

RELIABILITY AND VALIDITY OF A TURKISH VERSION OF THE PASSIONATE LOVE SCALE

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Our purpose in this study was to evaluate the reliability and validity of a Turkish version of the Passionate Love Scale (PLS). Participants in the study were 150 undergraduate students. We assessed the construct validity of the PLS using confirmatory factor analysis. To assess the reliability of the PLS we calculated the internal consistency coefficient and found that the Cronbach's alpha was .89. Our results indicated that the PLS was a valid and reliable measure of passionate love with a Turkish population.

Keywords: passionate love, Passionate Love Scale, scale validation, reliability, validity, Turkey.

Over the years, a large number of typologies have been used to conceptualize love. One typology that was suggested by Hatfield and Rapson (1996) is passionate love. *Passionate love* (sometimes called romantic love, infatuation, love sickness, or obsessive love) is a powerful emotional state (Hatfield & Rapson, 1996) that can be intensely experienced, particularly in the early period of a romantic relationship. Being passionately in love is thought to affect an individual's entire existence with its cognitive, emotional, and behavioral components (Hatfield & Sprecher, 2010). The cognitive components of passionate love include intrusive thinking, preoccupation with the other, idealization of the other or of the relationship, a desire to know, and to be known

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by, the other. The emotional components of passionate love include physiological sexual arousal and sexual attraction to the other person, positive feelings when the relationship with the other is going well or negative feelings when they are not, and desire for complete union with the other person. Behavioral components of passionate love include working for the other, serving the other, and actions aimed toward determining the other's feelings (Hatfield & Sprecher, 1986, 2010). These components of passionate love have been investigated in almost all age groups, including with married couples, singles, children, and adolescents, and adult passionate love has been examined from anthropological, neural, genetic, biological, historical, and cultural perspectives (Cacioppo, Bianchi-Demicheli, Hatfield, & Rapson, 2012; Cacioppo & Hatfield, 2013; Hatfield & Rapson, 2008; Hatfield, Rapson, & Martel, 2007).

In the literature, the findings indicate that a romantic relationship begins with flirting, especially during adolescence, and is experienced as dating or sexual intercourse during emerging adulthood (Arnett, 2004; Atak & Tastan, 2012). Researchers have found that, for young people, their experience of passionate love is associated with many factors, for example, sociodemographic characteristics of age and gender (Graham & Christiansen, 2009) and the culture of the society in which they live (e.g., Kim & Hatfield, 2004; Landis & O'Shea, 2000). However, many of the factors that scholars have suggested are associated with passionate love, have been described in studies conducted in Western societies.

Although there is some research available on the attitude of young people in Turkey towards, and experience with, passionate love (Budak, 2011; Bugay & Tezer, 2008), it is not comprehensive, and is insufficient to be able to understand the experiences and attitudes of young Turkish men and women in regard to passionate love. Furthermore, the instruments developed to collect data measuring the attitude of young people in Turkey towards love (Buyuksahin & Hovardaoglu, 2004) and their romantic relationships (Kilincer & Tuzlugol-Dost, 2013) are inadequate to enable assessment of the cognitive, emotional, and behavioral components of passionate love. In order to improve the quality of life of young people in Turkey (Hatfield & Bensman, 2012; Treger, Sprecher, & Hatfield, 2013), it is important to identify their experiences (positive or negative) when they passionately love someone, when they are unable to find someone who loves them back with the same passion, or when they break up with such a person. Data collecting tools are needed in Turkey for determining the similarities or differences in components of passionate love among Turkish young people by comparing different cultures, because, in the literature, scholars have also considered whether or not culture has an influence on passionate love (Hatfield & Rapson, 2006; Kim & Hatfield, 2004). Therefore, our aim in this study was to assess the validity and reliability of the Passionate Love Scale (PLS; Hatfield & Sprecher, 1986) with a group of Turkish undergraduates.

Method

Participants

By simple random sampling we selected 150 volunteer undergraduates, 75 females and 75 males, who were studying at Ankara University in the Faculty of Health Sciences and whose average age was 21.04 years ($SD = 1.05$). We interviewed the participants and collected data between April and June 2012.

