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HAYATIN AMACI ÖLÇEĞİNİN PSİKOMETRİK ÖZELLİKLERİ: FAKTÖR YAPISI VE GÜVENİLİRLİĞİ
PSYCHOMETRIC PROPERTIES OF THE PURPOSE IN LIFE SCALE: FACTOR STRUCTURE AND RELIABILITY

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Öz

Bu çalışmanın amacı, Hayatın Amacı Ölçeği'nin (HAÖ) faktör yapısı ve güvenilirliğinin Türk kültüründe incelenmesidir. Çalışmaya, 1367 üniversite öğrencisi gönüllü olarak katılmıştır. Promax döndürme tekniğinin kullanıldığı temel bileşenler analizi, dört maddenin 4 ve üzeri faktör yüküne sahip olma ve 3 ve üzeri karşı faktör yüküne sahip olmama gibi minimum kriterleri karşılamadığını açığa çıkarmıştır. Bu dört madde ölçekten çıkarıldıktan sonra, geriye kalan 16 madde ile promax döndürme tekniğinin kullanıldığı temel bileşenler analizi tekrar yapılmıştır. Sonuçlar, Hayatın Amacı Ölçeği'nin Türkçe versiyonunun yorumlanabilir üç faktöre sahip olduğunu göstermiştir: Yaşam Kalitesi, Anlam ve Amaç, Özgürlük. Ölçeğin Cronbach alfa katsayısı .91 ve yarıya bölme güvenilirlik katsayısı .92 olarak hesaplanmıştır. Bu bulgular ölçeğin güvenilir olduğunu göstermektedir.

Anahtar Kelimeler: Hayatın Amacı Ölçeği, Faktör Yapısı, Güvenilirlik.

Abstract

The aim of this study is to examine the factor structure and reliability of the Purpose in Life scale (PIL) in Turkish culture. 1367 university students volunteered to participate in the study. A principle component analysis with promax rotation revealed that four items failed to meet a minimum criteria of having a primary factor loading of .4 or above and no-cross-loading of .3 or above. Excluding those four items, a principle component analysis with promax rotation with 16 items of PIL was conducted again. The result demonstrated that the Turkish version of PIL had three interpretable factors: Quality of Life, Meaning and Purpose, Freedom. A Cronbach's alpha of .91 and a split-half reliability of .92 were computed for the scale, indicating that the scale is satisfactorily reliable.

Keywords: Purpose in Life Scale, Factor Structure, Reliability.

Introduction

Existentialist psychologists have argued that finding or discovering a meaning in life is one of the fundamental human concern absence of which creates a great existential anxiety. In fact, for existentialist psychologist besides existential philosophers, human existence, ontological, spiritual or moral is under the threat of non-being as a whole. For Tillich, a Christian theologian and philosopher, ontic existence of human is absolutely threatened by death and relatively by fate while the spiritual existence is under the absolute threat of meaninglessness as well as relative threat of emptiness (Tillich, 1952: 42- 46). For him, emptiness refers to the prevention of creative participation in life and culture. The individual loses his or her interest in participating in daily activities and culture due to some reasons. He or she tries everything in life but can not be satisfied or the traditions lose all their meaning (Tillich, 1952: 47-47). On the other hand, Tillich defines meaninglessness as losing ultimate concern in life or losing all meanings that gives meaning to the life. This results from the inability to give an answer to the question of "what is the meaning of existence" (Tillich, 1952: 47).

Just like Tillich, Yalom (1999), an existentialist psychiatrist, considers meaninglessness as an ultimate existential concern. For him, existentialist psychology focuses on the ultimate concerns like death, freedom, isolation and meaninglessness that arise from human's existence in the world per se. He classifies meaning as terrestrial meaning and cosmic meaning. The former refers to worldly purposes and aims while the latter refers to meaning of existence as a whole and meaning of human's personal existence in the universe (Yalom, 1999: 663). Based on his works, Yalom claims that although the meaninglessness is quite prevalent complaint among the clients, it is rarely addressed in clinical setting because of its being considered as a part of other clinical syndrome (Yalom, 1999: 703-704).

