3 (often), and 4 (always). A high score indicates higher levels of addiction in romantic relationships.

Criteria for Addiction to Love

The criteria were proposed on the basis of DSM-IV diagnostic criteria for substance addiction (Reynaud et al., 2010). It was proposed that three or more of the seven criteria could be used to determine addiction. The first five love addiction criteria meet the criteria of addiction. The last two criteria were associated with insecure attachment. The criteria were translated into Turkish by a native English speaker.

Experiences in Close Relationship-Revised

The Inventory, developed by Brennan, Clark, and Shaver (1998), has two dimensions of “avoidance” and “anxiety” in relationships (Brennan et al., 1998). Each item on the scale is valued on the basis of a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). It was adapted into Turkish by Sumer (Sumer, 2006). The internal consistency was scored .86 on the anxiety dimension and .90 on the avoidance dimension.

Parental Bonding Instrument

The scale was developed by Parker (1989) based on Bowlby’s attachment theory in order to retrospectively evaluate one’s perception of one’s relationship with one’s parents. The scale consists of 25 items that measure attachment to mother and father

and include care, control, and protection dimensions. Perceived parental behavior can be scored separately based on these two dimensions, and it can also be evaluated in a four-way classification. The scale was adapted to Turkish (Kapçı & Küçükler, 2006). The coefficients for the total score were found to be .90 for the mother form and .89 for the father form.

Data Analysis

The analyses were carried out using Statistical Package for the Social Sciences (SPSS) version 25.0 (IBM SPSS Corp.; Armonk, NY, USA) and AMOS 25 (Analysis of Moment Structures). The factor structure of the ARRS was investigated with exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Principal component analysis was used for the factor structure. Confirmatory factor analysis is assessed to what extent a model of factors consisting of many observable variables conforms to the real data (Yıldırım et al., 2014). Concurrent validity was examined by calculating the Pearson’s correlation coefficient between the ARRS and the subscales of the ARRS, love addiction (LA) criterias, Parental Bonding Instrument (PBI), and ECR-R. Concurrent validity refers to the degree of correlation between the evaluated construction and other measures (Shayeghian, et al., 2019). The Cronbach’s alpha internal consistency coefficient of the scale and the subscales were also calculated. Cronbach’s alpha $\alpha > .70$ values are generally indicative of a reliable set of items (De Vaus, 2002).

Results

The participants ($n = 1110$) were 21.2 years old (range 18 – 35, SD = 2.08). About 38.6% of them ($n = 428$) were male, and 61.4% of them ($n = 682$) were female. About 50.9% ($n = 565$) of them had a romantic relationship at the time of the study.

The Kaiser-Meyer-Olkin (KMO) test resulted in .891 for sampling adequacy. Bartlett’s test yielded a significant result ($\chi^2 = 5899.55, df = 78, p = .0001$). Accordingly, it was confirmed that we had an appropriate data set suitable for EFA. Principal component analysis and varimax rotation techniques were used. Items with values less than .10 in the cross-load items and less than .40 in the communalities were excluded from the scale. For the most appropriate factor structure, the analysis was repeated after each item was taken out of the test and completed when there was no cross-loading. Finally, a three-factor, 13-item structure with an eigenvalue greater than 5 and explaining 62.4% of the total variance was created. The subscales were defined as dedication (6, 7, 8, 9, 10), withdrawal (1, 2, 11, 12, 13), and obsession (3, 4, 5). According to the factors, the explained variance ratio was 22.7% for dedication, 21.2% for withdrawal, and 18.4% for obsession (Table 1).

Confirmatory factor analysis was performed for structural validity to test the applicability. On a scale, values of $\chi^2/df < 5$; root mean square error of approximation (RMSEA) $< .08$ indicate an acceptable fit. Comparative fit index (CFI) $\leq .95$, goodness of fit index (GFI) $\leq .95$; normed fit index (NFI) $\leq .95$; RMSEA $< .06$ are all good fit (Byrne, 2011). The modification indices (MI) in AMOS indicated that the model’s fit could be improved. Modification indices suggested that four items (9 – 10; 12 – 13) should be covariated and have a high covariance with each other to improve the model. Finally, model fit indices found were as follows: $\chi^2 = 258.76, \chi^2/df = 4.31, CFI = .96, NFI = .95, GFI = .96,$ and $RMSEA = .55$. For RMSEA, CFI, GFI, and NFI, the values were considered good fit rates; acceptable fit rates according to χ^2/df (Table 2). The standardized regression weights for the subscales of dedication, withdrawal, and obsession ranged from .58 to .80 and were statistically significant ($p < .001$) (Figure 1).

