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ARAŞTIRMA MAKALE

Adaptation of the Gerotranscendence Scale into Turkish: Validity and Reliability Analysis[1]

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ABSTRACT

This study includes validity and reliability analyses for the Turkish adaptation of a scale developed to measure the concept of gerotranscendence in older adults. The scale was administered to older adults aged 60 and over who were free of mental and physical disabilities, literate, and leading active lives. The participants were selected through random sampling from older adults living in the Bakırköy and Esenyurt districts of Istanbul. In addition to a sociodemographic information form, the study used the "Heartland Forgiveness Scale," "Spiritual Transcendence Scale," "Successful Aging Scale," "Life Satisfaction Scale," "Psychological Well-Being Scale," and "San Diego Wisdom Scale." Data were analyzed using "SPSS 25" and "AMOS 21" software programs. Exploratory factor analysis was conducted with 130 participants, item and reliability analyses, along with confirmatory factor analysis, were performed with 210 participants, and test-retest reliability was examined with 20 participants. The participants' ages ranged from 60 to 90. The findings indicate that the Gerotranscendence Scale is a valid and reliable measurement tool in Turkish culture. This scale will contribute to a deeper understanding of the emotional, spiritual, and psychological experiences of older adults during the aging process and will facilitate the evaluation of old age as a period of positive development. Moreover, it will promote social awareness, support the development of healthier social policies and services for aging, and contribute to the creation of strategies aimed at improving the quality of life for older adults.

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Yaşlılıkta Aşkınlık (Gerotranscendence) Ölçeğinin Türkçeye Uyarlanması: Geçerlilik ve Güvenilirlik Analizi

ÖZET

Bu çalışma, yaşlılıkta aşkınlık (gerotranscendence) kavramını ölçmek amacıyla geliştirilen ölçeğin Türkçe standardizasyonuna yönelik geçerlik ve güvenirlik analizlerini içermektedir. Ölçek, 60 yaş üstü, zihinsel ve fiziksel engeli bulunmayan, okuryazar ve aktif yaşam sürdüren ileri yetişkin bireylere uygulanmıştır. Araştırmaya katılan gönüllüler, İstanbul'un Bakırköy ve Esenyurt ilçelerinde yaşayan ileri yetişkin bireyler arasından rassal örneklem yöntemiyle seçilmiştir. Çalışmada sosyo-demografik bilgi formuna ek olarak "Heartland Affedicilik Ölçeği", "Manevi Aşkınlık Ölçeği", "Başarılı Yaşlanma Ölçeği", "Yaşam Doyumu Ölçeği", "Psikolojik İyi Oluş Ölçeği" ve "San Diego Bilgelik Ölçeği" kullanılmıştır. Veriler "SPSS 25" ve "AMOS 21" programları aracılığıyla analiz edilmiştir. Araştırma kapsamında 130 katılımcı ile açımlayıcı faktör analizi, 210 katılımcı ile madde ve güvenirlik analizleri ile doğrulayıcı faktör analizi yapılmış, ayrıca 20 katılımcı ile test-tekrar test analizi uygulanarak ölçüm aracının zamana karşı tutarlılığı incelenmiştir. Katılımcıların yaşları 60 ile 90 arasında değişmektedir. Elde edilen bulgular, Yaşlılıkta Aşkınlık (Gerotranscendence) Ölçeğinin Türk kültüründe kullanılmak üzere geçerli ve güvenilir bir ölçme aracı olduğunu göstermektedir. Bu ölçek, yaşlı bireylerin yaşlanma sürecindeki duygusal, manevi ve psikolojik deneyimlerinin daha derinlemesine anlaşılmasına olanak tanıyacak ve aynı zamanda yaşlılık döneminin pozitif gelişim ve bireysel anlam arayışının güçlendiği bir süreç olarak değerlendirilmesine katkı sağlayacaktır. Böylece, toplumsal farkındalık oluşturulacak, yaşlılıkla ilgili daha sağlıklı sosyal politikalar ve destekleyici hizmetler geliştirilmesine önayak olacak ve yaşlı bireylerin yaşam kalitesini artırmaya yönelik yeni stratejilerin oluşturulmasına katkı sağlanacaktır.

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Yaşlılık,
Aşkınlık,
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1. INTRODUCTION

Old age represents the final stage of development, characterized by biopsychosocial changes and a reorganization of the search for meaning. Physically, risks such as muscle loss, osteoporosis and chronic illness increase; psychologically, attention, perception and memory decline; socially, loneliness rises and social networks shrink. Although meaning in life and personal values also transform—reflected in shifting goals and greater reflection on life's purpose—research has predominantly emphasized losses such as illness, loneliness and cognitive decline. However, old age involves both gains and losses and can be understood through concepts such as wisdom and spiritual transcendence. Erikson's (1984) notion of "successful aging" refers to older adults who evaluate their lives as a whole and derive satisfaction from them.

Sociogerontologist Lars Tornstam (1989) introduced the theory of *"gerotranscendence"* to explain positive developmental gains in later life. Gerotranscendence refers to an individual's reconciliation with the past, attainment of inner peace and development of a more transcendent perspective. During this process, altruism increases, relationships become more satisfying and the search for meaning deepens, accompanied by greater empathy, compassion and self-acceptance.

In defining the ninth stage of development, Erikson employs the concept of gerotranscendence to describe the characteristics of this period. The elderly individual's capacity to experience this transcendence depends on their ability to integrate positive and negative life experiences and to develop effective coping skills for later-life challenges.

The term *"gerotranscendence"* describes changes in individuals' thought structures during the aging process and has no exact equivalent in Turkish. Etymologically, it combines "gero," meaning aging, and "transcendence," meaning transcending boundaries, referring to a shift toward spiritual values. The concept, often regarded as metaphysical, is commonly translated as "transcending old age." According to Tornstam's (1996) model, gerotranscendence consists of three dimensions: self-transcendence, the individual's acceptance of themselves through a comprehensive evaluation of their past; social and interpersonal transcendence, the reinterpretation of relationships and loneliness in line with changing social roles; and cosmic transcendence, perceiving oneself as part of a universal whole and internalizing this perspective.