Nobody else has emphasized the quest for meaning, as widely as Victor Frankl did in his works. Frankl (2000) argues that the search for meaning is the fundamental human motivation and its inhibition or frustration is the major source of anxiety. For Frankl, existential vacuum simply refers to boredom in which

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the individuals lose their interest in daily activities. Existential neurosis or neogenic neurosis, on the other hand, is characterized by explicit clinical neurotic symptoms which are considered as the signs of meaninglessness (Frankl, 2000:101-102). For Frankl, freedom makes human life meaningful and purposeful. Human can sustain his or her freedom to make choice under the worst physical and psychological conditions (Frankl, 2000: 122-123).

In psychological research, existential meaning has recently taken increased attention. According to Reker (2000), this increased interest in studying existential meaning can be attributed to a number of factors, including a shift away from a pathological orientation of the human condition toward the human potential for growth, renewed interest by psychologists in the inner development of the whole person, more precise conceptualization and operationalization of existential meaning, and an increasing acceptance of qualitative methods as a legitimate form of scientific inquiry.

Psychological research has shown that as an important psychological construct, existential meaning is associated with positive outcomes in human life such as the prevention of illness, the promotion of well-being, and successful adaptation to life's changing circumstances (Reker, Peacock, & Wong, 1987; Reker, 1997; Ulmer, Range, & Smith, 1991; Zika & Chamberlain, 1992; Shek, 1992; Emmonds & Hooker, 1992), and meaninglessness or existential vacuum is associated with negative ones like neurosis (Maddi, 1967; Ruffin, 1984), depression (Phillips, 1980), suicidal behavior (Harlow, Newcomb, & Bentler, 1986), drug abuse (Newcomb & Harlow, 1986), and alcohol dependence (Nicholson et al., 1994; Waisberg & Porter, 1994).

Following Frankl's works on existential vacuum and existential neurosis, a number of tools were developed to measure the construct of existential meaning. Purpose in Life Scale (Crumbaugh & Maholick, 1964, 1969), Life Regard Index (Battista and Almond, 1973), Life Attitude Profile-Revised (Reker, 1992), Sources of Meaning Profile-Revised (Reker, 1996), Meaning in Suffering Test (Starck, 1985), Constructed Meaning Scale (Fife, 1995) and Meaning Essay Document (DeVogler and Ebersole, 1980) can be considered among the best-known instruments to measure the various dimensions or facets of existential meaning. Among these instruments, The Purpose in Life Scale (PIL) has been the most popular measurement tool which was developed by Crumbaugh and Maholick (1964, 1969) as a 20-item, unidimensional, self-rating scale based on Frankl's concept of existential vacuum.

In the literature, there are many studies which have used the PIL as a measure of meaning in life and correlated PIL with a large number of psychological variables or constructs. Yarnell (1971), for instance, demonstrated that those with higher PIL scores suffer less anxiety and have greater self-confidence (Yarnell, 1971). Similarly, Crumbaugh and Maholick (1969) found that the individuals with higher scores in PIL had higher level of self acceptance. Using the Eysenck Personality Inventory, researchers have also shown that individuals with higher PIL scores are also less neurotic and more sociable (Pearson & Sheffield, 1974). Crandall and Rasmussen (1975) also found that lack of purpose in life is related to susceptibility to suicide and hedonism. In their study, Crumbaugh and Maholick (1964) found that except for Depression scale and K Scale, PIL was not significantly correlated with MMPI scales. In that study, they reported that PIL showed a negative correlation with Depression scale and a positive correlation with K scale of MMPI.

PIL's psychometric properties were reported to be quite favorable in a large number of research with diverse populations and across different settings (Recker, 2000). Internal consistency of PIL was reported by several studies as quite satisfactory ranging from .70 to .90 (e.g., Crumbaugh & Maholick, 1969; Reker, 1977; Shek, 1986; Zika & Chamberlain, 1992). Authors of the scale also reported a split-half reliability coefficients of .90 (Crumbaugh & Maholick, 1964).

