Love of Life Scale: Psychometric Analysis of a Turkish Adaptation and Exploration of Its Relationship with Well-Being and Personality

Hayat Sevgisi Ölçeği: Türkçe Uyarlamasının Psikometrik Analizi ve İyi Oluş ve Kişilik ile İlişkisinin İncelenmesi

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ABSTRACT

Objective: This study aimed to assess the psychometric characteristics of Love of Life Scale (LLS) in Turkish university students.
Methods: The Turkish translation of LLS, Scales of Positive and Negative Experiences, Satisfaction with Life Scale, Multidimensional Scale of Perceived Social Support, and Ten Item Personality Inventory were administered to medical (n=155; mean $_{age}$ = 21.32±1.84 years; 60.6% females) and non-medical (n=231; mean $_{age}$ = 20.76±1.70 years; 52.8% females) students.
Results: Using medical students, exploratory factor analysis yielded one-factor solution. The LLS scores significantly predicted positive experience, negative experiences, satisfaction with life and social support over and beyond the effects of personality traits. Using non-medical students, confirmatory factor analysis confirmed unidimensional factor structure of the scale with satisfactory indices. The scale showed high internal consistency estimates in both samples.
Conclusion: The Turkish version of LLS proved to be a reliable and valid instrument in Turkish university students. The LLS can be used for practice and research purposes in assessing love of life.

Keywords. Love of Life Scale, subjective well-being, social support, personality traits, Turkish adaptation

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ÖZET

Amaç: Bu çalışma, Türk üniversite öğrencilerinde Hayat Sevgisi Ölçeği'nin (LLS) psikometrik özelliklerini değerlendirmeyi amaçlamıştır.
Yöntemler: LLS, Olumlu ve Olumsuz Yaşantılar Ölçeği, Yaşam Doyumu Ölçeği, Çok Boyutlu Algılanan Sosyal Destek Ölçeği ve On Maddelik Kişilik Envanteri'nin Türkçe çevirisi tıp öğrencilere (n=155; ortalama yaş = 21.32±1.84 yıl; 60.6) uygulandı. % kadın) ve diğer öğrencilere (n=231; yaş ortalaması = 20,76±1,70 yıl; %52.8 kız) uygulanmıştır.
Bulgular: Tıp öğrencileri kullanılarak, açıklayıcı faktör analizi ölçeğin tek faktörlü olduğunu gösterdi. LLS puanları, kişilik özelliklerinin etkilerinin ötesinde, olumlu deneyimler, olumsuz deneyimler, yaşam doyumu ve sosyal desteği önemli ölçüde öngörmüştür. Tıp öğrencisi olmayan öğrenciler kullanılarak, doğrulayıcı faktör analizi, ölçeğin tek boyutlu faktör yapısını tatmin edici indekslerle doğruladı. Ölçek her iki örneklemde de yüksek iç tutarlılık tahminleri göstermiştir.
Sonuç: LLS'nin Türkçe versiyonunun Türk üniversite öğrencilerinde güvenilir ve geçerli bir ölçek olduğu kanıtlanmıştır. LLS, yaşam sevgisini değerlendirmede uygulama ve araştırma amacıyla kullanılabilir.

Anahtar Sözcükler: Hayat Sevgisi Ölçeği, öznel iyi oluş, sosyal destek, kişilik özellikleri, Türkçe uyarlaması

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INTRODUCTION

The notion of love of life has attracted authors within the field of positive psychology in recent years (1-3). The revival of this concept in the extant literature might suggest that the concept of love of life is new and scientifically worth investigating. However, there is a handful validated measures that would facilitate the assessment of the concept within well-being research context. This study seeks to fill the gap by investigating the reliability and validity of a Turkish translation of the Love of Life Scale (LLS) proposed by Abdel-Khalek. (1,2).