Within this framework, loneliness in old age is not viewed as purely negative but as a functional process that enables inward reflection and distancing from negative experiences. Cumming and Henry's (1961) *"Withdrawal Theory"* and Tornstam's (1989) *"Gerotranscendence Theory"* conceptualize loneliness differently. While withdrawal theory interprets loneliness as a negative outcome of reduced social participation, gerotranscendence theory suggests that life satisfaction and happiness can be maintained despite social and psychological withdrawal. Thus, similar experiences of loneliness may be perceived differently depending on how individuals interpret their life events. Individuals who achieve gerotranscendence intentionally distance themselves from societal expectations, stress and ambitions; this withdrawal reflects personal choice rather than inadequacy.

Accepting life as a whole, minimizing stress and ambition, and recognizing death as a natural part of life correspond to what Erikson defines as *"successful aging."* Tornstam (1989) argues that high life satisfaction in later life is achieved through transcendence—the highest level of human development while also emphasizing the influence of cultural norms. In Western cultures, aging individuals may be perceived as abnormal or asocial, whereas in Eastern cultures old age is respected due to the value placed on experience and wisdom. Confucian thought, which emphasizes the meaning of life, the redefinition of the universe and the transcendence of time and space, reflects a worldview similar to gerotranscendence and may facilitate older adults' access to this developmental state.

The concept of elderly transcendence holds significant importance in preventive mental health, enabling individuals to maintain healthier and more satisfying lives. Research on aging and stigmatization has shown that social support enhances well-being by reducing depressive mood among individuals over the age of 65. Studies examining successful aging have similarly demonstrated that active participation in social and educational activities is associated with higher successful aging scores and more positive attitudes toward aging. Moreover, an active lifestyle has been found to improve life quality

and reduce depression, while increases in perceived social support are linked to improvements in social health. Other findings indicate that loneliness can be prevented through socialization and a healthy aging perspective, and that positive attitudes toward aging are significantly related to successful aging and psychological resilience.

Studies conducted between 2020 and 2024 suggest that aging involves both negative experiences—such as stigmatization, depressive processes and loneliness—and positive outcomes, including life satisfaction and well-being supported by social relationships and healthy aging practices. Within this framework, the concept of *"gerotranscendence"* which encompasses life satisfaction, holistic life evaluation and a turn toward spirituality, can be considered a step beyond the notion of "successful aging." When working with older adults, the use of the gerotranscendence concept is essential for understanding spiritual functioning and evaluating its impact on quality of life and mental health. The standardization of a measurement scale is therefore crucial for improving conceptual understanding and supporting the healthy participation of older adults in society. This need is particularly evident in Turkey, where research on advanced adulthood remains limited and no validated measurement tool for gerotranscendence currently exists.

In line with the purpose of this study, the original scale was translated into Turkish and administered to two separate samples. Item analysis was first conducted on the collected data. To establish construct validity, exploratory and confirmatory factor analyses were performed, while reliability was assessed through internal consistency analysis. Correlation analyses were also conducted to examine relationships between the scale and related constructs, including the Successful Aging Scale (SAS), Satisfaction with Life Scale, Heartland Forgiveness Scale, Spiritual Transcendence Scale, Psychological Well-Being Scale and San Diego Wisdom Scale.

These scales were selected because the constructs of forgiveness, spiritual transcendence, psychological well-being, life satisfaction and wisdom are frequently associated with successful aging in the literature. The standardization of the Gerotranscendence in Aging Scale is considered valuable, as it provides a reliable criterion for evaluating positive developmental outcomes in later life and contributes detailed validity and reliability evidence to the field.

2. METHOD

2.1. Translation Study

The Gerotranscendence Scale was translated using the back-translation procedure proposed by Brislin, Lonner, and Thorndike (1973). The initial English–Turkish translation was conducted with the support of a qualified language expert and subsequently reviewed by field specialists. The scale was evaluated in terms of clarity, comprehensibility, linguistic structure and cultural appropriateness, and necessary revisions were made. Based on expert feedback, the translated version was deemed suitable for use in the study.

2.2. Participants

The adaptation study of the Gerotranscendence Scale into Turkish was conducted with individuals aged 60 years and over, defined as advanced adults according to Santrock (2017). Participants were required to be literate, actively engaged in daily life and free from severe biopsychosocial disabilities. After obtaining permission from the scale developer, data were collected in Istanbul using a simple random sampling method. For Exploratory Factor Analysis (EFA), data were obtained from 130 participants, and for Confirmatory Factor Analysis (CFA), data were collected from 210 participants. The EFA sample consisted of participants aged 60–90 years, including 74 women (56.9%) and 56 men (43.1%). More than half of the participants held a bachelor's degree or higher, and the majority were married and had children. The CFA sample included 210 participants aged between 60 and 90 years, of whom 118 were female (56.2%) and 92 were male (43.8%).

2.3. Data Collection Tools

In addition to a demographic information form, the following instruments were administered: the Heartland Forgiveness Scale, Spiritual Transcendence Scale, Successful Aging Scale, Life Satisfaction Scale, San Diego Wisdom Scale, Psychological Well-Being Scale and the Gerotranscendence Scale. Data were collected using snowball sampling. Participants were given informed consent before the study began. Approval for the research was obtained from the Haliç University Ethics Committee on

31/10/2023 with approval number 230 and the necessary institutional permissions have been secured.

2.4. Gerotranscendence Scale

The Gerotranscendence Scale Type 1 (GST1) was developed by Tornstam (1994) and demonstrated a two-factor structure consisting of Ego Transcendence and Cosmic Transcendence. Later, Tornstam (1997) developed the Gerotranscendence Scale Type 2 (GST2), which included the dimensions of Cosmic Transcendence, Coherence and Loneliness. These dimensions respectively reflect transcendence beyond objects, space and time; ego integration; and the reinterpretation of relationships and social connectedness in later life. The Polish standardization study of the Gerotranscendence Scale Type-2 (GST2) was conducted by Brudek (2021), who reduced the original 24-item structure to 10 items while preserving the three sub-dimensions. In the present study, the Gerotranscendence Scale consists of 24 items rated on a 4-point Likert scale and measures three sub-dimensions: cosmic transcendence, coherence and loneliness. Several items are reverse scored (6th and 9th) Previous studies reported Cronbach's alpha coefficients of .73 for the Cosmic dimension, .57 for Coherence and .60 for Loneliness.

