ADAPTATION OF SHORT FORM OF THE ORAL AND DENTAL HEALTH LITERACY SCALE TO THE TURKISH LANGUAGE

Ağız ve Diş Sağlığı Okuryazarlığı Ölçeği kısa formunun Türk diline uyarlaması

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Abstract

This is a methodological study for the adaptation of the "Health Literacy Dentistry Scale-Short Form (HeLD-14)" in Turkish . 30 participants were reached in language validity and 50 participants in retest reliability. The SPSS and AMOS programs were used to analyze. Kaiser-Meyer-Olkin (KMO) was 0.875, the Barlett Spherical Test chi-square was 3715.076 (p<0.001). In EFA, a four-factor structure was obtained, which explained 71.211% of the total variance, with an eigenvalue above one. In CFA, χ2 /df, RMSEA, GFI values of the model consisting of four dimensions and 12 items are acceptable; AGFI, SRMR and CFI values were in perfect agreement. Cronbach's alpha was calculated as 0.910 for EFA, 0.860 for CFA, the Spearman-Brown was 0.801 and the Guttman Split-half value was 0.799. In convergent and divergent validity assessments, it was observed that all conditions were met, except that the AVE value for the comprehension dimension was below 0.50 and the reliability value for the support dimension was below 0.70. A very strong positive correlation was found between scale scores in retest reliability (r=0.803, p<0.001). In terms of validity of the criteria, there was a moderate positive correlation to the TSOY-32 score (r=0.687, p<0.001). Consisting of the sub-dimensions of Comprehension/Understanding, Support, Economic barriers and Service use the ADSOY-12 scale has been seen as a valid and reliable tool for measuring oral and dental literacy in adults in Turkish culture.

Keywords: Public health, health literacy, dentistry, oral health, validity and reliability.

Özet

"Health Literacy Dentistry Scale-Short Form (HeLD-14))" ölçeğini Türk diline uyarlamak amacıyla uygulanan metodolojik bir çalışmadır. Analizlerde SPSS ve AMOS paket programları kullanılmıştır. Dil geçerliliğinde 30, tekrar test güvenilirliğinde 50 katılımcıya ulaşılmıştır. Kaiser-Meyer-Olkin (KMO) değeri 0,875, Barlett küresellik testi ki-kare değeri 3715,076 bulunmuştur (p<0,001). AFA'da öz değeri 1'in üstünde, toplam varyansın %71,211'ini açıklayan dört faktörlü yapı elde edilmiştir. Dört boyut 12 maddeden oluşan modelin χ2 /sd, RMSEA, GFI değerleri kabul edilebilir; AGFI, SRMR ve CFI değerleri mükemmel uyumda bulunmuştur. Ölçeğin Cronbach alfa değeri AFA'da 0,910, DFA'da 0,860, Spearman-Brown değeri 0,801, Guttman Split-half değeri 0,799 hesaplanmıştır. Yakınsak ve ıraksak geçerlilik değerlendirmelerinde kavrama, anlama boyutu ile ilgili AVE değerinin 0,50'nin altında, destek boyutunun güvenirlik değerinin 0,70'in altında olması dışında tüm koşulların sağlandığı görülmüştür. Tekrar test güvenilirliğinde ölçek puanları arasında olumlu yönde çok güçlü ilişki bulunmuştur (r=0,803, p<0,001). Kriter geçerliliğinde Türkiye Sağlık Okuryazarlığı Ölçeği (TSOY-32) puanı ile olumlu yönde orta düzeyde ilişki bulunmuştur (r=0,687, p<0,001). Kavrama/Anlama, Destek, Ekonomik engeller ve Hizmet kullanımı alt boyutlarından oluşan ADSOY-12 ölçeğinin Türk kültüründe yetişkinlerde ağız ve diş sağlığı okuryazarlığını ölçmek için geçerli ve güvenilir bir ölçüm aracı olduğu gösterilmiştir.

Anahtar kelimeler: Halk sağlığı, sağlık okuryazarlığı, diş hekimliği, ağız sağlığı, geçerlilik ve güvenilirlilik.

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Introduction

Oral and dental diseases are a major public health issue because they are common around the world and the costs of treatment are high (1). Oral health status is regarded as an indicator of quality of life (2). The Global Burden of Disease Study, which consists of data from 195 countries, reported that 3.5 billion people suffered from oral diseases in 2017 and untreated dental caries were among the most common non-communicable diseases (3). Oral and dental health literacy, one of the sub-headings of health literacy, is defined as "the degree to which individuals have the capacity to receive, process and understand basic oral health information and services necessary to make appropriate health decisions" (4). Its low level is associated with oral health problems. It has been observed that the studies on the subject are limited, and it has been understood that there is a need for a comprehensive, valid and reliable tool that can be applied in the Turkish language (5). With our research, it was aimed to adapt the "Health Literacy Dental Scale-Short Form (HeLD-14)" scale of Turkish language and to create a valid and reliable tool that can be used in public health studies in our country. In addition, the factors affecting oral and dental literacy levels were also examined with this scale (6).