Table 1.
Exploratory Factor Analysis: Factor Loadings

Items	Communalities	Factor Loading		
		Dedication	Withdrawal	Obsession
8	0.662	0.776		
7	0.645	0.733		
9	0.592	0.73		
10	0.569	0.717		
6	0.608	0.707		
12	0.725		0.833	
13	0.726		0.803	
11	0.613		0.643	
1	0.584		0.635	
2	0.541		0.527	
3	0.68			0.796
4	0.651			0.778
5	0.53			0.694
Variance (%)		22.70%	21.20%	18.40%
Total variance (%)				62.40%

Table 2.
DFA Fit Indexes of the Scale

	Good Fit	Acceptable Fit	Model Fit Values of ARRS
(χ^2/df)	<3	<5	4.313
RMSEA	$\leq .06$.06 – .08	.055
NFI	>.95	>.90	.956
CFI	>.95	>.90	.966
GFI	>.95	>.90	.964

Byrne (2011).
ARRS, Addiction in Romantic Relationships Scale; CFI, comparative fit index; GFI, goodness of fit index; NFI, normed fit index; RMSEA, root mean square error of approximation.

Pearson correlation coefficients were calculated to evaluate the relationship between the ARRS and the subscales. Correlations between the subscales ranged from .39 to .53. Low and moderate correlation between the subscales indicated that the subscales were independent of each other and the scale did not have a one-dimensional structure. The correlation values between the subscales and the total ARRS score ranged from .74 to .86, indicating a strong relationship (Table 3).

Concurrent validity was investigated for the ARRS, its subscales, the LA criteria, the PBI, and the ECR-R. ARRS was positively correlated with the PBI anxiety, LA criteria, and negatively correlated with the PBI anxiety, ECR-R. These results indicated that

as the attention and protection of the mother decreases or as the attention and protection of the father decreases, addiction in romantic relationships increases (Table 3).

The 13-item scale’s Cronbach’s alpha internal consistency coefficient was calculated to be .87, indicating high reliability. The subscales’ internal validity values were .82 for dedication, .83 for withdrawal, and .74 for obsession. Each of the four subscales had high-reliability estimates, with Cronbach’s alpha coefficients ranging from .74 to .83.

Discussion

The current study describes the development of the ARRS as a new instrument to assess addiction in romantic relationships. Previous studies have developed scales on love addiction, love passion, and codependency (Costa et al., 2021; Fischer & Spann, 1991; Hatfield & Sprecher, 1986; Hughess- Hammer et al., 1998). The ARRS is more comprehensive in terms of a large sample, gender distribution, various departments, and lifelong romantic relationships.

This study was conducted with factor structure, reliability, and concurrent validity in mind. The KMO values were discovered to be .891 ($p < .01$). A KMO greater than .80 is alleged to have had great acceptance (Field, 2013). As a consequence, the sample size in this study was sufficient for EFA based on the KMO value. For the most appropriate factor structure, items with a value below .40 in the communalities table, cross-loading items (less than .10),