2.5. Successful Aging Scale

The Successful Aging Scale (SAS) was developed by Reker (1984) and adapted into Turkish by Özsungur and Hazer (2017). A 7-point Likert scale was used. The scale includes two sub-dimensions: struggling with problems and healthy lifestyle. Reported reliability coefficients are high, and the Cronbach's alpha coefficient in the present study was .87. The Cronbach's alpha value of the original scale is .85.

2.6. Heartland Forgiveness Scale

The Heartland Forgiveness Scale, developed by Thompson (2005), consists of 18 items rated on a 7 point Likert scale and includes three sub-dimensions: self-forgiveness, forgiveness of others and forgiveness of situations. The Turkish adaptation was conducted by Bugay and Demir (2010). The reliability coefficient in the present study was .69. The Cronbach's alpha value of the original scale is .86.

2.7. Spiritual Transcendence Scale

The Spiritual Transcendence Scale was developed by Piedmont (1999) and adapted into Turkish by Ekşi, Ekşi and İme (2019). The scale consists of 24 items and three sub-dimensions: universality, worship satisfaction and connectedness. The reliability coefficient in the present study was .94. The Cronbach's alpha value of the original scale is .84.

2.8. Psychological Well-Being Scale

The short form of the Psychological Well-Being Scale developed by Ryff (1989) and adapted into Turkish by İmamoğlu (2004) was used. The scale includes 18 items rated on a 5-point Likert scale. The reliability coefficient in this study was .78. The Cronbach's alpha value of the original scale is .89.

2.9. Life Satisfaction Scale

The Life Satisfaction Scale developed by Diener et al. (1985) consists of five items rated on a 7-point Likert scale. The Turkish adaptation was conducted by Dağlı and Baysal (2016). The reliability coefficient in the present study was .82. The Cronbach's alpha value of the original scale is .89.

2.10. San Diego Wisdom Scale

The San Diego Wisdom Scale was developed by Thomas et al. (2019) and adapted into Turkish by Akfırat and Akkaya (2019). The scale consists of six sub-dimensions and 24 items. A 4-point Likert scale was used. The reliability coefficient in the present study was .77. The Cronbach's alpha value of the original scale is .72.

2.11. Data Analysis and Processing

Statistical analyses were conducted using SPSS 25 and AMOS 21 software. Descriptive statistics, including frequency, percentage, mean and standard deviation, were calculated. Item analysis, reliability analysis and Exploratory Factor Analysis (EFA) were performed using SPSS, while Confirmatory Factor Analysis (CFA) was conducted using AMOS. Reliability was assessed using Cronbach's alpha coefficients and test–retest analysis. Construct validity was examined through EFA, followed by CFA to test model fit. External criterion validity was evaluated using correlation analyses with related scales. Data were collected through both face-to-face and online survey methods. Participation was voluntary, informed consent was obtained from all participants and each data collection session lasted approximately 45 minutes.

2.12. Procedure

In this study, the Gerotranscendence Scale was adapted into Turkish using a standardized method. The research was conducted with a total of 210 older adults aged 60 and older living in Istanbul; data for Exploratory Factor Analysis (EFA) were collected from 130 participants, and data for Confirmatory Factor Analysis (CFA) were collected from 210 participants. In addition to a demographic information form, the data collection process utilized scales measuring gerotranscendence, successful aging, forgiveness, spiritual transcendence, psychological well-being, life satisfaction, and wisdom. Validity and reliability analyses of the scale were conducted using SPSS and AMOS software; construct validity was assessed via AFA and DFA, while criterion validity was evaluated through correlation analyses with related scales. Data were collected from volunteer participants using both face-to-face and online methods.

3. RESULTS

First, exploratory factor analysis was performed with a group of 130 people, while confirmatory factor analysis, reliability analysis, criterion validity, and item analysis were performed with another group of 210 people. A 'test-retest' analysis was conducted with 20 people to test consistency and change. The factor structure was determined using the principal component technique. The suitability of the data for factor analysis was determined using the Bartlett test, while the suitability of the sample was determined using the Kaiser-Meyer-Olkin (KMO) test. The discriminant validity of the items on the scale was determined by conducting item analysis.

3.1. Item Analysis

Construct validity is evaluated through the implementation of Exploratory Factor Analysis (EFA), but before this analysis, missing, erroneous or outlier values, if any, were checked for the applicability of the data set for factor analysis and normality assumptions were examined. Item analysis was used to identify the ability of the scale items to represent the entire scale and to determine their discrimination. When the item was removed from the scale, the changes in the mean, variance and Cronbach Alpha coefficient of the scale were examined together with the item-total correlation and the findings of the analyses are given in *Table 1*.

The results of independent sample t-tests are presented, showing the discrimination power of all items. It is accepted that items exhibiting an item-total correlation of .30 or above have good discrimination and are sufficient. A large number of items were observed below this value, and since the reliabilities were below 0.50, the reliability of the scale was found to be low and it was observed that it was not reliable in terms of dimensions Correlations between the items and the total scale scores ranged between .56 and .74, indicating that the items are sufficiently consistent with the overall scale.

To determine the level of discrimination displayed by the scale items, the raw scores for each factor were arranged in ascending order. An independent samples t-test was then used to compare the mean scores of the bottom 27% and the top 27% groups. Following the comparison, a significant difference was identified at the $p < 0.05$ level between average item scores of the upper and lower groups for each sub-dimension, with the exception of items 5, 6, 7, 8, 9, 13, 18 and 19.

3.2. Exploratory Factor Analysis (EFA)

Exploratory factor analysis findings of the Gerotranscendence Scale are given in Table 2.

Principal component analysis with Varimax rotation was used to explore the Gerotranscendence Scale's factor structure, revealing three sub-dimensions: Loneliness, Coherence, and Cosmic. Bartlett's sphericity test ($\chi 2(45) = 368.161$, $p < 0.001$) confirmed the data's suitability for factor analysis, and the Kaiser-Meyer-Olkin (KMO) value was 0.67. The factor loadings were between 0.660 and 0.798, all above the acceptable threshold of 0.50.