Love of life has been conceptualised as an overall positive attitude toward one's own life, caring for it, and attachment to it (1,4). It has been considered as one of the new ingredients in the individual evaluation of well-being (5). Based on a factor-analytic approach, Abdel-Khalek, proposed that love of life includes three interrelated factors as (a) positive attitude toward life, (b) happy consequences of love of life, and (c) meaningfulness of life (1). Due to the moderate intercorrelations between the factors, the author also recognised for a bifactor model of the concept. That is, the concept encompasses a general factor of love of life while also acknowledging the multidimensionality of the concepts. Individuals who have higher levels of love of life report greater positive attitudes towards their life, expecting positive outcome from life and having sense of purpose in life. Literature suggests that love of life is related with greater happiness and intrinsic religiosity (3), satisfaction with life, self-efficacy, and hope (6), optimism, self-esteem, and extraversion (1) and mental and physical health (7), and less death depression (2) and psychological distress and wish to be dead (6).

The LLS was developed by Abdel-Khalek (1,2) to measure the concept of love of life. It comprises of 16 short and simple statements reflecting both general level of love of life and three aforementioned factors. Unfortunately, evidence concerning its reliability and validity is scarce. For example, there is no available information in respect to its unique contribution to different ingredients of well-being beyond personality traits. Using different samples, satisfactory reliability information has been reported in different cultures such as Egyptian undergraduate (α = .91, temporal reliability = .81) (1), Iranian female undergraduate (α = .94, one-week test-retest reliability = .85) (6), and Indian young adults (α = .88 for men and α = .70 for women) (3). However, there is some discrepancy between the research findings in terms of factorial structure of the LLS. The scale was originally introduced as encompassing three interrelated factors. Recent findings do not fully support the three-factor structure of the scale. A study by Vahid et al. (2016) using the Farsi translation of the scale suggests that the love of life may have two components rather than three: labelled as (a) positive attitude towards life and happy consequences of love of life and (b) meaningfulness of life (6). This raises the question of whether the LLS is a reliable and valid instrument in measuring love of life in different cultures. Thus, further research is needed to validate the structure of the LLS prior to use it as a tool for practice and research purposes.

With growing interest on the concept of love of life in different cultures, there is need to translate the LLS into Turkish culture to facilitate the research in this area. The goal of this study was to investigate the reliability and validity of the LLS in Turkish university students. The current study consisted of two sub-studies. In Study 1, we were interested in investigating the factor structure of the LLS using exploratory factor analysis and reliability measures of the scale. We were also interested in examining the relationship of the LLS with well-being, personality and other individual difference variables (e.g., social support). In Study 2, we were interested in testing whether the emerging factor structure of the LLS in Study 1 can be confirmed in another sample. On the basis of the previously established factor structure of the LLS, we expected to obtain the similar factor structure of the scale as reported in the original version. We also expected that the LLS scores would have positive correlations with positive indices of well-being and personality traits while it would be negatively correlated with negative experiences. We hypothesised that the LLS would show incremental value in predicting well-being outcomes over and above the personality traits. Furthermore, we expected that the factor structure of the Turkish version of the LLS emerging from an exploratory factor analysis would be same in another Turkish sample. In summary, given that the reliability and validity studies of the LLS have not been previously investigated in Turkish culture, we aim to validate the scale among Turkish university students.

METHODS

Samples

Two sample was used in the present study. Sample 1 was used for reliability, exploratory factor analysis, correlation with personality variables, well-being outcomes. Sample 2 was used for a confirmatory factor analysis.

Sample 1 included 155 undergraduates (mean $_{age}$ = 21.32±1.84 years; 60.6% females) enrolled on university courses in the Faculty of Medicine at the Gazi University. Only volunteer participants who are above the age of 18 were recruited.

Sample 2 comprised 231 undergraduate students (mean $_{age}$ = 20.76±1.70 years; 52.8% females) enrolled on university courses in the other faculties other than medicine at the Gazi University. This sample completed on the LLS and was used to confirm the factor structure of the LLS emerging from the Sample 1. A minimum sample size of 150 observations was recommended to be sufficient for conducting exploratory factor analysis (8) while a minimum sample size of 200 observations was recommended for confirmatory factor analysis (9).

