

Love of Life in Turkish Students during the COVID-19 Pandemic

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The aims of the present study were (a) to introduce the Turkish version of the Love of Life Scale (LLS), (b) to develop a short form of the LLS, (c) to assess the psychometric properties and explore the factor structure of this Turkish version of the LLS, (d) to examine gender differences in the LLS, and (e) to provide a data point for the level of love of life during the pandemic in Turkey, as a point of reference for future studies after the end of the pandemic. A cross-sectional convenience sample of 381 college students responded to the Turkish version of the LLS. Cronbach's α was .95 for the long form LLS. Both Cronbach alpha and McDonald Omega values were .92 for the short form of LLS. Principal components analysis extracted one component labeled *Love of Life* for both forms. The short version of LLS contained four items, with a first principal component accounting for 80.15% of total variance. The long form of LLS correlated very highly with its short form. The sex difference for the long and short forms LLS total scores was not statistically significant. Age differences were found for the long form LLS total scores but not for the short form.

The present results demonstrate the applicability of the Turkish version of the LLS to Turkish college students.

Keywords: Love of life, Positive mental health, COVID-19, Turkey

Psychology, especially after World War II, became to a large extent the science of healing, concerned primarily with mental disorders and their treatment. However, psychology is not only the science of people who treat mental illnesses and those who seek healing. It is claimed that the task of psychology is to investigate the strengths and virtues of healthy individuals, to nurture the best in people. This requires an understanding of human behavior with all its complexity (Seligman & Csikszentmihalyi, 2000).

This is the field of “positive psychology”, but this term does not imply that all psychological studies except positive psychology should be considered negative. For example, while clinical psychologists study how couples and families resolve conflicts, there are few studies on laughing and having fun together. While there are several studies on the bad and negative moral feelings of others and ourselves, such as anger, humiliation, disgust, shame, guilt, there are very few studies on the feelings we or others feel when good things are done, such as gratitude, admiration, and humility (Gable & Haidt, 2005). The study of positive emotions and of healthy individuals and institutions forms the foundation of positive psychology.

In the last two decades, the impact of positive qualities and traits on human well-being and mental health has attracted attention, and this has spawned an increasing amount of research in positive psychology (Dadfar, Lester *et al.*, 2020; Sevinç, 2019; Turan, 2019). Concepts such as well-being, happiness, virtues, and life satisfaction are among the most studied subjects (e.g., Abdel-Khalek, 2007; Baynal, 2020). Positive psychology aims to increase the quality of life by focusing on positive personality traits and experiences. Rather than treating psychological disorders, it promises to prevent them (Seligman & Csikszentmihalyi, 2000). In other words, positive psychology is the study of the conditions and processes that contribute to the development of optimal functioning of people, groups, and institutions (Gable & Haidt, 2005).

Much research on the happiness of individuals has focused on extrinsic motivations rather than intrinsic motivations (Nielsen, 2014). Positive psychology emphasizes the latter in its quest to understand what makes the individual happier. Happiness not only enables individuals to experience deep and strong positive emotions, but also protects them against negative experiences (Compton & Hoffman, 2013; Seligman, 2002). Seeing meaningful happiness, altruism, and well-being in relationships with others as the basis of true well-being can create

a sense of meaning and purpose that enables individuals to deal effectively with the adversities of life (Nielsen, 2014).

Love is not only the stuff of poetry and novels, but is also studied scientifically as one of the main topics in positive psychology (Hendrick & Hendrick, 2003; Seligman & Csikszentmihalyi, 2000). It has been dissected in the scientific literature from many perspectives, including biological, biochemical, and neurological. Evolutionary biology considers love to be a feeling that protects the individual, family, and immediate environment (Compton & Hoffman, 2013), evolved biologically by kin selection as an attachment system that benefits copies of one's own genes in biological kin (Hamilton, 1964). True to its evolutionary and ontogenetic origins in the mother-child bond, love struggles to protect the loved person or thing, but it also entails a sense of being secure. Love is considered one of the most basic emotions, ranging on a spectrum from dislike to passionate romantic love. It can be one-dimensional or multi-dimensional, and is considered a strong driving force to motivate human behavior (Compton & Hoffman, 2013; Power, 2016, pp. 27-50). However, love of life is not a concept associated with love life or sex life (Abdel-Khalek, 2007). Love is a more general construct related to subjective well-being (SWB), in the form of love of life (LOL). It is the opposite of hating life which leads to destructive behaviors such as suicide.