Measures

We translated the 15 items of the PLS into Turkish (see Appendix for all items in both Turkish and English) and this was the version of the instrument we used to collect data in our research. The questions to which participants were asked to respond included indicating if they were passionately in love at the time of our study, if they had been passionately in love previously, or if they had never been passionately in love. Participants responded on a 9-point Likert scale to describe their feelings (1 = *not at all true* and 9 = *definitely true*). The highest score that can be derived from the scale is 135 and the lowest score is 15, with scores from 106 to 135 points indicating wildly, even recklessly, in love; 86 to 105 points indicating passionate, but less intense, feelings; 66 to 85 points indicating occasional bursts of passion; 45 to 65 points indicating tepid, infrequent passion; and 15 to 44 points indicating the thrill is gone. Thus, the degree of passion increases as the score increases and, conversely, decreases as the score decreases (Hatfield & Sprecher, 2010).

In addition to completing the PLS, the participants provided demographic information of their sex and age.

Procedure

We examined both the language validity and construct validity of the PLS in the Turkish context. To ensure language validity, the original scale was first translated from English into Turkish by three English-language linguists as well as eight academics at Ankara University, including two in the Social Work Department, one in the Psychology Department, two in the Department of Nutrition, two in the Department of Child Development, and one in the Department of Nursing. Then three English-language experts translated the Turkish version back into English. All translators worked independently of each other. The original version of the scale was carefully compared to its backtranslation. Then the PLS was reviewed by five academics in the Faculty of Health Sciences at Ankara University, and the scale was finally structured in accordance with their recommendations.

Lecturers in the relevant field of research consented to approach students to participate. We distributed the survey instrument to the undergraduates who

volunteered to take part in the teaching rooms or within the campus. After participants had read the informed consent form, we responded to any questions they had, and volunteer participants only were included in the study. Then the participants were instructed to complete the PLS. No time limit was imposed for the participants to complete the scale and supply the demographic information, but most took approximately five minutes to do so.

Data Analysis

In this study we tested the applicability of the PLS to the Turkish culture. In this context, we performed analysis of the factor loadings. We also performed a confirmatory factor analysis (CFA) to validate the one-factor and 15-item structure of the PLS. We calculated Cronbach's alpha reliability coefficients to test the reliability and the internal consistency of the PLS.

Ethical Considerations

We emailed Elaine Hatfield, one of the authors of the scale (Hatfield & Sprecher, 1986) to obtain permission to use the PLS in this study. We also obtained the necessary permission from Ankara University's Faculty of Health Sciences, where the study was conducted.

Results

Passionate Love

Of the participants 43.3% reported that they passionately loved at the time of the study, 33.3% that they had never passionately loved someone, and 23.3% indicated that they had previously been passionately in love with someone.

According to their responses to the PLS, 30.7% of the participants reported that they were wildly, and even recklessly, in love, 29.3% felt less passion for their beloved, 21.3% occasionally felt passion for their beloved, 13.3% of the participants were tepid and felt passion infrequently, and 5.3% reported that the thrill of their love had faded away.

Validity of the Passionate Love Scale

The factor loadings of each item in the PLS were analyzed and found to be .53 or higher (see Table 1).

Table 1. *Factor Loadings and Item Total Correlations of the Passionate Love Scale*

Items	Factor loadings	Item total correlations
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P1	.659	.606
P2	.531	.478
P3	.589	.528
P4	.684	.620
P5	.640	.579
P6	.645	.579
P7	.736	.676
P8	.739	.677
P9	.704	.644
P10	.689	.627
P11	.795	.742
P12	.711	.650
P13	.738	.684
P14	.638	.576
P15	.569	.516

Note. P1-P15 = items in the Passionate Love Scale.

We performed a CFA, as evidence for structural validity, to test the applicability of the 15-item PLS to the Turkish culture. This analysis is intended to assess to what extent a factorial model of factors (latent variables), consisting of many observable variables, conforms to the real data. The model to be investigated may define a structure that is established using the data of an empirical study, or a design based on a specific theory (Sumer, 2000). A large number of fit indices are used in the CFA to assess the validity of the model including: chi-square (χ^2), root mean square error of approximation (RMSEA), comparative fit index (CFI), nonnormed fit index (NNFI), normed fit index (NFI), and goodness-of-fit index (GFI; Cole, 1987; Sumer, 2000). On a scale, values of $4 < \chi^2/df < 5$; $.05 < RMSEA < .08$; $.95 \leq NNFI \leq .97$; $.95 \leq CFI \leq .97$; $.90 \leq GFI \leq .95$ and $.90 \leq NFI \leq .95$ indicate an acceptable fit (Kline, 2004; Sumer, 2000).