Measures

Love of Life Scale. The LLS measures one's overall positive attitude toward life or enjoyment for life. The scale consists of three factors: positive attitude towards life (8 items), happy consequences of love of life (4 items), and meaningfulness of life (4 items). Responses range from 1 to 5 on a 5-point Likert-type scale (1=no and 5=very much). Example items for each factor are "Life is full of pleasure" for positive attitude towards life, "Love of life adds its beauty" for happy consequences of love of life, and "I would like to have a long life to achieve what I hope for." Though the LLS is originally introduced in Arabic, it has equivalent English form. Higher scores indicate positive attitude toward, happiness of, and meaningfulness of life (1,2). In this study, Cronbach's alpha for overall scale was .93 in Sample 1 and .94 in Sample 2.

Scales of Positive and Negative Experiences (SPANE). The scale measures one's positive and negative experiences over the past 4 weeks. It includes 12 items clustered into positive and negative experience subscales and each item is scored in terms of how often s(he) experiences those emotions. Possible answers range from 1 (very rarely or never) to 5 (very often or always). Example items are "positive" and "good" for positive experience and "negative" and "bad" for negative experience. Higher scores on each subscale respectively stand for greater experience of positive and negative feelings (10). Telef (2015) validated it into Turkish language. In this study, Cronbach's alphas were respectively .91 and .80 for positive experience and negative experience (11).

Satisfaction with Life Scale (SWLS). The SWLS assesses individuals' global judgements of their lives. The SWLS comprised 5 items (e.g., In most ways my life is close to my ideal) with 7 possible answers, ranging from 1 (strongly disagree) to 7 (strongly agree). A sample item is "In most ways my life is close to my ideal." Higher scores refer to higher level of life satisfaction (12). Turkish adaptation of the scale was conducted by Durak et al (13). In this study, Cronbach's alpha was .88.

Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS consists of 12 items that measures perceived social support from three different sources, namely family, friends, and significant others. Items are answered on a 7-point Likert type, anchored by 1 (very strongly disagree) and 7 (very strongly agree). Example items are "my family really tries to help me" for family; "my friends really try to help me" for friends, and "there is a special person who is around when I am in need" for significant others. Higher scores on each factor represent higher perceived social support based on family, friends and significant other sources (14). The MSPSS was translated into Turkish culture by Eker et al. (15). In this study, Cronbach's alpha for overall scale was .91.

Ten Item Personality Inventory (TIPI). The TIPI consists of 10 items which are grouped into five subscales: extraversion (e.g., extraverted, enthusiastic), agreeableness (e.g., critical, quarrelsome), contentiousness (e.g., dependable, self-disciplined), emotional stability (e.g., anxious, easily upset), and openness to new experience (e.g., open to new experiences, complex). Each subscale is represented with two items, one of which is revers-scored. The response scale ranges from 1 (strongly disagree) to 7 (strongly agree). Higher scores on each subscale indicate higher levels of respective personality characteristics (16). Atak (2013) examined psychometric properties of the TIPI in Turkish language (17). In this study, Cronbach's alphas for the subscales ranged between .58 and .72.

Procedure

Prior to administering the questionnaires, a written consent was requested from each participant. The purpose of the study was briefly explained to the participants. Participants were fully informed about their rights before, during and after the participation. Involvement in the study was completely voluntary and all information provided by participants were kept secure, anonymous, and confidential. The administration of the questionnaires was done during the regular class hours after obtaining permission from the responsible lecturers. The English form of the LLS was first translated into the Turkish by three native bilingual researchers who hold PhD degrees. Another bilingual person translated it back from Turkish to English. After discrepancies resolved between the two languages, the scale was conducted.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Statistical analyses

Exploratory and confirmatory factor analyses were used to test the construct validity of LLS. The Cronbach's α coefficient was used to compute internal consistency reliability. Pearson product-moment correlated was utilized to explore the link between the study variables. Hierarchical regression analysis was conducted to examine the role of love of life in the prediction of well-being outcomes over and above the personality traits. We performed CFA using maximum likelihood. The goodness of fit of the model was assessed through fit indices available in AMOS-25 including the Tucker-Lewis index (TLI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The TLI and CFI ≥.90 are considered as satisfactory fit whereas RMSEA <0.08 and SRMR <0.08 are considered as adequate fit (18). All data analyses were carried out using AMOS-25 and SPSS-25 for Windows.