Crumbaugh and Maholick (1969) reported that the PIL was a unidimensional scale. In their study with social alcohol drinkers and drinkers in treatment, Marsh, Smith, Piek and Saunders (2003) also identified a single dimension for PIL with the exclusion of 3 items (Items 7, 14, and 15). Yalom (1980) suggested that PIL should consist of six areas, namely, life meaning, life satisfaction, freedom, fear of death, suicide, and personal perception of life (cited in Marsh et al., 2003). Parallel to Yalom's suggestion, some studies have shown that PIL is not a unidimensional instrument as its developers reported but a multidimensional scale. For instance, Reker and Cousins (1979), obtained a six-factor solution. Chamberlain and Zika (1988) reported four factors: *Commitment and Goal Achievement*, *Excitement and Enthusiasm in Life*, *Control*, and *Contentedness with Life*. Halama (2009) found three factors: *Excitement in Life* (items 1, 2, 5, 9, 12, 19), *Contentedness with Life* (items 6, 8, 11, 10, 13, 16), and *Purpose and Goal* (items 3, 4, 7, 14, 15, 18, 20) in a Slovak sample. Shek, Hong and Cheung (1987) found five factors from the scale, namely, *Quality of Life* (items 1, 2, 5, 6, 9, 18, and 19), *Meaning of Existence* (items 3, 4, 8, 10, 17 and 20), *Constraint of Existence* (items 14, 15), *Answers to Existence* (items 11, 12, and 16) and *Future Existence/Self-responsibility* (items 7 and 13) when they used Kaiser's eigenvalue-greater-than-one rule. When they used Gorsuch's screen test they found four factors: *Evaluation of existence* (items 1, 2, 3, 4, 5, 6, 8, 9, 10, 17, 19 and 20), *Constraints of existence* (items, 11, 12, 14, 15, 18), *Suicide* (item 16) and *Future existence/Self responsibility* (items 7 and 13).

Although PIL is criticized as to some degree awkward and bulky, which may be confusing to the test taker (Harlow, Newcomb, & Bentler, 1987), a comparison study of three meaning scales conducted by Chamberlain and Zika (1988) concluded that the PIL was the most useful general measure of meaning in life.

In his master study, Kıraç (2007) translated the Purpose in Life Scale to Turkish. After administering both Turkish and English forms of the scale to 137 students who knew English and Turkish, he reported a correlation coefficient of .90 between the forms. Kıraç (2007) also reported a Cronbach Alpha of .93 and a split half reliability of .84. Although he found three factors for the scale, he did not report the findings of factor analysis in detail. For that reason, this study attempted to further test factorial structure and reliability of Purpose in Life Scale (PIL) in Turkish culture.

Method

Participants

Turkish version of Purpose in Life Scale (PIL) was administered to 1367 university students who volunteered to participate in our study from Mardin Artuklu University. 610 of the participants were female (44,6 %) and 757 of them were male (55,4 %). The participants' ages ranged from 18 to 36 ($M = 21,46$, $SD = 2,33$). The students were recruited in their ongoing classes.

Instruments

Personal Information Form: This form is created by the researcher to obtain information about the participants' ages and gender.

Purpose in Life Scale (PIL): The Purpose in Life Scale (PIL) has been the most popular measurement tool which was developed by Crumbaugh and Maholick (1964, 1969) based on Frankl's concept of existential vacuum. PIL consists of 20 items which are self-rated on a 7-point Likert scale. The sum scores of the scale ranged from 20 to 140. Higher scores show higher purpose and meaning in life. Internal consistency of PIL was reported by several studies as quite satisfactory ranging from .70 to .90 (Crumbaugh & Maholick, 1969; Reker, 1977; Shek, 1986; Zika & Chamberlain, 1992). Similarly, authors of the scale reported a split-half reliability coefficients of .90 (Crumbaugh & Maholick, 1964). Crumbaugh and Maholick (1969) reported that the PIL was a unidimensional scale. Later studies found that the scale was both unidimensional (Dale, 2003; Saunders, 2003) and multidimensional (Reker and Cousins, 1979; Shek, Hong and Cheung, 1987; Chamberlain and Zika, 1988; Halama, 2009).