In the initial CFA applied to the PLS we aimed to analyze the items with t values that were statistically nonsignificant. As a result of this analysis, no nonsignificant t values were found (see Table 2 and Figure 1). In Figure 1 the path diagram derived is illustrated. The fit indices were as follows: $\chi^2 = 223.84$, $\chi^2/SD = 2.49$, $CFI = .94$, $NNFI = .93$, $NFI = .90$, and $GFI = .83$. The fit index appeared to be sufficient after evaluating these coefficients that demonstrated the relationship between the observable variables and the factors of the model, indicating the factorial structure of the scale (see Figure 1).

Given the fit statistics that were calculated by the CFA, we considered that the previously determined one-factor structure of the scale was consistent with the data collected. As seen in Figure 1, the final form given to the scale consisted of 15 items and one factor. Table 2 provides the regression values and t values of the items, the regression coefficients. As the t values of each scale item in the table are higher than critical value of 1.96, all of the items are statistically significant.

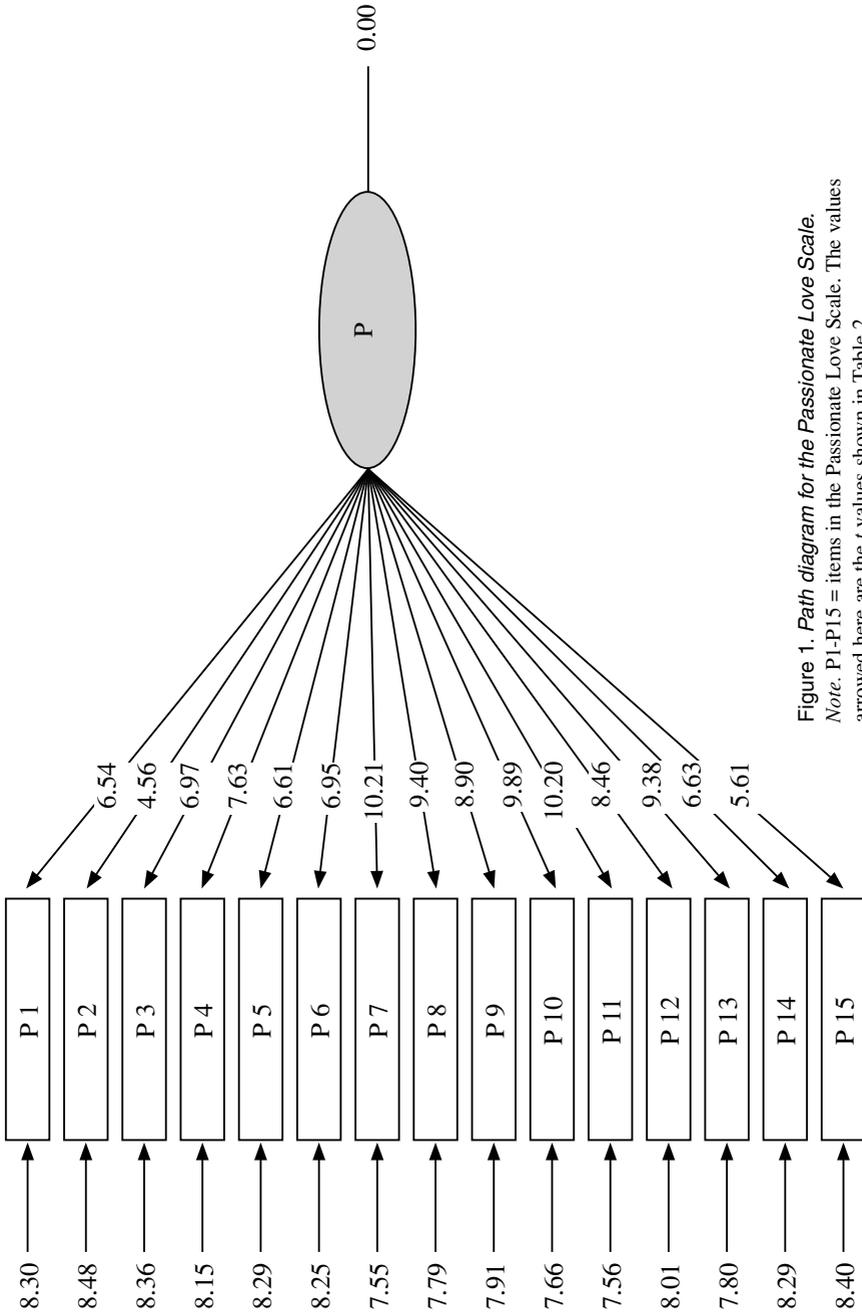


Figure 1. Path diagram for the Passionate Love Scale.
Note. P1-P15 = items in the Passionate Love Scale. The values arrowed here are the *t* values shown in Table 2.

That is, all of the items highly explain the variance in the scale. As both the regression coefficients and *t* values were significant, the model was validated.

Table 2. *Regression and t Values for Verifying the Factor Analysis*

Items	Regression values	<i>t</i>
P1	.52	6.54
P2	.38	4.56
P3	.48	5.97
P4	.59	7.63
P5	.53	6.61
P6	.55	6.95
P7	.74	10.21
P8	.70	9.41
P9	.67	8.90
P10	.72	9.89
P11	.74	10.20
P12	.64	8.46
P13	.70	9.38
P14	.53	6.63
P15	.45	5.61

Note. The values in this table are unstandardized versions of the values in Table 1.

Reliability of the Passionate Love Scale

According to the statistics derived, the Cronbach's alpha of the PLS was .89. In addition, the correlations of items in the scale ranged between .47 and .74 (see Table 1).

Discussion

In this study our aim was to test the validity and reliability of a Turkish version of the Passionate Love Scale. The results of the study are similar to those obtained by Hatfield and Sprecher (1986), who developed the original scale. Additionally, the results in our study revealed that the factor loadings for the PLS were .53 or higher and the results from the CFA demonstrated that the scale had one factor, as did the original scale.

In addition, the internal consistency coefficient for the scale was .89 in our study, which was consistent with the reliability coefficient (.91) obtained by Hatfield and Sprecher (1986). Tezbasaran (1997) reported that a reliability coefficient that is considered adequate for a Likert scale is required to approximate 1 as closely as possible. Thus, the reliability of the PLS in our study can be considered as high.

On the other hand, subsequent researchers (Fehr, 1994; Graham & Christiansen,