There are many studies on well-being and happiness in the scientific literature (Abdel-Khalek, Merchi, & Chebbi, 2018; Ayten, 2013; Diener, 1984; Diener et al., 1985; Turan, 2018). Abdel-Khalek (2007) proposed love of life as a new concept related to happiness and well-being. He defined it as a generally positive attitude towards one's own life. The Love of Life Scale (LLS), which expresses embracing life, enjoying life and finding life worthwhile, is positively correlated with happiness, hope, optimism, life satisfaction, mental health, physical health, and religiosity in Arabic-speaking countries as well as other countries. Love of life can be considered as one of the components of well-being, and is negatively correlated with anxiety, depression, neuroticism, and wish to be dead. Although love of life is associated with positive emotions, it is a different, more specific construct (Abdel-Khalek, 2007, 2013a; Abdel-Khalek & Lester, 2011; Dadfar, Abdel Khalek & Lester, 2020; Dadfar et al., 2017).

One side of the Love of Life scale measures firm attachment to life, satisfaction with life, and happiness. A positive and significant relationship was found between scores on the Love of Life Scale and the Oxford Happiness Inventory (OHI). The negative pole of love of life extends to negative emotions, hating life, depressed mood, and even wanting death. In studies conducted with the LLS, significant negative correlations were found with suicidal ideation, death depression, and hopelessness. Dadfar, Gunn et al. (2021) reported that in their research, applying a love of life model for psychiatric outpatients, the creation of

pleasant, positive emotions and focusing the patient's attention towards a positive perspective on life supported the treatment of these patients.

When related to personality traits, love of life (LOL) showed a significant positive relationship with extraversion, whereas associations with both psychoticism and neuroticism were negative in female participants (Abdel-Khalek, 2007, 2013a). LOL was positively associated with the Big-Five personality factors of extraversion, conscientiousness, openness, and negatively with neuroticism (Abdel-Khalek, 2020b). Al-Arja (2018) found that Christian Palestinian students have higher love of life scores than Muslims, while those living in villages love life more than those living in refugee camps. She concluded that love of life is affected by political and economic conditions.

A negative mood can reduce positive feelings, including love of life. Dadfar, Abdel-Khalek and Lester (2020) reported that psychiatric outpatients who scored higher on mental and psychological well-being scales obtained higher scores on the LLS. Dadfar, Eslami *et al.* (2020) reported that psychiatric outpatients had significantly lower LLS scores than multiple sclerosis patients and university students. They indicated psychiatric outpatients are more exposed to stress, anxiety, and depression than non-clinical participants.

A considerable amount of research has indicated negative effects of the COVID-19 pandemic on mental health (e.g. Chaiuk & Dunaievska, 2020; Dadfar & Lester, 2020; Gashi, 2020; Gencer & Cengil 2020, pp. 325-326; Karslı 2020a, p. 288; Kirman, 2020; Özcan 2020, p. 257; Pappa *et al.*, 2020; Thomas & Barbato, 2020). People experienced more stress, fear, anxiety, and depression than usual during the COVID-19 outbreak (e.g., Dadfar & Lester, 2020; Dadfar *et al.*, in press; Dadfar, Mohagegh *et al.*, 2021; Pappa *et al.*, 2020; Thomas & Barbato, 2020). Administration of the LLS in Turkey during the COVID-19 pandemic, as done in the present study, opens up the possibility to explore the effects of the COVID-19 pandemic on love of life. However, there are no available results on the LLS from Turkish participants before the pandemic.

The aims of the present study were (a) to introduce the Turkish version of the Love of Life Scale (LLS), (b) to develop a short form of the LLS, (c) to assess the psychometric properties and explore the factorial structure of this Turkish version of the LLS, (d) to examine gender differences in the LLS, and (e) to provide a data point for the level of love of life during the pandemic in Turkey, as a point of reference for future studies after the end of the pandemic.

Methods

Participants

Using a cross-sectional study design, a convenience sample of 381 Turkish students (102 men, 279 women) was selected from Ordu University, Ordu, Turkey (73.2% female). The mean age was 21.81 years ($SD = 4.67$).