Procedure

Instruments were administered to the students in class hours. Initially, the participants were informed about the purpose of the study and their volunteer participation was guaranteed. Volunteering to participate in the study, the participants were asked to read instructions and to complete the form without missing any items. They were also informed that the data obtained would be used only for research purpose.

Results

Factorial Structure of PIL

Dimensionality of 20 items from the Purpose in Life Scale (PIL) was analyzed using principle component factor analysis. Initially, the factorability of 20 PIL items was examined. Firstly, correlation matrix showed that 19 of the 20 items correlated at least .3 with at least one other item, suggesting reasonable factorability. Table 1 shows the correlations between 20 items of the PIL. Secondly, The Kaiser-Meyer Olkin measure of sampling adequacy coefficient was found to be .94, above the recommended value of .6, and Bartlett's test of sphericity was significant, $\chi^2(190) = 11839,03$, $p < .001$. Finally, the diagonals of the anti-image correlation matrix were all found to be over .5, supporting the inclusion of each item in the factor analysis.

The screen plot test and parallel analysis were used to determine the number of factors to rotate. Both tests revealed that three factors could be extracted. These three factors, which accounted for 53,17 % of the total variance, were rotated using promax rotation procedure.

The rotated solution yielded three factors which explained 53,17 % of the total variance (Factor 1 explained 40,33 % , Factor 2, 6,69% and Factor 3, 6,18 of the total variance). Four items (item 8, item 12, item 13 and item 15) failed to meet a minimum criteria of having a primary factor loading of .4 or above and no-cross-loading of .3 or above. Until we achieve the criteria of no-cross-loading of .3 or above, we repeated the analysis. At the end, excluding these four items from the analysis, the criteria of no cross-loading of .3 and above was met.

Eliminating four items (items 8, 12, 13 and 15), a final principle component analysis of remaining 16 items was conducted using promax rotation. Rotated solution yielded three interpretable factors which, in this final solution, accounted for 58,42 % of the total variance. In other words, the total variance explained by three factors increased from 53,17 % to 58,42 % with the exclusion of four items. All remaining 16 items had

primary loadings over .5 and no item was cross-loaded. The factor loading matrix for this final solution is presented in Table 2.

Factor 1, which explained the 43,92 % of the total variance, included items 1, 2, 5, 6, 9, 10 and 19. Factor 1 was named as Quality of Life. This factor consisted of the items related to exciting, enthusiastic and satisfying life. Higher scores on this factor indicate that the person's life is pleasing, enjoyable, enthusiastic and therefore meaningful. Factor 2, which accounted for 7,56 % of the variance, consisted of items 3, 4, 7, 11, 16, 17 and 20. This factor, labelled as Meaning and Purpose, included the items related to the ultimate meaning and purpose of existence, personal goals in life, the ability to find purpose and meaning. Higher scores on this factor show that the person has found a satisfactory and clear meaning in existence, has clear goals and the ability to find purpose and meaning in his or her life. Finally, Factor 3, which explained 6,94 % of the variance included the items 14 and 18 which were completely related to the freedom or personal responsibility of an individual in an existential sense. Higher scores on this factor indicate that the persons believe that they have full freedom to make their own choices and their lives are not shaped by external force (genetic or environment) but by themselves. For that reason Factor 3 was labeled as Freedom.