2009) have supported the reliability and validity of the PLS developed by Hatfield and Sprecher (1986). This scale was translated into Portuguese by Feybesse, Neto, and Hatfield (2011) and administered to 204 undergraduates to assess its validity and reliability. Furthermore, Feybesse et al. demonstrated that the factor loading of all items in the scale were higher than .45 and the scale had one factor. Thus, the factor loading of .53 or higher that we derived in our research were slightly higher than those derived by Feybesse et al. Their Cronbach's alpha value was .92 for the PLS.

Feybesse, Coudin, and Hatfield (in preparation) have since translated the PLS from English to French and administered it to 190 French undergraduates. They reported that the French version of this scale was valid and reliable. We have not provided details of this study conducted by Feybesse and colleagues in our study as their article has not yet been published.

In sum, we confirmed the validity and reliability of the PLS as a measure of passionate love among young Turkish people and these findings have been supported by many previous researchers. The PLS appears to have adequate psychometric properties to assess the cognitive, emotional, and behavioral aspects of passionate love.

The results we obtained were different from the results obtained by Feybesse et al. (2011) in terms of young people's experience of passionate love. Of our participants, 33.3% responded that they had never passionately loved, whereas approximately 5% made this response in the study conducted by Feybesse et al. As mentioned above, it has been found that the meaning and importance of passionate love can vary depending on the experience of the young people studied in love, their biological characteristics, and their culture (Hatfield, Forbes, & Rapson, 2013; Kim & Hatfield, 2004; Landis & O'Shea, 2000). In this regard, it is likely that intimate relationships may differ in Turkey, which has a more communitarian culture than do Western societies. On the other hand, although Turkey differs from Western societies in terms of sociocultural features and social structure, it is in the process of becoming more Westernized. In addition, although the basic structure of Turkish families has undergone some changes, the emotional attachment among family members remains important despite reduced material dependency (Kagitcibasi, 1990). Thus, the decisions of families or relatives can have a greater influence on romantic relationships in Turkey than occurs in Western cultures, and in Turkey prearranged marriages do still take place (Ercan, 2008). According to Turkish family values, behaviors such as kissing and having sexual intercourse prior to marriage can be regarded as inappropriate in a passionate-love relationship. Therefore, families may not approve of passionate relationships. Moreover, young people may perceive their relationships as a private matter because they assume that their family might