Measure

The Love of Life Scale (LLS), developed by Abdel-Khalek (2007, 2013b, 2020a), is a 16-item self-report scale that measures the love of life concept. Each item is answered on a five-point Likert-type scale: *No* (1), *A little* (2), *Moderate* (3), *Much* (4), and *Very much* (5). All items are keyed positively. The total scale score can range from 16 (strong disagreement with all items) to 80 (strong agreement with all items). High scores indicate high love of life. The LLS was developed originally in Arabic and has equivalent English and Farsi versions. It has been administered to university students from Algeria, Egypt, India, Iran, Kuwait, Lebanon, Malaysia, Palestine, Qatar and US (Abdel-Khalek, 2007; Abdel-Khalek & El-Nayal, 2018; Abdel-Khalek & Lester, 2011; Abdel-Khalek & Zine El-Abiddine, 2019; Abdel-Khalek et al., in press; Al-Arja, 2018; Atef Vahid et al., 2016), as well as to clinical samples (Dadfar, Abdel-Khalek & Lester, 2020; Dadfar, Eslami et al., 2020; Dadfar, Lester et al., 2021). In Abdel-Khalek's study (2007), the LLS had high internal consistency (Cronbach $\alpha = .91$), and test retest reliability ($r = .81$).

Procedure

After translation of the LLS into Turkish, five experts in English including two psychologists were consulted. Furthermore, this preliminary version was also evaluated by a Turkish expert in terms of language. After the final version of the Turkish LLS was developed (Appendix A), the Ordu University Social Sciences Ethics Committee was consulted. The application was approved by the decision numbered 2021-31. The LLS was designed as a Google form and delivered to students studying in various departments of the university. Data were collected between 25/01/2021 and 9/02/2021.

Data analysis

To determine the normality of the data and equality of variances, the Kolmogorov-Smirnov test and Levene's test were used, respectively. The data were analyzed using descriptive statistics (means, standard deviations), *t*-tests, Pearson correlation coefficients, principal components analysis, and confirmatory factor analysis (CFA) to identify the factorial structure of the LLS. To determine the number of factors to be retained in the principal components analysis, two

criteria were followed: (a) eigenvalue greater than or equal to 1.0, and (b) the scree test. The varimax orthogonal rotation of axes was adopted when there was more than one extracted factor.

A comprehensive analytical approach was adopted for the current study. First of all, three factor structures of LLS were tested by confirmatory factor analysis. Due to not having acceptable results from confirmatory factor analysis, efforts at scale development were started. To explore the factorial structure of LLS, exploratory factor analysis was applied. Exploratory factor analysis was used to explore the factorial structure. Although a single factor with eigenvalue >1 was extracted from the exploratory factor analysis, the model did not show acceptable fit. Additionally, the aim was to develop a short form of LLS based on the current data. For this purpose, discriminant analysis was employed to identify items for this shortened scale. Four items were selected, and exploratory factor analysis was performed with these four items. The factorial structure of the short form of LLS was tested by confirmatory factor analysis. Cronbach's Alpha and McDonald Omega coefficients were used to determine the reliability of this 4-item short form. SPSS 24, AMOS 24 (Kline, 2016), and JASP software were used for data analysis.

Results

The mean total score on the LLS for all participants was 54.89 ($SD = 14.59$). Mean scores on the LLS items ranged from 2.95 ($SD = 1.15$) to 3.92 ($SD = 1.15$). The item-total correlations ranged from .57 to .87 (all statistically significant at the .01 level). Cronbach's α was .95 (Table 1).

Table 1. Means, standard deviations (SD), and item-total correlations of the Love of Life Scale (LLS); $N = 381$ respondents.

LLS items	Mean \pm SD	r with total score
1. Life is full of pleasures.	3.43 \pm 1.11	.704
2. There are many things that make me love life.	3.50 \pm 1.09	.832
3. Love of life adds to its beauty.	4.15 \pm 1.09	.675
4. Life deserves to be loved.	3.43 \pm 1.25	.785
5. Love of life makes me happy.	3.51 \pm 1.18	.869
6. Life seems beautiful and wonderful to me.	2.95 \pm 1.15	.824
7. I look at life from its beautiful side.	3.15 \pm 1.11	.794
8. Love of life gives me hope.	3.28 \pm 1.17	.867
9. I would like to have a long life to achieve what I hope for.	3.37 \pm 1.39	.572