RESULTS

Exploratory factor analysis

Sample 1 was used to examine the factor structure of the LLS. Exploratory factor analysis using maximum likelihood extraction with promax rotation was conducted on the respective data. The Kaiser-Meyer-Olkin measure of sampling adequacy was .92 and Bartlett's test of sphericity was 1617.0 ($p < .001$). The three-factor structure of the LLS was not supported with this data. Therefore, the number of factors to extract was fixed to 1. The analysis yielded one factor with eigenvalue greater than 1, which explained 51.28% of the total variance. Factor loadings ranged from .36 (item 9) and .84 (item 6).

Associations with measures of well-being and personality

Table 1 presents Pearson correlations between love of life, well-being measures, and personality traits. Love of life was positively correlated with positive experience, satisfaction with life, social support, extraversion, agreeableness, conscientiousness, emotional stability, and openness to new experience, and negatively correlated with negative experience. The correlations ranged between small-to-moderate (|rs| = .20 to .64).

A series of hierarchical regression analyses were conducted to examine unique role of love of life in predicting well-being outcomes after controlling for personality. In the first regression model, extraversion (β=.31, p<0.01), conscientiousness (β=.17, p<0.05), and emotional stability (β=.17, p<0.05) were significant predictors of positive experience. Inclusion of love of life (β=.50, p<0.05) into the model produced a significant change in positive experience (ΔR^2 = .18). In the second regression model, agreeableness (β=-.26, p<0.01) and emotional stability (β=-.27, p<0.01) were significant predictors of negative experience. Adding love of life (β=-.23, p<0.01) into the regression model significantly contributed to the model by explaining additional 4% of the total variance in negative experience. In the third regression model, extraversion (β=.20, p<0.05) and emotional stability (β=.23, p<0.05) significantly predicted satisfaction with life. When love of life (β=.50, p<0.01) was entered into the analysis, the regression model was substantially improved by accounting for additional 18% of the total variance in satisfaction with life. Finally, extraversion (β=.34, p<0.01), conscientiousness (β=.19, p<0.05), and openness to new experience (β=.16, p<0.05) were significant predictors of social support. Love of life uniquely predicted social support (β=.26, p<0.01) by explaining a significant amount of variance in social support (ΔR^2 = .05)(Table 2).

Table 1. Descriptive statistics and correlations among the variables

	Descriptive statistics					Correlations									
Variable	Mean	SD	Skew	Kurt	α	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Love of life	51.70	11.48	-0.30	-0.12	0.93	—	.64**	-.46**	.60**	.43**	.43**	.33**	.38**	.41**	.20*
2. Positive experience	19.46	3.88	-0.02	-0.53	0.91		—	-.60**	.64**	.44**	.45**	.31**	.41**	.37**	.13
3. Negative experience	17.55	3.94	0.19	-0.26	0.80			—	-.50**	-.36**	-.36**	-.45**	-.40**	-.46**	-.20*
4. Satisfaction with life	19.71	6.64	-0.15	-0.66	0.88				—	.50**	.34**	.23**	.36**	.37**	.10
5. Social support	62.85	15.51	-0.53	-0.51	0.91					—	.44**	.29**	.38**	.25**	.06
6. Extraversion	8.69	3.19	-0.31	-0.69	0.70						—	.34**	.48**	.30**	.36**
7. Agreeableness	9.83	2.46	-0.62	0.25	0.67							—	.33**	.37**	.27**
8. Conscientiousness	10.40	2.53	-0.50	-0.41	0.58								—	.44**	.26**
9. Emotional stability	8.68	2.89	-0.07	-0.54	0.72									—	.11
10. Openness to experiences	9.52	2.53	-0.22	-0.57	0.69										—