Material and Method

Ethical disclosures and consents

It is a methodological study conducted between November 2019 and October 2020. Permission was received for the thesis study from the scale owner, Adnan Menderes University Faculty of Medicine Non-invasive Clinical Research Ethics Committee, Aydın Adnan Menderes University Application and Research Hospital and Aydın Provincial Health Directorate.

Sample group

In order to ensure the heterogeneity of oral and dental literacy levels, the research was carried out at Family Health Center No. 09, Aydın Gynecology and Children's Hospital and Aydın Adnan Menderes University Application and Research Hospital among the primary, secondary and tertiary health institutions in Aydın province. The research involved educated volunteers over the age of 18 with no cognitive issues. The 500 people were reached in order to examine the factor structure and psychometric analyzes were accessed at the relevant institutions by providing a distribution according to the rate of application to the physician (7, 8). The scales were administered to 30 academicians at the level of associate professor or higher for language validity, with an interval of one week, and for retest reliability, with an interval of two weeks, in 50 individuals (9, 11). The preliminary trial consisted of 20 people similar to the sample group (12).

Data collection tools

For the purpose of collecting data, the four-part Oral and Dental Health Literacy Scale Adaptation Questionnaire in Turkish has been prepared. The first part includes seven questions about sociodemographic data, the second part includes 12 questions about oral and dental health and six questions about general health, the third part includes the TSOY-32 scale consisting of 32 questions, and the fourth part includes the Turkish text of ‘’Ağız ve Diş Sağlığı okuryazarlığı-14 (ADSOY-14) ‘’ (13).

Turkey Health Literacy Scale (TSOY-32)

It is a scale consisting of 32 questions developed based on the HLS-EU Working Conceptual Framework to evaluate the health literacy of individuals over the age of 15. TSOY-32 consists of two dimensions: Treatment and Service and Disease Prevention/Health Promotion. Each dimension includes four components:

Accessing Health-Related Information, Understanding Health-Related Information, Evaluating Health-Related Information, and Use/Application of Health-Related Information (13, 14).

HeLD-14 scale

This is a 14-question scale that assesses oral and dental health literacy in people over the age of 18. Adaptation studies have been performed in Brazil and Indonesia, but there is no use or adaptation study in Turkey (15, 16). There are seven sub-dimensions consisting of two items: comprehension, understanding, support, economic barriers, access, communication and use. Each item is ranked on a Likert-type scale between zero and four. Surveys where 5% or more of the responses are left blank are not included in the calculations. The average score is used for situations where less than 5% of responses are missing.

Data Analysis

SPSS v25.0, SPSS AMOS v23.0 (Analysis of Moment Structures, 2015) package programs were used in the analysis. The adequacy of the sample size and the suitability of the data for factor analysis were evaluated by the KMO and Barlett Test of Sphericity, the compatibility of continuous variables with the normal distribution, the Kolmogorov-Smirnov Test, and the multiple normality assumption Skewness and Kurtosis values (16-18). Descriptive data are presented in numbers and percentages, and data that are non-normally distributed are presented in medians and inter-quartiles. In the correlation analysis, parametric data was analysed with Pearson and non-parametric data was analysed with the Spearman correlation test. The analytical techniques used in the study and the accepted limit values are set out in Table 1. Type 1 error level α=0.05 was accepted.

Table 1: Psycholinguistic and psychometric analysis stages of HeLD-14 scale adaptation study to Turkish language.

		Analysis Techniques
Psycho-Linguistic Analysis	**Linguistic equivalence**	The scale was translated into Turkish by two dentists, a public health specialist and an English language specialist, and then the translations were translated back into English by different people.
	Cultural Adaptation	Translation and back-translation texts were made into a single text by three academicians who are fluent in both languages and the measured concept and presented to expert opinion. It was applied to 20 participants for a preliminary trial and the Cronbach alpha value was calculated.
Validity Stages	**Appearance Validity**	In order to evaluate the items in terms of appearance, readability, ease of application and order of the items, the opinions of four experts on the subject were consulted.
	Language Validity	Pearson correlation analysis was performed by applying the HeLD-14 and ADSOY-14 scales to 30 academicians with a one-week interval. The correlation value was very strong between 0.75-1.00, strong between 0.50-0.74, 0.25-0, between 49 was interpreted as moderate and between 0.0-0.24 as low (19).
	Criterion Validity	Concomitantly administered TSOY-32 and ADSOY-14 scores were compared with Spearman's correlation analysis.
	Construct Validity	Principal Component Analysis estimation and promax rotation method were used in EFA and evaluation was made with the criteria of number of eigenvalues, slope graph and cumulative variance ratio explained. The criteria for the number of eigenvalues higher than one, the point at which the slope starts to disappear on the slope graph, and the cumulative variance ratio above 52% are used to determine the appropriate number of factors (16-22).Maximum Likelihood estimation method was used in CFA, X^2 /df, CFI, GFI, AGFI, SRMR, RMSEA values were evaluated considering the following conditions (16-22).