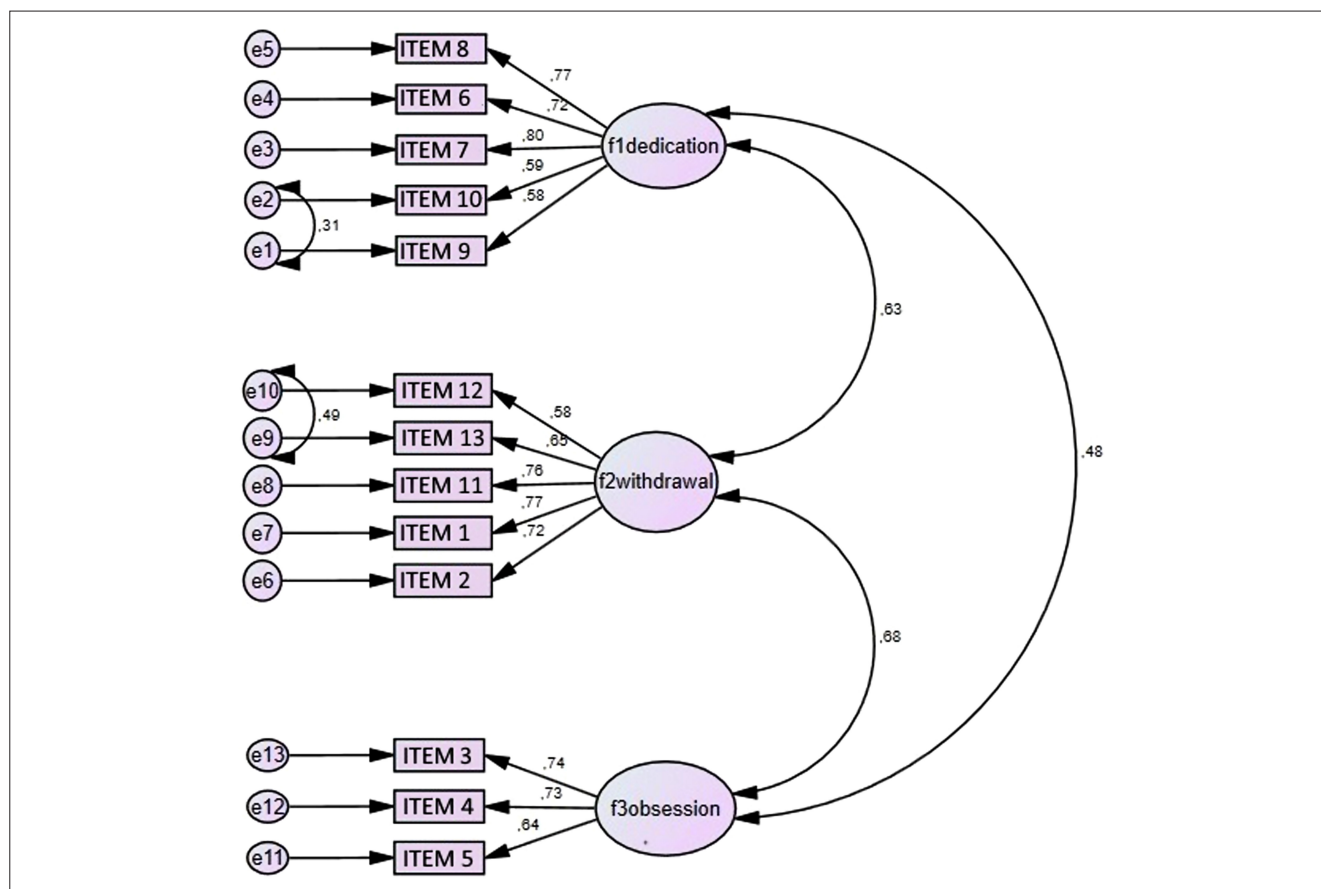


Figure 1. Standardized Loadings of the Three-Factor Structure of the ARRS. ARRS, Addiction in Romantic Relationships Scale.

Table 3.
Correlations Between ARRS, LA, PBI, and ECR-R

	1	2	3	4	5	6	7	8	9	10
1. ARRS Dedication	—									
2. ARRS Withdrawal	.53**	—								
3. ARRS Obsession	.39**	.51**	—							
4. ARRS	.81**	.86**	.74**	—						
5. LA criteria	.46**	.44**	.33**	.51**	—					
6. PBI Anxiety	.50**	.52**	.43**	.60**	.51**	—				
7. ECR-R Mother care	-.18**	-.17**	-.08**	-.18**	-.17**	-.16**	—			
8. ECR-R Mother protection	-.21**	-.17**	-.20**	-.23**	-.21**	-.25**	.44**	—		
9. ECR-R Father care	-.13**	-.08**	-.02	-.10**	-.13**	-.09**	.38**	.25**	—	
10. ECR-R Father protection	-.14**	-.20**	-.15**	-.20**	-.18**	-.21**	.29**	.52**	.43**	—

** $p < .01$.

ARRS, Addiction in Romantic Relationships Scale; ECR-R, Experiences in Close Relationship-Revised; PBI, Parental Bonding Instrument.

and factor-loading values below .40 were taken as removal strategies. A value of .32 is a proper of thumb for the minimum loading of a factor item (Tabachnick & Fidell, 2001). For construct validity, it is important to leave out elements that have a similar load on more than one factor (Acar-Güvendir & Ozer-Ozkan, 2022). A high correlation was found between the total score and the subscales. High correlation indicates that the subscales contribute to the measurement of the same structure (Şencan, 2005). The ARRS had a good model fit with values of RMSEA, CFI, NFI, and GFI. It was stated that RMSEA less than .06 and CFI and TLI greater than .95 indicate a reasonably good model fit (Hu and Bentler, 1999).

