PSYCHOMETRIC PROPERTIES OF STERNBERG LOVE SCALE

A. Askarpour[1] and M. Mohammadipour[2,*]

[1]Department of Counseling, Quchan Branch, Islamic Azad University, Quchan, Iran

[2]Department of Psychology, Quchan Branch, Islamic Azad University, Quchan, Iran

ABSTRACT

Introduction: The aim of study was to evaluate the psychometric indices Sternberg love scale on married men and women in Iranian society.

Methods: The study type is correlation (factor analysis). In this research factor analysis was used that is an exploratory and confirmatory technique to study the structure of a set of data, which has several pre-conception about exploring the questionnaire factors.

The sample size was 200 individuals which is randomly selected and completed Sternberg's triangular love scale from men and women who participated in the before marriage classes and family education classes in Mashhad in 2015. Data was analyzed using exploratory and confirmatory factor analysis.

Findings: The results of the factor analysis by using Varimax rotation method showed three love factors, and they were fitted by confirmatory factor analysis. Internal consistency reliability Alpha Cronbach coefficients including 45 items and three factors of intimacy, passion and commitment respectively are 0.86, 0.87 and 0.91 and love overall scale was satisfactory.

Discussion: The results of the factor analysis are consistent with previous studies and with respect to the validity and reliability of Sternberg's love triangle that can be used in research and family domain.

Keywords: Love triangle; Sternberg; psychometric; reliability.

1. INTRODUCTION

Today, various debates about the interpersonal relationship psychology arise and each of contemporary approaches tries to explain and describe the special offer discussions about interpersonal relationships. However, some concepts are ambiguous and still cannot be as a clear argument in the area of interpersonal relations, we can mention love, understanding, intimacy, attachment and belonging (Glaser 2007).

One of the most attractive and at the same time complete theories that arise in the area of love is love triangle theory and it can be firmly stated that love triangle theory, the most influential and the most complete theory of love psychology. This theory is based on extensive studies and systematic research and developed by R. J. Sternberg that in addition to the love component of a comprehensive approach offers a variety of love.

After multiple investigations, Sternberg stated three elements of love, intimacy, commitment and passion based on the interaction of the three primary components of love, even though the theory of Sternberg refers to the eight kinds of love as the love triangle theory approach but in some psychological resources related to love, his approach is mentioned as "the approach of love" (Doudman, 2012).

Sternberg was among those who tried to use psychometric principles through advanced statistical analysis techniques to achieve elements of love by identifying factors. He used confirmatory factor analysis and tried to investigate his valid theory in psychology of love and to consider the most completed contemporary theory as the theoretical basis of factor analysis. Today a systematic research was conducted to study Sternberg terms and a psychometric movement also has sought to provide a more complete tool for measurement and validation of the structure of love with Sternberg's approach. However, it is necessary to examine the factors affecting the formation of Sternberg's theory and after reviewing these factors, we can

provide a comprehensive picture of the love triangle. Sternberg sees love into three main components: intimacy (emotional component), passion (motivation component) and decision / commitment (cognitive component). These components are integrated with each other in different ways to create eight different types of love. He put these three components in three vertices of a triangle and states the nature of love and its relationship with sexuality and behavior by the intensity and weakness of the three components and their relationship with each other.

In Sternberg perspective the worst type of relationship is when intimacy, passion and commitment is weak and there is lack of love and the relationship is not stable. But if all three factors are available love is obvious and loving relationship is permanent and stable and failure in romance can never be seen. Finally, Sternberg approach to love has great diversity and different angles of it has revealed. Although love type cannot easily be regarded as stable but, according to authoritative research it could be considered that to somehow love remains constant and in most cases it does not change unless the parties seriously try to change it. It needs to be mentioned that the way to achieve this goal alone is a futile effort, and it required both parties (Beirami, 2013).