oppose their passionate love. In evaluation of the study results, when nearly one in every three of the young men and women who took part in the research stated that they had never passionately loved before, this response may be attributable to the Turkish culture or to the sociodemographic characteristics of the undergraduates in our research being different from those of participants in previous studies.

Limitations

As in the study of Hatfield and Sprecher (1986) who developed the PLS, the participants in our study were undergraduates. This may limit the generalizability of our findings. However, further study of our findings using a more extensive sample could provide further information on the psychometric properties of the scale. Despite these limitations, this study is important in that it is the first to in which it is demonstrated that the PLS is a reliable and valid instrument when used with Turkish undergraduates.

Future Directions

We recommend that scholars, particularly those who desire to conduct research in this field in Turkey, should study the experience of young people in passionate love using a larger sample and the 15-item version of PLS that we confirmed as reliable and valid in this study. In addition, they could adapt and translate the 30-item version of PLS into Turkish, in order to derive further information on the cognitive, emotional, and behavioral components of passionate love.

Conclusion

As a result of this research, we gained evidence about the psychological features of the PLS, including its behavioral, cognitive, and emotional components. Thus, we concluded that the 15-item Turkish version of PLS was valid and reliable when used with a sample of Turkish undergraduates. As reported by Hatfield and Sprecher (2010), this scale will be a helpful instrument to evaluate the attitude of undergraduates towards love using these components, especially in the field of psychology. The scale can also be useful for sociologists working in the field of sociology of youth and of emotions to evaluate attitudes towards passionate love. Additionally, in order to improve young people's psychological well-being and quality of life, the PLS can be used by psychologists and specialists in the field of social psychology of youth to develop intervention programs for behavioral, cognitive, and emotional aspects of passionate love experienced by young people. This scale would also be helpful for professionals engaged in marriage and counseling services.

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Appendix

Items of The PLS in Turkish

1. Eğer.....beni bırakırsa, derin bir umutsuzluğa kapılırım.
2.üzerindeki düşüncelerim saplantı derecesinde olduğu için bazen düşüncelerimi kontrol edemediğimi düşünürüm.
3.mutlu etmek için bir şey yaptığımda kendimi mutlu hissederim.
4. Başka biri ile olmaktansa,.....olmayı tercih ederim.
5.başka birisine aşık olduğunu düşündüğümde, onu kıskanırım.
6.ile ilgili her şeyi öğrenmek için can atarım.
7. Fiziksel, duygusal ve zihinsel olarak.....arzularım.
8. ilgisini sonsuz bir şekilde arzularım.
9. Bana göre,.....kusursuz romantik bir hayat arkadaşıdır.
10.bana dokunduğunda vücudumun tepki gösterdiğini hissederim.
11.her zaman aklımdadır.
12.beni tanınmasını – düşüncelerimi, korkularımı ve umutlarımı bilmesini isterim.
13. Büyük bir hevesle.....beni arzuladığımı gösteren belirtiler ararım.
14.karşı etkileyici cazibem vardır.
15.ile olan ilişkimde bir şeyler yolunda gitmediğinde, şiddetli şekilde bunalıma girerim.

Items of the PLS in English

1. I would feel deep despair if.....left me.
2. Sometimes I feel I can't control my thoughts; they are obsessively focused on.....
3. I feel happy when I am doing something to make.....happy.
4. I would rather be with.....than anybody else.
5. I'd get jealous if I thought.....was falling in love with someone else.
6. I yearn to know all about.....
7. I want.....physically, emotionally, and mentally.
8. I have an endless appetite for affection from.....
9. For me,.....is the perfect romantic partner.
10. I sense my body responding when.....touches me.
11.always seems to be on my mind.
12. I want.....to know me – my thoughts, my fears, and my hopes.
13. I eagerly look for signs indicating.....'s desire for me.
14. I possess a powerful attraction for.....
15. I get extremely depressed when things don't go right in my relationship with.....

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