LLS items	Mean ± SD	r with total score
10. Love of life brings me satisfaction.	2.95 ± 1.17	.788
11. Life is a treasure we should guard.	3.91 ± 1.16	.745
12. Life is beautifully meaningful.	3.64 ± 1.20	.801
13. Life is a blessing whose value we should appreciate.	3.92 ± 1.15	.760
14. I realize that my existence in this life has great meaning.	3.48 ± 1.36	.718
15. I always have a wonderful feeling of loving life.	2.90 ± 1.18	.802
16. I like to be optimistic about life.	3.32 ± 1.19	.819
Total score	54.89 ± 14.59	
Cronbach's Alpha		.95

To test the structural validity of LLS, item-total correlations were examined within the scope of item analysis. They ranged from .57 to .87. In line with this finding, it was decided that all items of LLS were consistent with a single major construct, and further analyses should be continued with all the items (Table 2).

Table 2. Results of item analysis.

LLS items	Scale mean if item deleted	Scale variance if item deleted	Corrected item – total correlation	Cronbach's α if item deleted
LLS_i1	51.46	191.360	.662	.952
LLS_i2	51.39	187.481	.806	.949
LLS_i3	50.74	192.663	.632	.953
LLS_i4	51.46	185.801	.748	.950
LLS_i5	51.38	184.426	.847	.948
LLS_i6	51.94	186.517	.796	.949
LLS_i7	51.74	188.476	.763	.950
LLS_i8	51.61	184.664	.845	.949
LLS_i9	51.52	191.724	.502	.956
LLS_i10	51.94	187.439	.755	.950
LLS_i11	50.98	189.097	.707	.951
LLS_i12	51.25	186.255	.768	.950
LLS_i13	50.97	188.812	.724	.951
LLS_i14	51.41	186.211	.668	.952
LLS_i15	51.99	186.629	.770	.950
LLS_i16	51.57	185.725	.789	.950

After item analysis, the validity of the three-factor structure of LLS was evaluated by means of confirmatory factor analysis (CFA). Four different models were tested. The first model (hypothesis model) included a structure named first-order CFA. This model assumed covariances among the factors of LLS. The second model (Model A) assumed that all items of LLS load only on a single factor. The third model (Model B) demonstrated a structure described as second-order CFA. Model B included associations of sub-dimensions of LLS with a single factor. The fourth model (Model C) is a bi-factor model. It tests the assumption that the LLS items load on both a single factor and other related factors.

The four models were compared. AIC and ECVI were the fit indices examined to decide which of the four models was more appropriate. This procedure showed that the fourth model (bi-factor model) had the lowest AIC and ECVI values ($\chi^2/df = 3.91$, $RMSEA = .08$ (90%CI [.078, .098]), $TLI = .93$, $CFI = .95$, $GFI = .91$, $SRMR = .03$; $AIC = 430.40$, $ECVI = 1.133$ 90%CI [0.997, 1.288]). In other words, the bi-factor model seemed to fit best. On the other hand, there were insignificant factor loadings in the bi-factor model. As a consequence, four models were rejected. All fit indices for the tested models are presented in Table 3.

Table 3. Summary of the results of confirmatory factor analysis.

	Hypothesis Model	(Model A)	(Model B)	(Model C)
χ^2	626.85	693.72	693.72	324.40
df	101	104	104	83
χ^2/df	6.21	6.67	6.67	3.91
RMSEA	.11 [.108, .126]	.122 [.114, .131]	.122 [.114, .131]	.08 [.078, .098]
TLI	.87	.86	.86	.93
CFI	.89	.89	.88	.95
GFI	.82	.81	.81	.91
SRMR	.05	.04	.04	.03
A/C	696.85	757.72	757.72	430.40
ECVI	1.83 [1.636, 2.052]	1.99 [1.784, 2.223]	1.99 [1.784, 2.223]	1.133 [.997, 1.288]

Note: Lower χ^2/df , RMSEA, SRMR, AIC and ECVI values indicate better fit.

It was concluded that the three-factor structure of LLS was not supported by confirmatory factor analysis in this Turkish sample. Therefore, we further explored the factorial structure. To this end, we first applied exploratory factor analysis. Kaiser-Meyer-Olkin (KMO) and Bartlett sphericity tests were performed in order to determine the suitability of the items in the scale for analysis (Field, 2013). The KMO value was found to be .948, and Bartlett's sphericity test was significant

($\chi^2_{(120)} = 4883.044, p < .001$). A single factor was extracted from the 16-item scale accounting for 60.27% of the total variance, and labeled *Love of Life* (Table 4 and Figure 1). This should have been done before the CFA.