Sternberg's theory unlike most previous theories raises more than one or two types of love and helps us to understand love as a multi-dimensional phenomenon; the theory has a certain practical applications. First, by measuring three components of love, we specify the type of romantic relationships of each pair then, by analyzing the differences between types of love of each pair, if there is a desire to continue the relationship, we accurately show what areas are in need of reform (Sepah Mansour, 2012). Love triangle theory can describe the satisfaction of romantic relationships and serve as an application model in the areas of marital counseling, family therapy and marriage counseling. Sternberg's theory in the realm of practical tips to adapt the three elements of love in the couple's marital counseling can be emphasized and to the extent that this adaptation can help couple has more romantic relationships and understanding (Beirami, 2013).

Most research on interpersonal communication was conducted in Western countries with individualistic culture and little attention has been paid to Eastern countries and collectivist

cultures. Due to this fact, it is essential that the questionnaire should be normalized in our society; the reliability and validity should be analyzed so the questionnaire will be used in consultation.

2. METHODOLOGY

The study type is correlation (factor analysis). In this research factor analysis was used that is an exploratory and confirmatory technique to study the structure of a set of data, which has several pre-conception about exploring the questionnaire factors.

The sample size was 200 individuals (100 male and 100 female) which are selected by stratified sampling in counseling centers of Mashhad in 2015. The way of choosing was that counseling 4 centers were selected from number of centers in Mashhad, from each one 50 men and 50 women were interviewed and completed questionnaires. Research tool included a questionnaire of Sternberg's love triangle; the test consists of 45 questions that based on objective measures for each of the items is scored from 1 to 9 in order. In a way that the first 15 sentences distinguishes intimacy, the second 15 sentences distinguishes passion and the last 15 sentences distinguishes commitment, To analyze the data, the numbers that were placed in front of each group of 15 sentence should be added together to determine the level of sample people in three elements of love. Ghomrani and Sadat JafarTabatabyi (2006) reported the reliability of Sternberg's love triangle questionnaire by using Cronbach's alpha as 0.92. Also they reported validity using the correlation with the total score for the three components of intimacy, passion, and commitment to, respectively as 0.66, 0.92 and 0.77/0. Factor analysis was used to analyze the data.

3. FINDINGS

Table 1. Descriptive indicators of love scale and subscales

(intimacy, passion and commitment)

Indicators	Intimacy	Passion	Commitment
Number	250	250	250
Mean	3/74	3/05	3/34

Standard error	0/03	0/03	0/04
Standard deviation	0/7	0/58	0/75
Variance	0/49	0/33	0/56
Skewness	410-0.	-0.92	-0. 576
Kurtosis	183-0.	. 221	0. 402

Given the mean score of subscale in tests of love, women and men tendency toward three variables is fairly at a same level. Although the mean scores of intimacy variable are smaller than other variables and the mean scores of passion variable are less than other variables. Based on the above data, it can be stated that more men and women like intimacy; an intimacy has content to learners' needs and are less likely toward passion. Also according to the amount of skewed and stretched between -2 to +2, thus there is a normal distribution of scores of these variables.

In order to evaluate the adequacy of sampling and hypothesis of no enough correlation between the variables from sufficient criterion of Kaiser-Meyer-Elkin (KMO) sampling adequacy and Bartlett's test of globosity was used. The results are presented in table (2-4):