Several items were removed from the scale due to low factor loadings or overlap with other items. Specifically, the 5th to 10th items in the Cosmic Dimension (such as "I am afraid of death," "I can feel the strong presence of people in other places," and "I am interested in space research"), items 11, 13, and 15 from the Coherence Dimension (e.g., "My life is consistent and meaningful," "I take myself too seriously," and "I find it easy to laugh at myself"), and items 17, 18, 19, 23, and 24 from the Loneliness Dimension (e.g., "I like meeting new people," "I am often afraid of asking stupid questions," and "Having high material standards for me is among the most important things in my life right now") were all

removed due to their low factor loadings or relevance to the dimensions.

Table 1. Item analysis results of the subscales of the transcendence in aging scale for participants

Substances	Item Total Correlation	t (top % 27-down % 27)**	AVG.	Sd.	Scale Mean When the Item is Output	Scale Variance When Item is Extracted	Cronbach's Alpha Coefficient of the Scale When The İtem is Extracted
Gerotranscendence (α=0,466)							
Cosmic (α=0,458)							
1	0,457	6,175***	2,99	0,80	24,39	10,04	0,342
2	0,364	8,382***	2,70	0,86	24,67	10,24	0,368
3	0,437	8,267***	2,88	0,77	24,50	10,22	0,352
4	0,506	9,819***	2,87	0,82	24,50	9,73	0,321
5	-0,121	0,262	2,32	1,00	25,05	12,85	0,545
6	0,066	0,540	2,80	0,82	24,58	11,94	0,470
7	-0,276	-0,090	2,54	0,98	24,83	14,05	0,592
8	0,194	0,000	2,73	0,89	24,64	11,05	0,429
9	0,319	0,485	2,72	0,88	24,65	10,41	0,384
10	0,212	2,313***	2,82	0,89	24,55	10,95	0,422
Consistency (α=0,311)							
11	0,062	5,598***	3,09	0,71	13,33	5,30	0,319
12	0,366	6,262***	2,87	0,87	13,54	3,98	0,089
13	0,066	-0,428	2,37	0,85	14,05	5,02	0,324
14	0,309	3,432***	2,48	0,95	13,93	3,94	0,124
15	-0,183	3,146***	2,91	0,77	13,50	6,11	0,461
16	0,230	5,011***	2,70	0,98	13,72	4,12	0,193
Loneliness (α=0,145)							
17	-0,187	-3,678***	1,91	0,77	18,80	6,63	0,276
18	-0,084	-0,902	2,50	0,91	18,21	6,03	0,232
19	0,006	0,423	2,29	0,82	18,42	5,79	0,161
20	0,126	4,977***	2,99	0,77	17,72	5,44	0,080
21	0,211	5,614***	2,96	0,83	17,75	5,02	0,010
22	0,184	6,008***	3,02	0,78	17,69	5,23	0,038
23	0,160	3,415***	2,58	0,95	18,13	4,91	0,036
24	0,044	2,789***	2,47	0,89	18,24	5,51	0,135

n = 210, ** $n_1 = n_2 = 57$, *** $p < 0,05$ accepted.

After these deletions, the scale was reduced to 10 items. The factors explained 56.818% of the total variance, with the Cosmic dimension accounting for 23.316%, the Loneliness dimension for 17.093%, and the Coherence dimension for 16.409%. This structure confirmed the original three-factor model of the Gerotranscendence Scale. The final items under each dimension were renumbered for clarity: items 1–4 for Cosmic, 5–7 for Coherence, and 8–10 for Loneliness.

In comparison, Brudek's (2021) adaptation of the Gerotranscendence Scale also reduced the scale from 24 to 10 items while retaining the same three sub-dimensions. Although the number of items and sub-dimensions were consistent across both studies, the specific items in each sub-dimension differed, which may be attributed to

cultural differences between countries. The study suggests that while the core structure of gerotranscendence remains the same, the specific expressions of this concept can vary across cultures.

Table 2. Exploratory Factor Analysis Results for the Gerotranscendence

Substances	Factors		
	Cosmic	Loneliness	Consistency
I feel that I am a part of everything alive.	0,777		
I feel connected with the entire universe.	0,771		
Knowing that life on earth will continue is more important than my individual life.	0,765		
I feel a strong connection with earlier generations.	0,660		
Being at peace and philosophizing by myself is important for my well- being.		0,798	
I find it easy to see what's right and wrong in other people's behavior.		0,712	
I find it easy to give other people good advice.		0,703	
My personality has both female and male components.			0,776
To be honest, I must say that I am the most important thing in the world.			0,730
My life feels chaotic and disrupted.			0,665
Variance Explained (%) (56,818)	23,316	17,093	16,409
Self value (Λ)	2,506	1,673	1,503