		Index	Acceptable Fit	Perfect Fit
Psychometric Analysis		**X^2 /df**	2 <X^2 /sd ≤ 5	0 ≤X^2 /sd < 2
		GFI	0.90 < GFI ≤0. 95	0.95 ≤ GFI < 1.00
		AGFI	0.85 < AGFI ≤ 0.90	0.90 ≤ AGFI < 1.00
		CFI	0.90 < CFI ≤ 0.95	0.95 ≤ CFI < 1.00
		RMSEA	0.05 < RMSEA ≤ 0.08	0.00 ≤ RMSEA < 0.05
		SRMR	0.05 < SRMR ≤ 0.10	0.00 ≤ SRMR < 0.05
	Convergent and Divergent Validity	CR>0.7, AVE>0.5, CR>AVE, MSV<AVE, ASV<AVE, $\sqrt{AVE}$ > Interfactor correlation conditions (23, 24).		
Reliability Stages	**Internal Consistency**	Evaluation was made by calculating Cronbach's alpha,correlation between items, corrected item-total correlation values and percentages of floor and ceiling effects. Cronbach's alpha coefficient is considered to be high between 0.81-1.00, moderate between 0.61-0.80, low-level reliability between 0.41-0.60, and it is stated that the scale is unreliable when it is below 0.40 (22, 23). In cases where the Cronbach's alpha coefficient increases more than 5% when the item is removed from the scale, it is recommended to remove that question from the scale (9). In addition, the base effect and ceiling effect percentages calculated over the scale total and subdimension scores are below 15%; it is recommended that the mean of correlations between items be between 0.20 and 0.40,and item-total correlations of 0.30 and above (25-27).		
	Parallel Form	ADSOY-14 and TSOY-32 scales were applied simultaneously and evaluation was made with Pearson correlation analysis.		
	Test-Retest	ICC and Pearson correlation value between the two measurements were calculated by applying the ADSOY-14 scale to 50 participants with an interval of 15 days.		
	Two Half	The first half and second half questions are divided into two groups of seven questions each in the same group. In the evaluation between the two halves, Spearman-Brown and Guttman Split-half values were calculated.		

EFA:Explanatory Factor Analysis, CFA:Confidential Factor Analysis, CFI:Comparative Fit Index, GFI:goodness-fit index, AGFI: Adjusted Goodness-fit Index , SRMR:Standardized Root of Mean Square Errors, RMSEA:Root Mean Square Error of Approximation, CR:Composite Confidence, ASV:Average Shared Variance Squared, MSV:Maximum Shared Variance Squared, AVE:Mean Explained Variance, ICC: Intraclass correlation coefficient

Results

54.2% of the participants were female, and the median age was 34.0 (25-75 p, 27-42) years. Considering the distribution of age groups, 34.2% are in the 25-34 age group, 4.4% are 65 and over. 32.2% were enrolled in university or had a higher education, 15.6% had a primary education, 21.8% had no job, 24% were housewives and 1.4% were retired. In assessing the income statement, it was found that 11.6% of individuals had more income than their expenses, 41.8% had less and 46.6% had an equal level of expenses to their income. In addition, it was observed that 13.0% of the participants did not have any health insurance 2.6% were covered by general health insurance and 14.4% were covered by private health insurance.

Psycholinguistic Evaluations

In the linguistic equivalence and cultural adaptation stages, the scale was translated into Turkish, and the arrangements were made in line with the suggestions given to provide the equivalent of the concept in Turkish. The internal consistency of the Cronbach scale alpha, which was applied to 20 participants, 12 of whom were male, prior to trial, was set at 0.725.

Psychometric Evaluations

After the psycholinguistic evaluation, the text was evaluated by four experts in

terms of face validity. Adjustments were made in the items and answer categories. A very strong positive correlation was found between the total scores of the HeLD-14 and ADSOY scales administered one week apart (r= 0.774, p<0.001). A positive and strong correlation was found between the concomitantly administered TSOY-32 and ADSOY total scores (r=0.687, p<0.001).

The alpha values of the Cronbach ADSOY scale depending on the dimensions determined after EFA and CFA, and the percentages of floor and ceiling effects are presented in Table 2. In cases where items 4 and 5 were deleted, the increase in Cronbach alpha values did not exceed 5 %. In assessing the reliability of the parallel shape, a strong positive correlation was found between the TSOY-32 scores (r=0.687, p<0.001).