Table 2. The size of KMO and Bartlett's test of globosity

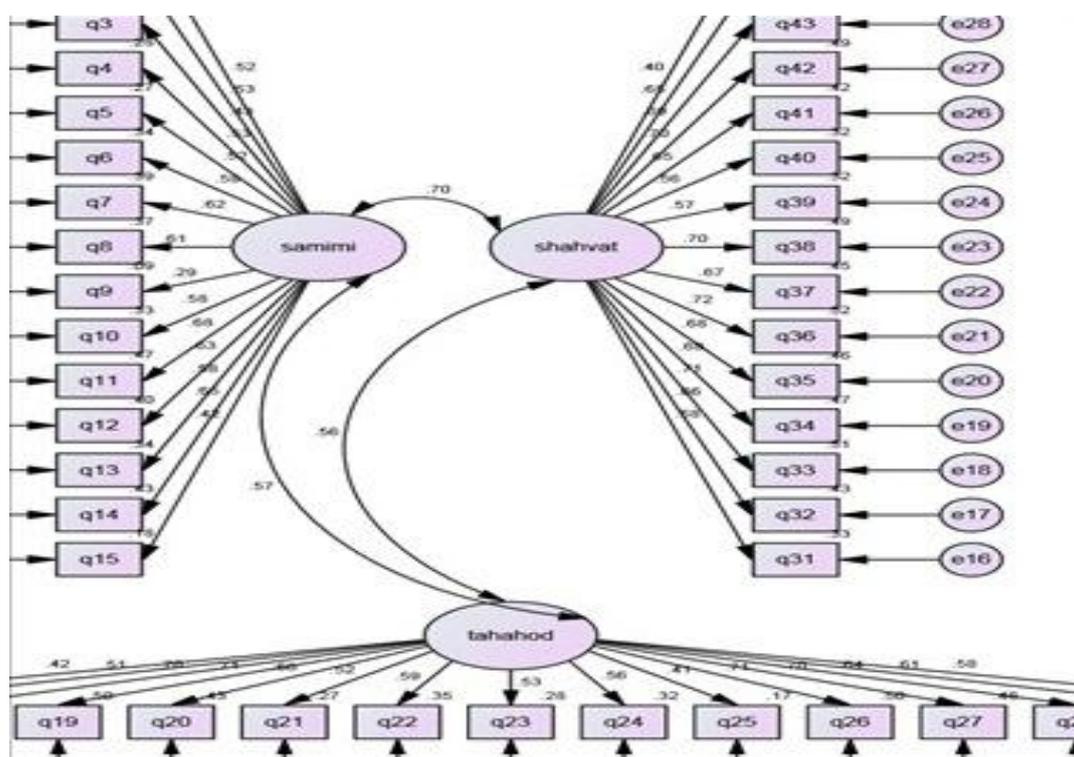| KMO	Bartlett's test	Significant Level
0.857	5522.094	0.000

According to the table above, sufficient sampling was 0.857 that show the data are suitable for principal components analysis. Similarly, Bartlett's test of globosity was achieved 5522.094 that are significant at 0.000 levels and shows there is enough correlation for conducting between variables, and the null hypothesis of not having enough correlation between the variables was rejected.

Table 3.

	Before rotation			After rotation		
Scales	eigenvalue	% of variance	% Cumulative	eigenvalue	% of variance	% Cumulative
Intimacy	12.952	28.782	28.782	4.549	10.109	10.109
Passion	4.246	9.434	38.216	4.034	8.965	19.074
Commitment	2.681	5.958	44.175	3.590	7.978	27.052

Results of exploratory factor analysis with oblique rotation has identified 3 factors that the intimacy with 15 questions, passion with 15 questions and commitment with 15 questions. Tabachenik and Fidel (2001) believed that, in practice, a strong solution must explain at least 50% of the variance.Therefore first three components of love scale explained around 44.11 percent of variance of love. Special value for Important and meaningful factorsof first to third, respectively are 4.549, 4.034, 3.59 and collectively is 12.173.The amount of explained variance of factors of first to third, respectively are 28.782, 9.438, 5.958 and collectively is 44.175. This result on questionnaire saturation of 3 factors, implies a very important factor that has a larger share of the total variance of questionnaire, and three more detailed factors. Diagram of confirmatory factor analysis is as follows:

Table 4. Summary of indicators of love scale three-factor model

Model	CFI	AGFI	GFI	RMR	RMSEA	df	x^2
Measured model	0/91	0/85	0/93	0/07	0/08	521	1522/079

Confirmatory factor analysis was conducted by AMOS-21 has shown that the model is supposed to be fitted enjoyable. Because the x^2 amount at 000 level 0 <P was not significant. K2 Index of degrees of freedom is smaller than 3. This means that there is compliance and fitting between hypothesized model and measurement model (The x^2 amount should not be meaningful). Also Goodness of fit index (GFI) and comparative fit index (CFI) should be

Table 5. The reliability of the love scale and its subscales with Cronbach's alpha method

Scale / Index	Commitment	Passion	Intimacy	Total test
Cronbach's alpha	0/911	0/875	0/867	0/935
Question numbers	15	15	15	45

As it can be seen in the table above, the reliability of the love scale and its subscales with Cronbach's alpha was calculated and commitment subscale has the highest level of reliability and intimacy has the lowest reliability. However, the whole love scale and its subscale have high reliability. Due to the calculated amount of Cronbach's alpha was used to test love was 0.935.