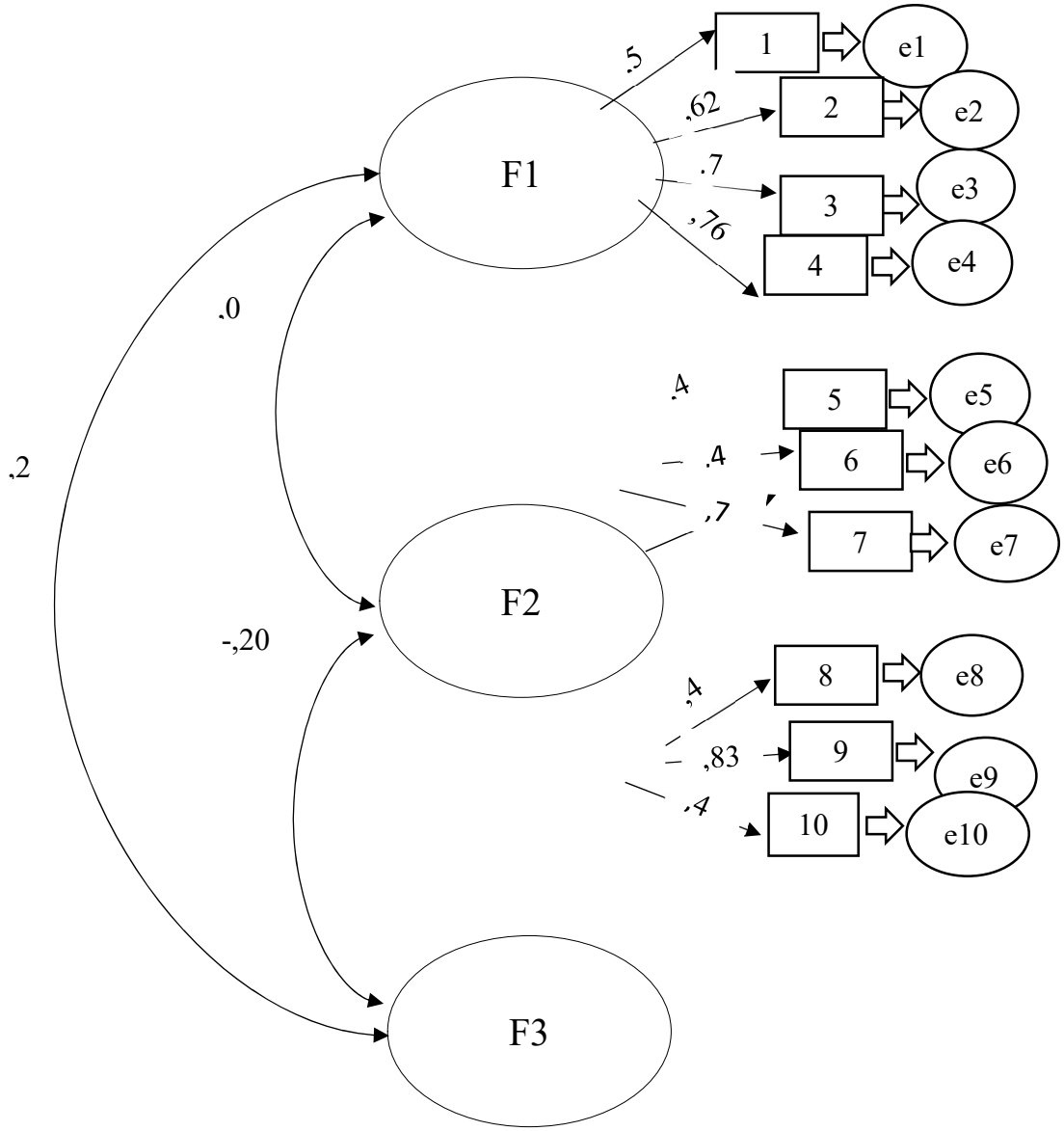
KMO =0,673; $\chi 2(45)$ =368,161
Bartlett's Test of Sphericity (p) = 0,000

3.3. Confirmatory Factor Analysis (CFA)

Looking at the findings of the confirmatory factor analysis, the SRMR value was calculated as 0.065, the RMSEA value as 0.068, the GFI value as 0.946 and the CFI value as 0.919. The resulting fit index values indicate that the model has a good fit. Confirmation of the structure was provided by a confirmatory factor analysis of data collected from the second group. Based to the confirmatory factor analysis, the structural equation model (SEM) result of the scale was found to be significant at the level of p=0.000. This finding indicates that the 10 items and 3 sub-dimensions that comprise the scale are associated with the scale structure. This information is provided in Table 3.

Table 3. Goodness of fit values of the structural model of gerotranscendence scale

Compliance Statistics	Values of The Structural Model	Reference Range Schermelleh-Engel, Karin et al. (2003)
CMIN/df	1,832	≤5
RMSEA	0,063	≤0,08
GFI	0,946	≥0,80
CFI	0,919	≥0,80
IFI	0,923	≥0,80
NFI	0,844	≥0,80
SRMR	0,065	≤0,10



F1: Cosmic, F2: Consistency, F3: Loneliness

Figure 1. Model for the first-order multifactor confirmatory factor analysis of the gerotranscendence scale

3.4. Reliability Analysis

Cronbach Alpha method is a reliability method that is utilised for the purpose of measuring the internal consistency of a test. It was observed that the cosmic dimension had a credibility coefficient of .74, the consistency dimension had a credibility coefficient of .56, and the loneliness sub-dimension had a reliability coefficient of .60. Stratified alpha and omega coefficients are two different methods of determining internal consistency in cases where the scales are multidimensional. The stratified alpha factor was found to be .61.

3.5. Test-Retest

The test-retest method is a method that measures the stability level of the measurement tool. The test retest correlation analysis results of the Gerotranscendence Scale conducted with 20 people at 20-day intervals are given in Table 4. The cosmic showed statistically significant and strong correlations ($p<0.05$, $r=0.971$) among the tests, the consistency showed statistically significant and strong correlations ($p<0.05$, $r=0.650$) among the tests, and the loneliness dimension showed statistically significant and strong correlations ($p<0.05$, $r=0.854$) among the tests. A statistically significant and strong

relationship (p<0.05, r=0.744) relationship was found between Gerotranscendence Scale and the tests. This information is provided in Table 4.

Table 4. Gerotranscendence scale test-retest correlation analysis results

Scale and Dimension	Cosmic	Consistency	Loneliness	Gerotranscendence
Cosmic	.971**			
Consistency		.650**		
Loneliness			.854**	
Gerotranscendence				.744**

** p<0.05

3.6. Relationship Between Structures

The Successful Aging Scale, Heartland Forgiveness Scale, Spiritual Transcendence Scale, Life Satisfaction Scale, San Diego Wisdom Scale, and Psychological Well-Being Scale were administered alongside the Gerotranscendence Scale, and correlation analysis was conducted to examine their relationships.

3.6.1. Successful Aging Scale

Gerotranscendence Scale and healthy aging (p<0.05, r=-0.257), coping with problems (p<0.05, r=-0.413), and successful aging (p<0.05, r=-0.387); cosmic subscale and successful aging (r=-0.310, p<0.05), coping with problems (p<0.05, r=-0.186); consistency subscale and coping with problems (p<0.05, r=-0.137); loneliness subscale and successful aging (p<0.05, r=-0.269), healthy aging (p<0.05, r=-0.215) coping with problems (p<0.05, r=-0.268). This information is provided in Table 5.