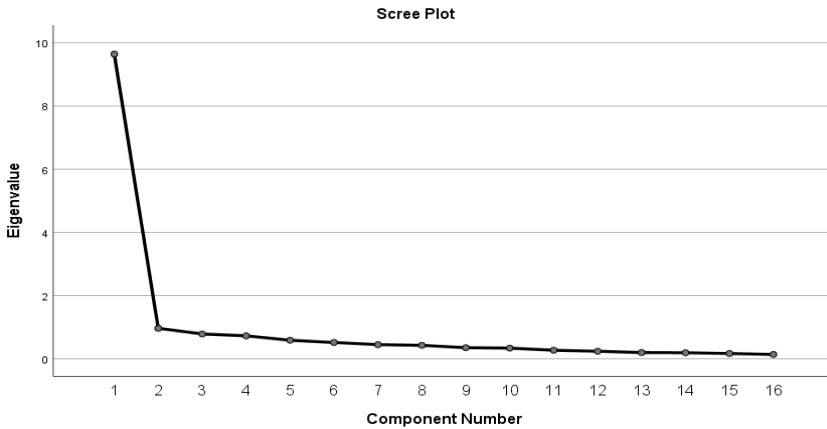


Figure 1. Scree plot of the Love of Life Scale (LLS).

Table 4. Factor loadings of the Love of Life Scale (LLS), $N = 381$ respondents. Factor 1 labelled: Love of Life.

LLS items	Factor 1
1. Life is full of pleasures.	.706
2. There are many things that make me love life.	.839
3. Love of life adds to its beauty.	.672
4. Life deserves to be loved.	.787
5. Love of life makes me happy.	.873
6. Life seems beautiful and wonderful to me.	.829
7. I look at life from its beautiful side.	.802
8. Love of life gives me hope.	.875
9. I would like to have a long life to achieve what I hope for.	.544
10. Love of life brings me satisfaction.	.790
11. Life is a treasure we should guard.	.741
12. Life is beautifully meaningful.	.800
13. Life is a blessing whose value we should appreciate.	.760
14. I realize that my existence in this life has great meaning.	.711
15. I always have a wonderful feeling of loving life.	.803
16. I like to be optimistic about life.	.822
Eigenvalue of Factor 1	9.64
% of variance explained by Factor 1	60.27

Although the scree plot clearly showed a single dominant factor, confirmatory factor analysis (CFA) revealed that the model did not show acceptable fit to the data ($\chi^2/df=6.67$, $RMSEA=.122$ (90% CI [.114, .131]), $TLI=.86$, $CFI=.87$, $GFI=.80$, $SRMR=.05$). The standardized factor loadings ranged from $\lambda=.68$ to $\lambda=.87$. The CFA results demonstrated that the single-factor structure of LLS was not verified, though all standardized factor loadings were large and highly significant statistically.

This finding may be based on cultural differences between the target language and the source language. The research was continued with the aim to create an alternative form of LLS by determining items that were highly representative of the original measure. In this process, it was decided to select items based on their item-total correlations. With this criterion, items 2, 5, 6 and 8 were included. After the item selection was completed, this new abbreviated four-item Turkish LLS was evaluated by discriminant analysis, exploratory factor analysis, confirmatory factor analysis, and reliability analysis.

Discriminant analysis allows to test the accuracy of the classification based on the groups (Field, 2013). First, the total LLS scores were divided into two groups, those below the mean, and those above. Thereafter, stepwise discriminant analysis was performed to determine whether a smaller number of LLS items would significantly estimate group membership. The discriminant power of the analysis was significant ($\lambda=.39$, $\chi^2(4)=350.91$, $p<.001$). When the predictability rates of the classification obtained with the discriminant analysis were examined, it was seen that the groups were classified with high accuracy. The overall correct classification rate of 92.1% with the abbreviated 4-item scale was considerably higher than the proportional chance (49.6%) and maximum chance (55%). As a result, the discriminant analysis could be defined as a successful analysis with a high percentage of correct classifications. The results of stepwise discriminant analysis are presented in Table 5. The correlation between the means of the short and long form of LLS was very high ($r=.90$, $p<.001$).