4. DISCUSSION AND CONCLUSION

Love is an interesting subject for many people. But there was no appropriate psychological

research about it especially in the last decades. Consequently research related to love and love relationship can be a solution to many problems.

Given the importance of love subject this study analyzed some psychometric properties of the questionnaire that Sternberg's Triangular Love (1988) designed and built Amon Iranian men and women. With all the limitations of questionnaire studies, empirical reports about the scale based on the theory of love triangle, generally due to internal and external validity of the theory of triangular was encouraging. In past time it seemed that study of loveessentially is contradicted with concept of quantity. The primary clinical theories werenon-quantitative and in general, many people felt that love and determination are incompatible with each other.

According to the findings of the study, all questions of scales of intimacy, passion and commitment in are loaded in their respective dimensions. Just questions of number 21 and 22 of passion show relatively strong factor. Although these two questions with commitment scale also have value factor. The rest of the factors are favorable. Kumeri and Li described coefficients of 0.70 excellent, 0.63 very good, 0.55 good and 0.32 are trivial. As a result, a 34 factors structure was obtained for this area (with the defined variables in the table above for each factor) that confirmed the structure of this questionnaire and approved the above analyzes, and the validity of the questionnaire. Therefore the hypothesis is confirmed by 99 percent of selection.

Also, according Tabaknick (2007) the root mean square error of approximation (RMSEA) should be less than 0.1 (smaller than 0.05 is good and 0.08 is appropriate). Because the value of RMSEA is equal to 0.08, it reflects the model is fitted. Also good fit index (GFI) and comparative fit index (CFI) should be bigger than 0.9 which is happened. In sum, we conclude that the supposed model is fitted enjoyably. This means that the underlying structure using class perceptions is confirmed.

When Sternberg's theory was raised for the first time, clear data were presented to support the theory, but different aspects of the theory were not measured or tested by a tool. The data presented in this article include test tool is based on the theory seems to be generally supportive to the theory. In addition, the data gathered by Aaron Beck (1994) provides more support for the theory in terms of implicit theories of love, although the commitment role in

this implicit theoriescomparing to other two components of the Lypkous, 1994; Russell, 1988, is less clear. Since the early work of Robin (1970) about the theory and measurement of love, several theories have been proposed in this context (Sternberg and Barnes, 1985), few of these theories that are given directly to verify these theories.

In this study, Cronbach's alpha coefficients were calculated for estimating the reliability of Sternberg love. Cronbach's alpha coefficients for operating results indicate that the tool also has an acceptable internal consistency and reliability (Cronbach's alpha) of all subscales is also acceptable (Intimacy: 0.86, passion: 0.87, commitment: 0.91, total: 0.93). According to these findings, it was concluded Sternberg's Triangular Love Scale in Iranian sample has high reliability and internal consistency and it is acceptable.

The results of current study were consistent with studies of Karami and Alayi (2009), Yousefi and Kiani (2012) and Kordmirza (2014) that love trianglescale arevalid and reliable. These findings are also consistent with studies of Wan et al (2000), Loss Wel (1979), Handrik (1988) and it proves the validity of a tool of triangular love between the couples that this tool is not a one-dimensional structures and it measures multiple structures simultaneously.

Therefore, because this questionnaire has a substantially reliability and validity of triangular love Sternberg; it can be used in counseling centers.

5. REFERENCES

[1] Sternberg. R (2007) Love Story (A new look at the relationship between men and women).

[2] Beck Aaron. T. (2000). Love is never enough.