Table 5. Correlation analysis results between gerotranscendence scale and successful aging scale (SAS)

Scale and Dimensions	Cosmic		Consistency		Loneliness		Gerotranscendence	
	r	p	r	p	r	p	r	p
Healthy Aging	**-0,186**	**0,007**	-0,076	0,270	**-0,215**	**0,002**	**-0,257**	**0,000**
Tackling Problems	**-0,342**	**0,000**	**-0,137**	**0,048**	**-0,268**	**0,000**	**-0,413**	**0,000**
Successful Aging	**-0,310**	**0,000**	-0,125	0,071	**-0,269**	**0,000**	**-0,387**	**0,000**

3.6.2. Spiritual Transcendence Scale

Consistency and universality (p<0.05, r=0.228), worship satisfaction (p<0.05, r=0.142), commitment (p<0.05, r=0.394), spiritual transcendence (p<0.05, r=0.262), and a statistically significant and positive relationship between the Gerotranscendence Scale and commitment (p < 0.05, r = 0.167). This information is presented in Table 6.

Table 6. Correlation analysis results between gerotranscendence scale and spiritual transcendence scale

Scale and Dimensions	Cosmic		Consistency		Loneliness		Gerotranscendence	
	r	p	r	p	r	p	r	p
Universality	-0,079	0,254	**0,228**	**0,001**	0,029	0,678	0,084	0,223
Worship Satisfaction	-0,072	0,299	**0,142**	**0,040**	-0,041	0,554	0,011	0,872
Connectivity	-0,079	0,256	**0,394**	**0,000**	0,017	0,807	**0,167**	**0,015**
Spiritual Transcendence	-0,084	0,227	**0,262**	**0,000**	0,001	0,990	0,087	0,210

3.6.3. Psychological Well-Being Scale

Table 7. Correlation analysis results between gerotranscendence scale and psychological well-being scale

Scale and Dimensions	Cosmic		Consistency		Loneliness		Gerotranscen-dence	
	r	p	r	p	r	p	r	p
Self-Acceptance	0,131	0,058	**0,249**	**0,000**	**0,304**	**0,000**	**0,355**	**0,000**
Personal Development	**0,187**	**0,006**	**0,223**	**0,001**	**0,258**	**0,000**	**0,356**	**0,000**
Life Purpose	-0,059	0,393	**0,256**	**0,000**	0,125	0,070	**0,156**	**0,024**
Positive Relations with Others	0,031	0,658	**0,415**	**0,000**	0,062	0,368	**0,269**	**0,000**
Environmental Dominance	0,092	0,184	**0,266**	**0,000**	**0,220**	**0,001**	**0,301**	**0,000**
Autonomy	0,032	0,645	**0,144**	**0,037**	**0,155**	**0,025**	**0,168**	**0,015**
Psychological Well-Being	0,099	0,154	**0,386**	**0,000**	**0,265**	**0,000**	**0,389**	**0,000**

Cosmic transcendence, a subscale of the Gerotranscendence scale, was positively correlated with life satisfaction, a subscale of the Psychological Well-Being scale ($p<0.05$, $r=0.162$), consistency and self-acceptance ($p<0.05$, $r=0.249$), personal growth ($p<0.05$, $r=0.223$), life purpose ($p<0.05$, $r=0.256$), positive relationships with others ($p<0.05$, $r=0.415$), environmental mastery ($p<0.05$, $r=0.266$), consistency and autonomy ($p<0.05$, $r=0.144$), psychological well-being scale ($p<0.05$, $r=0.144$). 05), environmental mastery ($p<0.05$, $r=0.266$), autonomy ($p<0.05$, $r=0.144$), psychological well-being scale ($p<0.05$, $r=0.386$); between loneliness and self-acceptance ($p<0.05$, $r=0.304$), between individual development ($p<0.05$, $r=0.258$), between environmental mastery ($p<0.05$, $r=0.220$), autonomy ($p<0.05$, $r=0.155$), psychological well-being scale ($p<0.05$, $r=0.265$); gerotranscendence scale and self acceptance ($p<0.05$, $r=0.355$), individual development ($p<0.05$, $r=0.356$), life purpose ($p<0.05$, $r=0.156$), positive relationships with others ($p<0.05$, $r=0.156$), positive connections with others ($p<0.05$, $r=0.269$), environmental mastery ($p<0.05$, $r=0.301$), autonomy ($p<0.05$, $r=0.168$), and psychological well-being scale ($p<0.05$, $r=0.389$). This information is presented in Table 7.

3.6.4. Life Satisfaction Scale

Table 8. Correlation analysis results between gerotranscendence scale and satisfaction with life scale (SWLS)

Scale and Dimensions	Cosmic		Consistency		Loneliness		Gerotranscendence	
	r	p	r	p	r	p	r	p
Satisfaction with Life	**0,162**	**0,019**	**0,215**	**0,002**	**0,176**	**0,011**	**0,298**	**0,000**

Between cosmic transcendence as a sub-dimension of the gerotranscendence scale and the Satisfaction with Life Scale ($p<0.05$, $r=0.162$), between the consistency sub-dimension and the Satisfaction with Life Scale ($p<0.05$, $r=0.215$), There is a statistically essential and positive relationship between the loneliness sub-dimension and the Satisfaction with Life Scale ($p<0.05$, $r=0.176$) and finally between the gerotranscendence scale and the satisfaction with life scale ($p<0.05$, $r=0.298$). This information is provided in Table 8.