Table 5. Stepwise discriminant analysis of LLS items.

LLS items	λ	Exact F
Item 2	.48	411.04**
Item 5	.43	253.04**
Item 6	.41	184.71**
Item 8	.39	144.43**

Note: ** $p<.01$

After determining that the items of the short form were statistically suitable, exploratory factor analysis was performed to explore the factor structure. The items in the short form of LLS were appropriate for exploratory factor analysis ($KMO = .85$; $\chi^2_{(6)} = 1086.15$, $p < .001$). The single factor extracted from the four items accounted for 80.15% of the total variance. Additionally, the single-factor model was tested with confirmatory factor analysis. This model revealed excellent fit to the data. The following fit indices were obtained: $\chi^2 = 4.19$, $df = 2$, $\chi^2/df = 2.09$, $p > .05$; $RMSEA = .054$ (90% CI [.010, .127]); $TLI = .99$; $CFI = .99$; $GFI = .99$; $SRMR = .001$. The descriptive statistics from confirmatory factor analysis are presented in Table 6. The standardized factor loadings of the short form of LLS ranged from .82 to .89 (Figure 2). Finally, internal consistency of the short form of LLS was examined by Cronbach alpha and McDonald Omega values. Results revealed that the short form of LLS was reliable ($\alpha = .917$; $\omega = .918$).

Table 6. Descriptive statistics for the short form of LLS.

LLS items	λ	t	R ²	Error variance
Item 2	.83	21.35	.80	.38
Item 5	.88	21.04	.68	.30
Item 6	.82	18.91	.78	.43
Item 8	.89	21.36	.68	.27

λ = Standardized factor loading

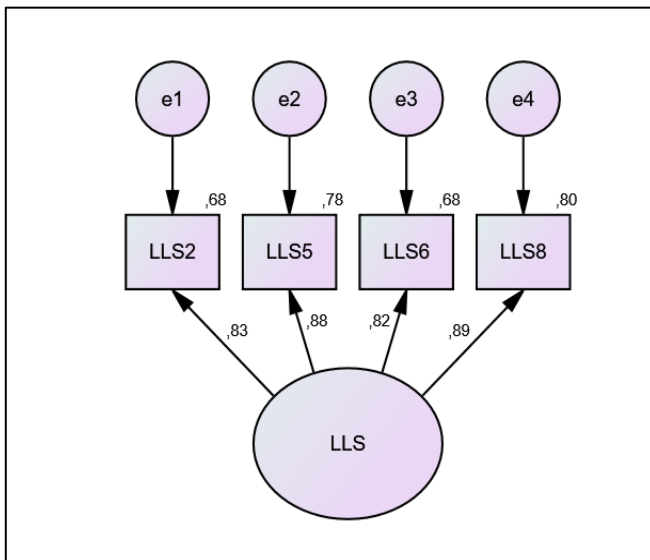


Figure 2. Path diagram of the short form of LLS.

The mean total score on the short form LLS for all participants was 13.24 ($SD = 4.11$). Mean scores on the short form LLS items ranged from 2.95 ($SD = 1.15$) to 3.51. The item-total correlations ranged from .71 to .88 (all significant at the .01 level).

Age was positively associated with long form LLS total score ($r = .197, p < .001$). However, there was no significant association between age and short-form LLS total score ($r = .015, p > .05$). The sex difference for the long form LLS total scores was very small and not statistically significant: mean long form LLS total score for women = 55.44, $SD = 14.04$; and for men 53.38, $SD = 15.97, df = 379, t = -1.22, n.s.$ The sex difference for the short-form LLS total scores was not statistically significant ($t_{(379)} = .531, p > .05$). The mean total score was 13.16 ($SD = 4.03$) for females and 13.43 ($SD = 4.34$) for males.

Discussion

Using Turkish college students, the present study found that both the long form and the short form LLS are reliable scales. Cronbach alpha reliability of the long form LLS was .95, which is higher than reported in some other studies (e.g., Abdel-Khalek & Singh, 2019), but similar to the results of others (e.g., Abdel-Khalek, 2007), indicating high internal consistency of the LLS in different countries. The item-total correlations were moderate to high. Average scores obtained on the LLS items vary between 2.95 and 3.92, indicating that this Turkish sample generally has a high liking and commitment to life. Internal consistency coefficients were acceptable based on Cronbach alpha and McDonald omega values for the short form of the LLS. The long form of LLS correlated highly with the short form LLS.