[3] Beirami, Mousavian, Shiraz (2014), Prediction of Intimacy between couples based onlove components. Master's Thesis Psychology, Islamic Azad University, Science and Research Branch of East Azerbaijan.

[4] Love pain or trouble: the writings of Leo Buscaglia.

[5] Doudman, F. Imanifar, H, 2012: Love, marriage and divorce from the perspective of Islamic education and psychology. Shiraz: Shiraz Navid.

[6] Sepah Mansour, M and Mazaheri. M (2006). Compare Styles components of love between married couples have marital satisfaction and dissatisfaction, abstracts second congress of family pathology. Iran, p. 217.

[7] Ghomrani. S and Tabatayi, j (2006) Iranian couples romantic relations and its relationship with marital satisfaction and demographic variables, consulting and research new journal, Volume 5, Issue 17, p. 95-109.

[8] KordmirzaNikouzadeh, A (2014) Validation of a Scale of Sternberg's love triangle in single students. Social psychological research - Social Psychological Association Iran - Journal of 14.125 to 113 numbers.

[9] Karami, A; Alayi, P, 2009. Construction and standardization of scale story of love and study its correlation with sexual satisfaction. Contemporary Psychology, Volume II, Issue 2.

[10] K Connolly, 2013. Positive Psychology and Family Therapy: creative techniques and practical tools to help change and promoting growth in the household.

[11] Glaser and 0.2014. Eight lessons for a successful marriage.

[12] Yousefi, N; Kiani, M (2012), To evaluate the psychometric properties of the Love Attitude Scale (LAS) Journal News and Research Services - Iranian Counseling Association - Academic Year 11 0.75 to 55 consecutive 43.

[13] Barnes ML, sternberg RJ.A. Hierachicalmodel of love and its prediction ofsatisfaction in close relationships. In: RJsternberg& M Hojjat (Eds). Satisfactionin Close Relationship (pp.79-101). Newyork: Guilford Press.

[14] Conley, T.D., Ziegler, A.,Moors, A.C.,Matsick, J.L.,& Valentine, B. (2013).A critical examination of popular assumptions about the benefits andoutcomes of monogamous relationships. Personality and Social PsychologyReview, 17(2): 124-141.

[15] Hendrick, C., &Hendrick, S. (1986). A theory and method of love. Journal of Personality andSocial Psychology, 50, 392–402. doi:10.1037/0022-3514.50.2.392

[16] Hendrick, C., Hendrick, S. S., &Dicke, A. (1998). The Love Attitudes scale: Short form. Journalof Social and Personal Relationships, 15, 147–159. doi:10.1177/0265407598152001

[17] Lipkus, I. M., Barefoot, J. C., Williams, R. B., &Siegler, I. C. (1994). Personality measures as predictors of smoking initiation and cessation in the UNC Alumni Heart Study. Health Psychology, 13 (2), 149-155.

[18] Russell, J. A., & Bullock, M. (1986). Fuzzy concepts and the perception of emotion in facial expressions. Social Cognition, 4, 309-341

[19] Rubin, Z. (1970). Measurement of romantic love. Journal of Personality andSocial Psychology, 16, 265-273.

[20] Sternberg, R.J. (1986). A triangular theory of love. Psychological Review, 93, 119-135.

[21] Sternberg, R.J. (1988). Triangular theory of love. New Haven, CT: Yale University Press.

[22] Sternberg, R.J. (1997). Construct validation of a triangular love scale. European Journal of Social Psychology, 27, 313-335.

[23] Sternberg, R.J., & Barnes, M.L. (1985). Real and ideal others in romantic relationships: Is four a crowd? Journal of Personality and Social Psychology, 49, 1586-1608.

[24] Sternberg, R.J., &Grajek, S. (1984). The nature of love. Journal of Personality and Social Psychology, 55, 354-356.

[25] Tabachnick, B.G., and Fidell, L.S. 1996. Using Multivariate Statistics. Harper Collins College Publishers, 5 Th ED. New York, 963 p.