3.6.5. San Diego Wisdom Scale

Table 9. Correlation analysis results between gerotranscendence scale and San Diego wisdom scale (SDWS)

Scale and Dimensions	Cosmic		Consistency		Loneliness		Gerotranscendence	
	r	p	r	p	r	p	r	p
Social Counseling	0,071	0,305	0,069	0,316	**0,262**	**0,000**	**0,202**	**0,003**
Stability	0,022	0,749	**0,252**	**0,000**	0,129	0,062	**0,208**	**0,002**
Positive Social Behavior	-0,031	0,659	**0,334**	**0,000**	0,128	0,064	**0,217**	**0,002**
Emotional Regulation	0,125	0,070	**0,139**	**0,045**	-0,042	0,547	0,134	0,053
Tolerance To Different Values	0,076	0,270	0,014	0,841	**0,171**	**0,013**	0,135	0,051
Insight	0,080	0,249	**0,193**	**0,005**	0,113	0,103	**0,205**	**0,003**
San Diego Wisdom	0,091	0,190	**0,257**	**0,000**	**0,197**	**0,004**	**0,285**	**0,000**

($p<0.05$, $r=0.252$) consistency with stability sub-dimension ($p<0.05$, $r=0.252$), positive social behavior ($p<0.05$, $r=0.334$), emotional regulation ($p<0.05$, $r=0.334$), 139, $p<0.05$), insight ($p<0.05$, $r=0.193$), wisdom scale ($p<0.05$, $r=0.257$); between loneliness and social counseling ($p<0.05$, $r=0.262$), tolerance of different values ($p<0.05$, $r=0.171$), wisdom ($p<0.05$, $r=0.197$); gerotranscendence scale and social counseling ($p<0.05$, $r=0.202$), stability ($p<0.05$, $r=0.208$), positive social behavior ($p<0.05$, $r=0.217$), insight ($p<0.05$, $r=0.205$), and wisdom ($p<0.05$, $r=0.285$). This information is presented in Table 9.

3.6.6. Heartland Forgiveness Scale

Table 10. Correlation analysis results between gerotranscendence scale and heartland forgiveness scale

Scale and Dimensions	Cosmic		Consistency		Loneliness		Gerotranscendence	
	r	p	r	p	r	p	r	p
Self-Forgiveness	0,040	0,564	**0,216**	**0,002**	0,073	0,295	**0,174**	**0,012**
Forgive Others	0,087	0,209	0,093	0,180	0,079	0,253	**0,141**	**0,041**
Forgive The Situation	0,120	0,084	**0,214**	**0,002**	0,080	0,247	**0,226**	**0,001**
Heartlands Forgiveness Scale	0,108	0,118	**0,220**	**0,001**	0,101	0,144	**0,232**	**0,001**

($p<0.05$, $r=0.216$) between the consistency subscale and self-forgiveness, ($p<0.05$, $r=0.214$) between forgiving the situation, ($p<0.05$, $r=0.220$) between the forgiveness scale, ($p<0.05$, $r=0.174$), gerotranscendence and forgiving others ($p<0.05$, $r=0.141$), forgiving the situation ($p<0.05$, $r=0.226$), and forgiveness ($p<0.05$, $r=0.232$). This information is presented in Table 10.

4. DISCUSSION

Recently, the increasing elderly population has brought aging-related concepts to the forefront. Aging is no longer seen only as disease, dependency, or reduced activity, but also as a stage involving wisdom, spiritual capacities, experience, and new social roles. These roles and accumulated knowledge contribute to a sense of wholeness in later life and highlight that development is a lifelong and dynamic process.

In order for the elderly population to participate in society in a healthy and acceptable manner, it is very important to understand the concept of gerotranscendence, which means the ability of older adults to live a deeper and more meaningful life wisely, and is translated as *"the transcendence of older adults."* The need to explain the concept of gerotranscendence with a concrete measurement tool is evident in the literature, where there is no standard measurement tool to evaluate this concept. The fact that this concept expresses the wisdom

necessary for successful aging and more, and the scarcity of studies on old age in Turkey, highlights the importance of standardizing the scale. To this end, a study was conducted to adapt the Gerotranscendence Scale into Turkish. The study also aimed to analyze the reliability and applicability of the adapted scale. In this context, initially, the translation process of the scale was carried out to evaluate whether it provided linguistic equivalence. Then, applicability and reliability analyses of the scale were performed with the data collected from two samples. While internal consistency analysis was used for reliability, content and construct validity were examined for validity. In the examination of the scales psychometric qualities, exploratory factor analysis and item analysis were performed on the data obtained from the initial sample. The consistency of the items with the whole scale was established and it was determined that the scale had a three-factor structure as in its initial form. Then, confirmatory factor analysis confirmed the three-factor structure of the scale consisting of Cosmic Transcendence, Coherence and Loneliness sub-factors, as in the initial version of the scale and in the exploratory factor analysis executed with the data achieved from the first sample.

To examine the associations between the scale and other constructs, six other measures were used, measuring the constructs of life satisfaction, successful ageing, forgiveness, spiritual transcendence, psychological well-being and wisdom. Analysing the relationships established with similar scales, the levels of forgiveness, life satisfaction, psychological well-being and wisdom increase with the increase in gerotranscendence. The reason for the inverse relationship between successful ageing and gerotranscendence is that the two scales address different sub-dimensions of ageing. Successful ageing includes three sub-dimensions: healthy lifestyle, commitment to life and striving to overcome a problem. These dimensions include statements such as being physically active, socially adapted to the environment and engaged in activities and occupations. Gerotranscendence, on the other hand, has attempted to define old age in terms of other dimensions, such as cosmic, loneliness and coherence, and the ability to remain independent, isolation and spiritual experiences in order to achieve a sense of integrity with the world. The position of old age in these two scales describes characteristics in opposite directions.

The findings of the reliability analysis conducted with the data obtained from both samples show that the sub-factors of the scale have an acceptable level of reliability. The test-retest analysis also found that the scale measured the same thing at different times. The findings obtained from all these analyses can be evaluated as evidence for the applicability and reliability of the Gerotranscendence Scale, which overlaps with the original scale and whose three-factor structure was confirmed. The results obtained are at close levels when compared to the reliability results obtained in the author's Tornstam (1994) study and the results in the Poland (2021) sample. In Brudek's (2021) study, the highest reliability factor was for the cosmic sub-dimension, as in this study. This was followed by the loneliness and consistency sub-dimensions. The values in the original version of the scale also ranged between .64 and .74. In the Poland sample, it ranged between .42 and .69. There may be some reasons for the low reliability coefficients of both the general and sub-dimensions of the scale. Both the theory itself and the items in its content refer mostly to the assumptions of Eastern philosophy. The Zen-Buddhist metaphor, the different perception of temporality, integration with the universe and philosophical depth issues may not reflect Turkish culture in the majority. Many of the questions may not have been understood correctly due to this cultural difference. The economic situation of the elderly in Turkey and the social expectations towards this social group are significantly different from Scandinavian countries or the USA. It can be thought that the reliability levels of this scale adapted to Turkish culture remain in a relatively low range due to these impasses.