**. p<0.01; *. p<0.05

Table 2. Regression analysis predicting well-being

	Positive experience				Negative experience				Satisfaction with life				Social support			
Predictor	B	β	t	*p*	B	β	t	*p*	B	β	t	*p*	B	β	t	*p*
Step 1	$F(5,154)=12.60$, $R^2=.30$, $p<0.01$				$F(5,154)=15.73$, $R^2=.35$, $p<0.01$				$F(5,154)=8.10$, $R^2=.21$, $p<0.01$				$F(5,154)=10.61$, $R^2=.26$, $p<0.01$			
Extraversion	0.38	0.31	3.73	0.00	-0.15	-0.12	-1.56	0.12	0.42	0.20	2.29	0.02	1.67	0.34	4.05	0.00
Agreeableness	0.17	0.11	1.42	0.16	-0.42	-0.26	-3.48	0.00	0.12	0.04	0.52	0.60	0.92	0.15	1.84	0.07
Conscientiousness	0.26	0.17	2.04	0.04	-0.21	-0.13	-1.62	0.11	0.41	0.16	1.76	0.08	1.19	0.19	2.24	0.03
Emotional stability	0.22	0.17	2.07	0.04	-0.36	-0.27	-3.48	0.00	0.53	0.23	2.72	0.01	0.12	0.02	0.28	0.78
Openness to experiences	0.11	0.07	0.99	0.33	-0.03	-0.02	-0.31	0.76	0.14	0.05	0.67	0.51	0.98	0.16	2.08	0.04
Step 2	$F(6,154)=22.55$, $R^2=.48$, $\Delta R^2=.18$, $p<0.01$				$F(6,154)=15.21$, $R^2=.38$, $\Delta R^2=.04$, $p<0.01$				$F(6,154)=15.97$, $R^2=.39$, $\Delta R^2=.18$, $p<0.01$				$F(6,154)=11.17$, $R^2=.31$, $\Delta R^2=.05$, $p<0.01$			
Love of life	0.17	0.50	7.15	0.00	-0.08	-0.23	-2.93	0.00	0.29	0.50	6.61	0.00	0.36	0.26	3.25	0.00

Confirmatory factor analysis

Using Sample 2, confirmatory factor analysis was conducted to perform the one-factor structure model of the LLS that emerged from exploratory factor analysis. The results showed an adequate fit to the data, ($\chi 2 = 390.31$, df = 104, $p < .001$; CMIN/DF = 2.90; CFI = .92; TLI =. 90; RMSEA = .09; SRMR = .051). The standardised factor loadings ranged from .40 to .85, suggesting moderate to strong factor loadings. The results verified the unidimensional factor structure of the LLS in the Turkish language.

DISCUSSION

This study presents support for the Turkish version of the LLS as a reliable and valid instrument for the assessment of overall positive attitude toward one's own life, caring for it, and attachment to it. In the original study, the LLS comprises of 16 items and 3 sub-scales (positive attitude toward life, happy consequences of love of life, and meaningfulness of life). The Turkish version of the instrument includes 16 items and one general factor partially overlapping with the factor structure reported by original study (1). The single factor structure accounted for 51.28% of the total variance. The factor loadings of the items ranged from .36 to .84 suggesting that they are adequate-to-good indicators of their underlying factors. In addition, Cronbach alpha estimates were .93 in Sample 1 and .94 in Sample 2. These results showed a high internal consistency of Turkish version of LLS. After performing EFA, CFA was carried out to verify the factor structure of the LLS in Turkish culture. Although CFA provided support for the single factor structure producing from the EFA, this new factor structure is only partially consistent with the original factor structure which was presented as a three-factor structure with a recognition of general factor. The Farsi translation of the LLS generated a two-factor solution rather than three (6). This suggests that the factor structure of the LLS may produce distinct results in different cultures.