In the Egyptian study with the Arabic LLS version, Abdel-Khalek (2007) reported that the eigenvalue greater than 1 rule produced factors explaining 60.82% of the total variance, and the item-total correlations were $> .50$. The results of the present study for the long form of the LLS are very close to the original study on Egyptian participants except for the number of factors. Dadfar, Abdel-Khalek and Lester (2020) have administered the Farsi translation of LLS and found that the correlations of the LLS items with the total score were $> .65$, the LLS total score was 51.02 ($SD = 15.09$), and the KMO was .945. Exploratory factor analysis extracted a single factor that explained 58.68% of the variance. Findings of Atef Vahid et al. (2016) with the LLS Farsi version also support the psychometric properties obtained in the present study. However, unlike this study, they obtained a two-factor structure with their Iranian students. The extraction of different numbers of factors may reflect both the special characteristics of the samples and the capricious nature of principal components analysis.

The associations of the LLS with other measures in previous studies indicated its construct validity, e.g., happiness and piety (Abdel-Khalek & Singh, 2019), happiness, life satisfaction, self-efficacy, hope (Atef Vahid et al., 2016), optimism, self-esteem and extraversion (Abdel-Khalek, 2007). All these variables have positive relationships with love of life. Neuroticism and psychoticism (Abdel-Khalek, 2013a), and psychological distress and death wish (Atef Vahid et al., 2016), had negative relationships with the LOL scale indicating its divergent validity. The long form Turkish version of the LLS is predicted to have similar characteristics.

Because the main results revealed that the three-factor structure of LLS was not valid and reliable in this Turkish sample, further analysis was applied to develop a short version of the LLS. To get statistical evidence, discriminant analysis, exploratory factor analysis, confirmatory factor analysis, and reliability analysis were performed. The short version of LLS thus obtained contained four items, and its single factor accounted for 80.15% of the total variance. Confirmatory factor analysis verified the single factor model. CFI was determined as .998 in this analysis. TLI was determined as .996. $TLI \geq .90$ indicates a perfect fit. The RMSEA value shows a perfect fit as it approaches zero. In the present study, RMSEA was determined as .054. The fact that the SRMR value is close to .0 indicates the perfect fit of the model. $SRMR < .05$ indicates acceptable compliance. In the present study, SRMR was .001. Various researchers suggested different combinations for acceptable fit indices (Hancock & French, 2013; Hu & Bentler, 1999; Kline, 2016).

Despite the narrow age range of the sample, the current results provide evidence that on the long form of the LLS, love of life increases with increasing age. This finding may be related to meaning in life, which is considered one of the highly associated components of love of life (Dadfar, Abdel-Khalek and Lester, 2020). Maturity of the individual, increase in life experience, and development of the level of perception are age-related characteristics. Therefore, it is plausible that age-related biological, physiological, and social changes and development will make a difference in the individual's understanding and perception of life. Yılmaz (2018) found that 18-30 years old Turkish young adults obtained a mean score of 6.66 on the meaning of life scale; 31-60 year old adults had a mean score of 7.53; and those 60 years and older had a mean score of 8.03 on the same scale. That is, meaning of life was rising with age. Another study, conducted on mental health professionals, found that as age increased, the scores obtained on the meaning of life scale increased, and a statistically significant difference emerged between age groups (Akgül, 2014). Studies conducted in different cultures and samples also revealed that there is a positive linear relationship between age and meaning of life scores (i.e., Steger et al., 2006, 2009).

In the present study, the association between LOL and age, though statistically significant, is rather low. This may be because the sample consists of university students and the age difference between the participants is small. Karsli (2020b) could not find a statistically significant relationship between meaning of life and age in a study of university students. In a similar vein, a study conducted on meaning and purpose of life in a university sample found no significant difference between the mean scores of the age groups (Ünlü *et al.*, 2021). The LOL – age association is a possible point for further study, provided that a large sample with different ages can be recruited. But in the present study, the short version of LLS was not associated with age.

The present study found no sex difference in LLS scores in this Turkish sample. This finding is consistent with other studies in non-clinical samples of college students, adolescents and middle-aged adults (Abdel-Khalek, 2007; Abdel-Khalek & El-Nayal, 2018; Abdel-Khalek & Zine El-Abiddine, 2019; Al-Arja, 2018; Atef Wahid *et al.*, 2016; Dadfar, Abdel-Khalek and Lester, 2020; Dadfar, Eslami *et al.*, 2020; Dadfar, Lester *et al.*, 2021).