Table 1: Correlation Matrix for 20 Items of the Purpose in Life Scale (PIL) (N = 1367)

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.000																			
2	.689	1.000																		
3	.465	.441	1.000																	
4	.418	.341	.584	1.000																
5	.583	.658	.427	.384	1.000															
6	.525	.530	.400	.367	.598	1.000														
7	.235	.190	.274	.288	.216	.229	1.000													
8	.478	.436	.542	.425	.472	.467	.277	1.000												
9	.595	.589	.535	.487	.608	.594	.238	.585	1.000											
10	.462	.471	.399	.321	.494	.534	.226	.458	.593	1.000										
11	.443	.387	.405	.532	.409	.512	.217	.439	.534	.454	1.000									
12	.324	.287	.294	.281	.296	.337	.145	.295	.377	.360	.375	1.000								
13	.240	.176	.347	.365	.219	.242	.171	.399	.350	.278	.335	.248	1.000							
14	.172	.250	.132	.148	.186	.195	.103	.143	.236	.231	.130	.279	.141	1.000						
15	.248	.279	.190	.108	.306	.184	.101	.214	.233	.321	.215	.124	.154	.150	1.000					
16	.331	.283	.326	.342	.282	.392	.143	.315	.405	.325	.426	.261	.255	.129	.088	1.000				
17	.485	.466	.544	.506	.477	.461	.261	.506	.589	.461	.499	.331	.405	.214	.239	.392	1.000			
18	.304	.334	.292	.220	.312	.327	.229	.339	.396	.372	.287	.400	.234	.439	.207	.255	.375	1.000		
19	.481	.489	.389	.358	.518	.455	.191	.450	.536	.470	.474	.319	.374	.190	.267	.350	.478	.330	1.000	
20	.380	.374	.524	.496	.417	.377	.232	.454	.520	.438	.451	.347	.313	.187	.140	.348	.576	.350	.456	1.000

Table 2: Factor Loadings and Communalities Based on the Principle Components Analysis With Promax Rotation for 16 Items from Purpose in Life Scale (PIL) (N = 1367)

Items	Factors			Communalities
	Quality of Life	Meaning and Purpose	Freedom	
Item 2 Hayatım çok rutin / her zaman heyecan verici	.97	-.22	.03	.73
Item 5 Her günüm tamamen aynı/sürekli yeni ve farklı	.89	-.08	-.03	.66
Item 1 Ben genellikle çok sıkılıyorum /hayat dolu, coşkuluuyum	.85	-.02	-.08	.66
Item 6 Elimde olsaydı hiç doğmamış olmayı seçerdim / bu hayatımı aynısı gibi dokuz hayat daha isterdim	.68	.09	.01	.56
Item 9 Hayatım bomboş ve ümitsizlikle dolu /heyecan verici, güzel şeylerle dolu	.63	.25	.04	.70
Item 19 Günlük işlerimi yapmak, benim için zahmetli ve sıkıcı /zevкли ve tatmin edici	.59	.15	.03	.51
Item 10 Eğer bu gün ölecek olsaydım, tamamen boş bir hayat geçirdiğim hissine kapılırdım /yaşamaya değer bir hayat geçirdiğimi düşünürdüm	.59	.10	.15	.52
Item 4 Varolmamın hiçbir anlamı ve amacı yok /kesin bir anlamı ve amacı var	-.09	.90	-.12	.66
Item 20 Bence, hayatın hiçbir amacı yok /çok net bir amacı var	.02	.71	.08	.58
Item 3 Hayatta hiçbir hedefim yok /çok açık hedeflerim var	.11	.71	-.08	.58
Item 17 Hayatta bir anlam ve amaç bulma yeteneğimin hiç olmadığını düşünüyorum /çok iyi olduğunu düşünüyorum	.20	.61	.19	.61
Item 7 Şu an emekli olsaydım, hayatımın geri kalanını hiçbir şey yapmada geçirirdim /her zaman yapmayı istediğim heyecan verici şeyleri yapardım	-.26	.60	.19	.29
Item 11 Hayatımı düşündüğümde, sık sık neden var olduğumu merak ederim /her zaman varolmamda bir neden görürüm	.26	.57	-.10	.54
Item 16 İntihar etmeyi bir kurtuluş yolu olarak, ciddi bir şekilde düşündüm /hiçbir zaman aklımdan geçirmedi	.11	.50	-.01	.33
Item 14 Kendi seçimlerini yapma özgürlüğü husunda, insanın tamamen kalıtım ve çevrenin etkisi altında olduğuna inanıyorum /hayattaki bütün seçimlerini yapmada, tamamen özgür olduğuna inanıyorum	-.01	-.10	.89	.74
Item 18 Hayatımı ben değil, dışsal faktörler şekillendiriyor /dışsal faktörler değil, kendim şekillendiriyorum	.06	.14	.74	.69
eigenvalue	7.03	1.21	1.11	
% of variance	43.92	7.56	6.94	