Recent studies on old age evaluate old age together with sociology, health and religious sciences. When we look at the fields of study, old age appears as a concept that needs social support and service and is evaluated together with the problems of illness and recovery. Defining old age as *"gerotranscendence"* (elderly transcendence) with a perspective beyond evaluating it as a social problem or a diseased period is an approach that includes the importance of evaluating this period together with the field of mental health and is an approach that should be included in the literature.

In old age, preventive mental health is of great importance for individuals to live a healthy and

good life. In particular, the concept of gerotranscendence plays an important role when working with the elderly to assess mental health and quality of life. When similar scales used in this study and current studies on elderly transcendence are examined in the literature, the relationship between quality of life and elderly transcendence was examined in a study. The importance of understanding the aging process through lived experiences, especially in the context of Iranian culture and religious beliefs, was emphasized. In another study conducted between life satisfaction and depression and elderly transcendence, it was observed that the life satisfaction of those who participated in the elderly transcendence support group in the elderly care home increased and their depression levels decreased. Another research stated that the interventions in the elderly transcendence program had a beneficial effect on the life satisfaction and mental health of the contributors. The relationship between transcendence and spirituality in old age has been supported by studies that assume that increased spirituality may positively affect the development of gerotranscendence. A recent study on wisdom and forgiveness shows of an increment in the level of of gerotranscendence is related to an increment in forgiveness and wisdom. Perceived health conditions, transcendence and wisdom in old age have been found to predict successful aging. The negative correlation between gerotranscendence and successful aging stems from their differing theoretical frameworks. Gerotranscendence emphasizes inner transformation, the search for meaning, and existential growth, while successful aging focuses on functionality and active lifestyle change. However, it has been emphasized that perceived health conditions and wisdom have stronger effects. There are findings that self-transcendence in the elderly has positive relationships with psychological well-being and health evaluation. The study also associated dementia and osteoporosis diagnoses, living in a nursing home, and feeling lonely with lower self-transcendence scores. When the relevant studies examined are examined, it is thought that research models with measurement tools for the perception of gerotranscendence help to understand the phenomenon of old age more comprehensively. When gerotranscendence and other concepts that can be associated with this concept are examined order to develop of interventionist approaches to the subject of old age, the importance of the standardization study of the scale becomes apparent.

Other scales related to old age that stand out in the literature have also been examined. Scales titled *"Resolute Old Age, Fear of Old Age, Quality of Life in the Elderly, Geriatric Pain in Old Age, Psychological Well-Being in the Elderly"* are generally used in studies. It has been observed that these scales were created as a result of studies conducted between 2014-2023. The *"Resolute Old Age Scale"* includes items that further support prejudices against the elderly. There is content that expresses that it is a period when the elderly are emotionally and cognitively sensitive, delicate, and a little more open to failure. The *"Fear of Old Age Scale"* expresses the fears experienced about the period and measures the degree of these fears. The "Geriatric Pain Scale" refers to the pain experienced by the elderly as a result of physical activities. The *"Quality of Life in the Elderly"* scale rates efficiency of the elderly individual's life and their ability to continue this life in a quality manner. The *"Psychological Well Being Scale in the Elderly"* indicates that the elderly person has spent their life with positive experiences and is satisfied with their life as a result of the high score they receive from the scale. None of the listed scales offer a holistic understanding of the concept of gerotranscendence. They are important in terms of conceptualizing and distinguishing the aging process, which is generally defined more successfully, or the problems that come to the fore in old age. This study, on the other hand, addresses transcendence, which is conceptualized as a power of old age, in a multidimensional way, and the concept has not yet been included in the Turkish literature. Studies aimed at measuring the concept of gerotranscendence initially began with the 25-item Gerotranscendence Scale developed by Tornstam. Later, a shorter and more practical 10-item version of the scale was developed, and validity and reliability studies were conducted in different cultures. In this context, An (2015), based on Erikson's ninth developmental stage approach, examined the validity of the 10-item Gerotranscendence Scale in the Korean elderly population and showed that the scale was usable in the Korean sample. In recent years, studies aimed at re-evaluating the psychometric properties of the scale in different cultures have increased. For example, Gerdina and Doušak (2025) examined the psychometric properties of both the 10-item and 25-item

Gerotranscendence Scale in a Slovenian sample and stated that the results of the confirmatory factor analysis indicated that the current structure of the scale needed to be reconsidered in different cultural contexts. These studies highlight the need to maintain the cross-cultural validity of the gerotranscendence construct and to test the psychometric properties of the scale in different populations. In this context, the present study offers the first comprehensive validity and reliability study of the Gerotranscendence Scale adapted to the Turkish language and culture, providing evidence of the scale's usability in elderly individuals living in Türkiye.

4. CONCLUSION

In the last period of the era we are in, being in the flow, a life of awareness, and experiences of transcendence can be considered as the "zeitgeist" of the period. It is thought that elderly people with high awareness who are at peace with their bodies, accept themselves as they are, can adapt to the period they are in, and can feel themselves as a whole, go through their old age processes more comfortably. It is thought that this scale, which measures the concept of gerotranscendence, will be effective in studies to be conducted on the sustainable quality of life, life perceptions, experiences, and psychological health of older adults. In order for the perspective and attitudes related to old age to change, it is important for the elderly to have dynamic values that they can sustain throughout their lives. It is very valuable for older adults to have an understanding that will restructure the meaning of life, review and organize the connections they have established with life and themselves. Therefore, the internalisation of gerotrans-cendence plays an essential part in this meaning-making process.

The scale and concept introduced to the literature by this study contribute to the knowledge about applications for older adults. It is recommended that educational programs and interventions be developed about gerotranscendence to ensure mental and physical well-being in the elderly. Although the posthumanist perspective creates common ground, more comprehensive epistemological, methodological, structural and cultural bridges need to be built for a more integrated definition of old age.

Researcher Contribution Rate

The authors contributed equally to the study.

Conflict Statement

There are no potential conflicts of interest in this study.

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