The convergent validity of the LLS was evaluated based on the results of correlation analysis with the scores of well-being and personality measures. Love of life had the highest positive correlations with positive experience and satisfaction with life. The correlations between the love of life and negative experiences, social support, extraversion, agreeableness, conscientiousness, emotional stability, and openness to new experiences were small-to-moderate. This suggests that individuals with a high level of love of life tend to have more adaptive personality traits and better subjective well-being. These results are consistent with those of previous studies showing the positive links between love of life and well-being outcomes and personality (1,5,7). Love of life is not only related to well-being but also religiosity (3), death distress (2), and general self-efficacy and hope (6).

The incremental validity of the LLS was tested using a series of hierarchical regression analysis. The results showed that love of life had an unique contribution to positive experiences, negative experiences, satisfaction with life, and social support over and beyond the personality traits. The contribution of love of life to well-being is independent than personality traits. The direct link between love of life and well-being outcomes and personality traits have been studied (19). However, the importance of love of life as a critical ingredient of well-being after controlling for the personality traits is a particular contribution of this study. Therefore, these results further support the validity of LLS.

An important strength of this is that both nulliparous and multiparous women were two samples were used to cross-validate the factor structure of the LLS using EFA and CFA which resulted in similar findings. As such, the emerging factor will be comparable in future studies. Considering these findings, the Turkish version of the LLS has adequate psychometric properties and it can be utilised as a reliable and valid instrument in assessing overall positive attitude toward one's own life. As there is a scarcity of the number of studies on love of life and the relative measurement tool, this study presents an important contribution to the extant literature.

There are several limitations of this study. The first limitation is related to the inclusion criteria of participants using a convenience sampling method. Only students were included in this study. Therefore, the results of this study are not generalizable to other samples. Second, a cross-sectional design was used to test the contribution of love of life in the prediction of well-being outcomes over and above the personality traits. It is difficult to draw a causal inference from such a design. To obtain a richer understanding of the association of love of life with well-being and mental health outcomes, longitudinal or experimental studies should be used for causal relationships.

This study presented a reliable and valid Turkish version of LLS. The EFA and CFA confirmed the one-dimensionality of the instrument. These findings further support Abdel-Khalek who recognises both one-dimensionality and multidimensionality of the LLS (1). The Turkish version of LLS proved to be suitable for clinical and research purposes in university students. Nevertheless, more research of higher and diverse sample size and employing Rasch analysis are needed to verify this capacity of the scale. Our results suggest that love of life is a very important predictor of well-being outcomes. However, the potential role of love of life in contributing to different well-being and mental health outcomes should also be explored.

Conflict of interest

No conflict of interest was declared by the authors.

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Love of Life Scale (LLS)

Instructions: Read the following statements, then decide to what extent each describes your feelings, behaviour or opinions. Show how it does or does not apply to you in general by circling the appropriate number after each statement.

Scale		No	A Little	Moderate	Much	Very Much
1	Life is full of pleasures.	1	2	3	4	5
2	There are many things that make me love life.	1	2	3	4	5
3	Love of life adds to its beauty.	1	2	3	4	5
4	Life deserves to be loved.	1	2	3	4	5
5	Love of life makes me happy.	1	2	3	4	5
6	Life seems beautiful and wonderful to me.	1	2	3	4	5
7	I look at life from its beautiful side.	1	2	3	4	5
8	Love of life gives me hope.	1	2	3	4	5
9	I would like to have a long life to achieve what I hope for.	1	2	3	4	5
10	Love of life brings me satisfaction.	1	2	3	4	5
11	Life is a treasure we should guard.	1	2	3	4	5
12	Life is beautifully meaningful.	1	2	3	4	5
13	Life is a blessing whose value we should appreciate.	1	2	3	4	5
14	I realize that my existence in this life has great meaning.	1	2	3	4	5
15	I always have a wonderful feeling of loving life.	1	2	3	4	5
16	I like to be optimistic about life.	1	2	3	4	5