Reliability of PIL

Two internal consistency estimates of reliability were computed for 16 items of Turkish version of PIL: a coefficient alpha and a split-half coefficient. We also calculated item total correlations for 16 items of the scale. Table 3 displays descriptive statistics (means, standart deviations) and item-total correlations of 16 items of the PIL scale. As seen in the Table 3, item total correlation coefficients of all items are in an acceptable level, ranging from .31 to .77.

Table 3: Descriptive Statistics and Item Total Correlations for 16 Items of the PIL Scale

Items	Mean	Standart Deviation	Corrected Item Total Correlations	Cronbach's Alpha If Item Deleted
1	4,65	1,81	.67	.91
2	4,35	1,84	.66	.91
3	5,78	1,45	.63	.91
4	5,97	1,57	.58	.91
5	4,29	1,77	.66	.91
6	4,28	2,04	.65	.91
7	5,71	1,72	.33	.91
9	4,71	1,61	.77	.91
10	4,43	1,90	.66	.91
11	4,95	2,10	.64	.91
14	4,40	1,96	.31	.92
16	5,71	1,73	.47	.91
17	5,29	1,49	.70	.91
18	4,86	1,74	.37	.91
19	4,45	1,79	.45	.91
20	5,38	1,59	.47	.91

We found a Cronbach's Alpha coefficient of .91, indicating quite satisfactory reliability. For the split-half coefficient, the scale was split into two equivalent halves after re-numbering the 16 items. One half included the items 1, 3, 5, 7, 9, 11, 13, and 15 and the other half included items 2, 4, 6, 8, 10, 12, 14, and 16 (see Appendix A for the Turkish Version of PIL and Appendix B for its factors). The result revealed a Spearman-Brown coefficient of .92, indicating very satisfactory split-half reliability.

A Cronbach's Alpha was also computed for each factor of the Turkish version of PIL scale. Coefficient alphas were .89 for the first factor (Quality of Life), and .82 for the second factor (Meaning and Purpose), indicating satisfactory reliability. A coefficient alpha of .61 was found for the third factor (Freedom), indicating moderate reliability.

Conclusion

This study examined the factorial structure and internal consistency of the Purpose in Life Scale in a sample of Turkish university students. The results demonstrated that the 16-item-Turkish version of PIL scale had three interpretable factors and good internal consistency.

Based on the results of exploratory factor analysis, four items (8, 12, 13, 15) of the original scale were excluded. One reason for eliminating these items was their psychometric inadequacies. These four items showed primary factor loadings below .4 and shared a factor loading above .3 with more than one factor. Other reason for the exclusion of these items was related to their confusing and abstract structure. For example, item 12 (*As I view the world in relation to my life, the world completely confuses me / fits meaningfully with my life*) seems unclear in terms of its meaning. This item was the one the participants frequently asked what it meant during data collection. Item 13 (*I am a very irresponsible person / very responsible person*) might also confusing. This item is originally designed to measure the personal responsibility or freedom to make choice. But this statement is to general to measure personal responsibility and it does not directly imply freedom to choose in Turkish culture. Item 15 (*With regard to death, I am prepared and unafraid / unprepared and scared*) which is related to fear of death contains two different statement: preparedness and fear. Such items may not be suitable for scales. For instance, one can feel prepared to death but still feel scared, or one can feel unprepared to death and does not feel scared. In addition, although fear of death variable can be related to