The present study has specific limitations. The findings were based only on one Turkish university and may not generalize to the general Turkish population. The LLS can be studied in other universities and in the general population after the end of the COVID-19 pandemic, for comparison with the present results which were obtained during the pandemic. Only the construct validity of the LLS was explored in the present study. There is also a need to compute the test-retest reliability of the LLS for both forms. Future studies should be focused on the factorial structure of the short form of LLS in different cultures. It is emphasized that the validity of the four-item LLS form in other cultures can be investigated. To test the factor structure of the scale, exploratory and confirmatory analyses were performed using the same dataset. For this, the ideal way is to have two independent samples and test exploratory factor analysis in one sample and confirmatory analysis in another sample. The predictiveness of the given construct/scale on well-being and mental health outcomes is key to establishing the usefulness of the scale. However, this issue was not addressed in the present study. The predictive validity of the scale needs to be further addressed in future studies.

Conclusion

The Turkish version of the LLS is a one-dimensional scale with good internal consistency in the present sample of college students from Turkey. The present results introduced a Turkish short version for the LLS.

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Appendix A

The Turkish version of the long form Love of Life Scale (LLS)

Yönerge: Lütfen, aşağıdaki ifadeleri okuyun, ardından, hangi ifadenin sizin duygularınızı, davranışlarınızı ve düşüncelerinizi ne derece açıkladığına karar verin. Genel olarak sizin için ne kadar uygun olup olmadığını her bir ifade için 1-5 arasında bir değeri işaretleyerek gösterin.

Yaşınız:

Cinsiyetiniz: Erkek Kadın

Y.S Ölçeği	Hiç	Biraz	Orta	Çok	Çok Fazla
1. Yaşam zevklerle doludur.	1	2	3	4	5
2. Yaşamı sevmemi sağlayan birçok şey vardır.	1	2	3	4	5
3. Yaşam sevgisi, yaşamı güzelleştirir.	1	2	3	4	5
4. Yaşam sevilmeyi hak ediyor.	1	2	3	4	5
5. Yaşam sevgisi beni mutlu ediyor.	1	2	3	4	5
6. Yaşam bana güzel ve harika görünüyor.	1	2	3	4	5
7. Yaşama güzel tarafından bakırım.	1	2	3	4	5
8. Yaşam sevgisi bana umut veriyor.	1	2	3	4	5
9. Arzu ettiğim şeylere ulaşmak için uzun bir ömre sahip olmayı isterim.	1	2	3	4	5
10. Yaşam sevgisi beni tatmin ediyor.	1	2	3	4	5
11. Yaşam, korumamız gereken bir hazinedir.	1	2	3	4	5
12. Yaşam güzel bir şekilde anlamlıdır.	1	2	3	4	5
13. Yaşam, değerini takdir etmemiz gereken bir nimettir.	1	2	3	4	5
14. Bu yaşamdaki varlığımın büyük bir anlamı olduğunun farkındayım.	1	2	3	4	5
15. Her zaman yaşamı sevmeye yönelik harika bir hisse sahibim.	1	2	3	4	5
16. Yaşam hakkında iyimser olmaktan hoşlanırım.	1	2	3	4	5

Appendix B

The Turkish version of the short form Love of Life Scale (LLS)

Yönerge: Lütfen, aşağıdaki ifadeleri okuyun, ardından, hangi ifadenin sizin duygularınızı, davranışlarınızı ve düşüncelerinizi ne derece açıkladığına karar verin. Genel olarak sizin için ne kadar uygun olup olmadığını her bir ifade için 1-5 arasında bir değeri işaretleyerek gösterin.

Yaşınız:

Cinsiyetiniz: Erkek Kadın

Y.S Ölçeği	Hiç	Biraz	Orta	Çok	Çok Fazla
1. Yaşamı sevmemi sağlayan birçok şey vardır.	1	2	3	4	5
2. Yaşam sevgisi beni mutlu ediyor.	1	2	3	4	5
3. Yaşam bana güzel ve harika görünüyor.	1	2	3	4	5
4. Yaşam sevgisi bana umut veriyor.	1	2	3	4	5