The findings suggest a three-factor structure as “dedication,” “withdrawal,” and “obsession.” The subscale of dedication was also found in the scales of co-dependency (Fischer & Spann, 1991; Hughes-Hammer et al., 1998). Dedication could be a behavioral model of compulsive help, counseling, lack of borders, and control of people (Ançel & Kabakçı, 2009). As it is known, people with love addiction show a more intense approach, desire, and impulsiveness, care more about their partner than themselves, and live a partner-oriented life, maintaining the relationship in spite of dissatisfaction and inadequacy (Doron et al., 2012; Redcay & Simone, 2018; Schaeffer, 2011; Sophia et al., 2009). The second subscale, withdrawal, was also found in studies of LA. Withdrawal is experienced either by separation from the beloved or by ending the relationship (Costa et al., 2021; Reynaud et al., 2010; Sussman, 2010). The third subscale, obsession, is similar to obsessive thoughts such as “I cannot live without you, I am nothing without your love, you complete me, I think about you all the time” (Reynaud et al., 2010). Obsessional preoccupations with romantic relationships lead to extreme dissatisfaction. So excessive anxiety, exaggeration, unrealistic reactions, controlling the partner, or seeking relationship assurance (Doron et al., 2012). Obsessive passion also refers to an inner pressure that drives people to pursue a romantic relationship (Ratelle et al., 2013).

The internal reliability of the ARRS ($\alpha = .87$) and the subscales ($\alpha = .74 - .83$) are both high. A maximum alpha value of .90 is suggested (Streiner, 2003). With this value obtained, we might safely say that items on the scale were able to measure the same construction.

Concurrent validity was investigated to confirm the relationships between the subscales and the total score. All subscales and the total scores of the ARRS were related to the LA, the PBI, and the ECR-R. The ARRS was highly correlated with the LA criteria and the PBI anxiety. Previous studies have also shown the relationship between anxious attachment and love addiction, obsessive love, and pathological love (Feeney & Noller, 1990; Hazan & Shaver, 1987; Sophia et al., 2009). Sussman (2010) defines anxious or ambivalent attachment as idealizing the partner, obsessing over the partner, needing the partner, being emotionally dependent, and tending to love excesses. Insecure attachment seems to express aspects of love addiction such as the fear of being abandoned and the idealization of the partner (Raffagnino & Zerbetto, 2019). It is noted that love addiction is rooted in attachment difficulties and the relationship with one’s family in early childhood (Ghaemi et al., 2018; Sanches & John, 2018). Studies on attachment theory have shown that childhood parental rejection is associated with insecure attachment into adulthood (Atak & Taştan, 2012). The current study revealed a negative relationship between the ARRS and the ECR-R. Low care and low protection explain the parental neglect in ECR-R (Parker, 1989). Parental neglect could be an indicator of addiction in relationships. It is focused on the fact that the starting point of love addiction is the hunger for a caregiver’s attention and love. The feeling of deprivation experienced during infancy recurs in adulthood and triggers the fear of abandonment in relationships. A love addiction might be a subconscious search for love to meet unmet childhood needs (Schaeffer, 2011).

In light of this, the 13-item scale appears to have the necessary characteristics to adequately assess addiction in a romantic

relationship. The results of this study illustrate that the ARRS is a valid and reliable measurement tool.

Limitations and Directions/Suggestions for Future Research

The current study has some limitations. First, this study was conducted at a university, educational level of the participants was not so wide. Second, test-retest method was not applied. Future studies may add different reliability analyses and apply them in the society. However, this study is important to develop a valid and reliable psychometric tool for assessing addiction in romantic relationships. This research makes a valuable contribution to the study of a fundamental phenomenon by developing a scale that can be used to determine the addictive behavior patterns in the romantic relationships.

Ethics Committee Approval: Ethics committee approval was received from the Ethics committee of Ege University (Approval No: 12-6/2, Date: 12.07.2012).

Informed Consent: Verbal/Written informed consent was obtained from the participants who agreed to take part in the study.

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