perceived purpose and meaning in life, directly asking the fear of death may not be a correct way in measurement instruments due to the fact that most of the individuals has the tendency to deny death unconsciously and to give socially desirable responses to such statements. Besides psychometric inadequacies, all these problems related to the content of items encouraged us to exclude item 8, 12, 13, and 15 from the scale. In the literature, PIL is criticized as being too awkward and bulky which makes its administration difficult for test takers (Harlow, Newcomb, & Bentler, 1987). Reducing items from 20 to 16 might make the administration of scale easier for test takers.

Remaining 16 items constituted the Turkish version of PIL scale. This scale contained three interpretable and meaningful factors or sub-scales. *The Quality of Life (Yaşam Kalitesi)* factor, which included the items 1, 2, 5, 6, 9, 10 and 19, refers to how an individual perceives or evaluates their life, whether it is exciting or routine, enthusiastic or boring, new or unchanged, prefer to have it or not prefer to have it, full or empty, satisfying or painful. Theoretically, this dimension, to some extent, reflects the Frankl's (2000) concept of existential vacuum which simply refers to boredom in which the individuals lose their interest in daily activities. This factor has also been extracted in most of the research in the literature with a few item difference and with different names (e.g. Shek, Hong and Cheung, 1987; Chamberlain and Zika, 1988; Halama, 2009). For instance, Halama (2009) named this factor as Excitement in Life which included items 1, 2, 5, 9, 12, 19 in his study while Shek, Hong and Cheung (1987) labeled it as Quality of Life which included the items 1, 2, 5, 6, 9, 18, and 19. In our study we preferred to retain the label Quality of Life.

Meaning and Purpose (Anlam ve Amaç) factor which consists of the items 3, 4, 7, 11, 16, 17 and 20 is relate to an individual's evaluation of life goals and aims as well as the meaning of existence as a whole. This factor has also been extracted in previous research. For instance, Shek, Hong and Cheung (1987) named this factor as Meaning of Existence which consisted of items 3, 4, 8, 10, 17 and 20. This finding is quite similar to our factor structure. Halama (2009) also extracted a similar factor and named it as Purpose and Goals which included items 3, 4, 7, 14, 15, 17, 18, 20. While the items 14 and 18, which measures the freedom to make choice and shape one's life, were included in Purpose and Goals factor in Halama's (2009) study, these two items were loaded on a separate factor in our study.

Freedom (Özgürlük) factor includes the items 14 and 18 and measures whether individuals shape their life with their free will or their life is determined by external forces. In other words, this factor is related to whether an individual has external locus of control or internal locus of control. Frankl (2000) argues that human has the freedom to make choice and to determine his fate even in the worst situations. For him, freedom, in this sense, makes the human life meaningful and purposeful.

With regard to factorial structure of PIL, there are different findings in the literature. Some studies (e.g. Croumbaugh and Maholick, 1969; Dale, 2003) reported one single dimension and the others (Shek, Hong and Cheung, 1987; Reker and Cousins, 1979; Halama, 2009) reported more than one factor changing from three to six dimensions. These differences in number of factors and in the items included in the factors might be attributable to the sample size, sample characteristics and cultural differences. For instance, Halama (2009) conducted his study with a sample of 168 Slovak university students which were not a large enough sample from the view of the criterion of 10 subjects for every item. Shek, Hong and Cheung's (1987) sample consisted of 480 Chinese post-secondary school students, which is relatively acceptable sample for factor analysis. Compared to these studies our sample of 1367 university students is quite satisfactory to produce accurate results.

Our reliability analysis showed that the Turkish version of PIL with 16 items was internally consistent. Cronbach's alpha of .91 found in this study is quite similar to or even higher than the alpha values ranging from .70 to .90 reported in the literature. Spearman-Brown coefficient of .92 computed for split-half reliability is also highly satisfactory and consistent with the findings of Crumbaugh and Maholick (1964) who reported a split-half reliability of .90.

Although one strength of our study is its larger sample size, the fact that our sample consisted of solely university students is one of its limitations. Future studies should analyze and confirm the psychometric properties of PIL with different samples in Turkish culture. In addition, in this study, only construct validity of the PIL was established. Future studies should also be conducted to further validate the scale.

In sum, Turkish version of Purpose in Life Scale with 16 items is reliable measurement tool which can be used in psychological research. The PIL scale is the most frequently used instrument to measure purpose and meaning in an existentialist sense worldwide and translated to many languages in different cultures. For that reason, this scale will allow the researchers to conduct cross cultural studies. The scale will particularly be a useful tool for the researchers interested in logotherapy and existential psychology.

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APPENDIX A

*Turkish Version of the Purpose in Life Scale (PIL)***1-Ben genellikle...**

1	2	3	4	5	6	7
çok sıkılırım					hayat dolu, coşkuluym	

2-Hayatım...

1	2	3	4	5	6	7
çok rutin					her zaman heyecan verici	

3-Hayatta...

1	2	3	4	5	6	7
hiç bir hedefim yok					çok açık hedeflerim var	

4-Varolmamın...

1	2	3	4	5	6	7
hiçbir anlamı ve amacı yok					kesinlikle bir anlamı ve amacı var	

5-Her günüm...

1	2	3	4	5	6	7
tamamenaynı					sürekli yeni ve farklı	

6-Elimde olsaydı...

1	2	3	4	5	6	7
hiç doğmamış olmayı seçerdim					bu hayatımın aynısı gibi dokuz hayat daha isterdim	

7- Şu anemekli olsaydım...

1	2	3	4	5	6	7
hayatımın geri kalanını hiçbir şey yapmadan geçirirdimşeyleri yapardım					her zaman yapmayı istediğim heyecan verici	

8- Hayatım...

1	2	3	4	5	6	7
bomboş ve ümitsizlikle dolu					heyecan verici, güzel şeylerle dolu	

9- Eğer bugün ölecek olsaydım...

1	2	3	4	5	6	7
tamamen boş bir hayat geçirdiğim hissine kapılırdım					yaşamaya değer bir hayat geçirdiğimi düşünürdüm	

10- Hayatımı düşündüğümde...

1	2	3	4	5	6	7
sık sık neden varolduğumu merak ederim					her zaman var olmamda bir neden görürüm	

11- Kendi seçimlerini yapma özgürlüğü hususunda, insanın...

1	2	3	4	5	6	7
tamamen, kalıtım ve çevresinin etkisi altında olduğuna inanıyorum					hayattaki bütün seçimlerini yapmada tamamen özgür olduğuna inanıyorum	

12- İntihar etmeyi...

1 2 3 4 5 6 7
bir kurtuluş yolu hiçbir zaman
olarak, ciddi bir aklımdan geçirmiyorum
şekilde düşündüğüm oluyor

13- Hayatta bir anlam ve amaç bulma yeteneğimin...

1 2 3 4 5 6 7
hiç olmadığını çok iyi olduğunu
düşünüyordumdüşünüyorum

14- Hayatımı...

1 2 3 4 5 6 7
ben değil, dışsal faktörler dışsal faktörler değil, kendim
şekillendiriyor şekillendiriyorum

15- Günlük işlerimi yapmak, benim için...

1 2 3 4 5 6 7
zahmetli ve sıkıcıdır zevkli ve tatmin edicidir

16- Bence, hayatın...

1 2 3 4 5 6 7
hiç bir amacı yok çok net bir amacı var

APPENDIX B*Factor Structure for Turkish Version of the Purpose in Life Scale (PIL) with new sequencing*

Factors	Items
Quality of Life	1, 2, 5, 6, 8, 9, 15
Meaning and Purpose	3, 4, 7, 10, 12, 13, 16
Freedom	11, 14