In terms of test-retest reliability, a very strong positive correlation was observed between the applications achieved and the scores obtained (r=0.803, p<0.001). The intraclass correlation coefficient (ICC) between the two applications was calculated as 0.885. (p<0.001) Spearman-Brown value measured in two halves method was calculated as 0.801 and Guttman-Split half value as 0.799. The correlation values between the accepted post-CFA model dimensions and the converging and diverging validity assessment data are presented in Table 3. The AVE value of the comprehension, understanding dimension is found to be below 0.50 and the composite reliability value of the support dimension is below 0.70.

Exploratory Factor Analysis

The KMO value for the analysis was 0.875, and the chi-square value for the Barlett Sphericality test was 3715.076 (p<0.001). In the EFA, a four-factor pattern was observed with an eigenvalue greater than 1, accounting for 71.211% of the total variance. When the factor matrices were examined, it was observed that the factor loads of all items were greater than 0.4, and the third item included in the two sub-factors (Factors 1 and 4) was re-evaluated by confirmatory factor analysis (Table 4). It was decided to keep factor 1, which was thought to have a higher factor load and be more suitable in terms of content.

Confirmatory Factor Analysis and Fit Index Models

It has been observed that the four-factor model needs adjustment in the second-level multi-factor CFA. After the covariances formed between the 1st and 2nd items and the 9th and 10th items, the need for regulation continued, and the 1st and 9th items were removed from the scale and the model was reanalyzed. Path diagrams and DFA fit index values before (ADSOY-14) and after (ADSOY-12) modification are shown in Figure 1.

Comparison of ADSOY-12 Scale Scores

Sociodemographic Characteristics

The ADSOY-12 scale overall score and the sub-dimensions of service use, knowledge, understanding, and support were shown to be higher for females (p<0.05). With the exception of the support sub-dimension, it was found that participants under the age of 40 had higher scores overall and across all sub-dimensions (p<0.05). All scales and sub-dimensions of the ADSOY-12 showed a significant difference in the evaluation made according to the places of application, and further analysis revealed that this difference was caused by the higher scores of those who applied to the university hospital compared to the other two groups (p<0.05). In individuals who got education at the university or higher level, high scores were seen in all sub-dimensions and overall scores, with the exception of the comprehension and understanding sub-dimension (p<0.05). It was noted that the group that declared income less than expenses obtained significantly lower ratings in the overall and all sub-dimensions when compared to groups who declared income equal to expenses, and income less than expenses (p<0.05).

Oral and Dental Health Status

In the total score and in all sub-dimensions except the support sub-dimension, those who knew the number

of teeth scored higher than those who did not know, and those who used dental floss had higher scores than those who did not ($p<0.05$). All scores of those who brushed their teeth twice a day or more were higher than those who brushed irregularly ($p<0.05$). Those who stated that they went to the dentist in the last year; Those who stated that they generally went to regular dental examinations received higher scores in all sub-dimensions and in total, except for the support sub-dimension, than those who only went to the dentist when they had any problems ($p<0.05$).

Table 2: Internal consistency analysis data of ADSOY scale by EFA and CFA modeling.

	Adjusted item-total correlation		Cronbach's alpha when removed		Cronbach's alpha		Base Effect %	Ceiling Effect %
Items	**EFA**	**CFA**	**EFA**	**CFA**	**EFA**	**CFA**	**CFA**	**CFA**
1. Are you able to pay attention to dental health needs?	0.455	-	0.874	-		-	-	-
2. Are you able to make time for things good for dental health?	0.501	0.470	0.872	0.853				
3. Are you able to fill in dental forms?	0.622	0.601	0.868	0.847	0.752	0.689	2.000	31.000
4. Are you able to read dental information brochures?	0.511	0.497	0.871	0.852				
5. Are you able to take support to a dental appointment?	0.411	0.430	0.879	0.859				
6. Are you able to ask for support to a dental appointment?	0.322	0.346	0.887	0.869	0.886	0.886	11.000	28.000
7. Are you able to pay to see a dentist?	0.588	0.591	0.868	0.846				
8. Are you able to pay for dental medication?	0.562	0.557	0.869	0.848	0.657	0.657	11.600	35.600
9. Do you know how to get a dentists appointment?	0.639	-	0.866	-		-	-	-
10. Do you know what to do to get a dental appointment?	0.648	0.613	0.866	0.845				
11. Are you able to look for a second opinion?	0.646	0.623	0.865	0.843				
12. Are you able to use information?	0.705	0.690	0.864	0.841	0.904	0.889	0.000	40.600
13. Are you able to carry out dental instructions?	0.699	0.684	0.864	0.842				
14. Are you able to use dentists advice?	0.680	0.665	0.865	0.844				
ADSOY	-	-	-	-	**0.878**	**0.860**	**0.00**	**8.20**

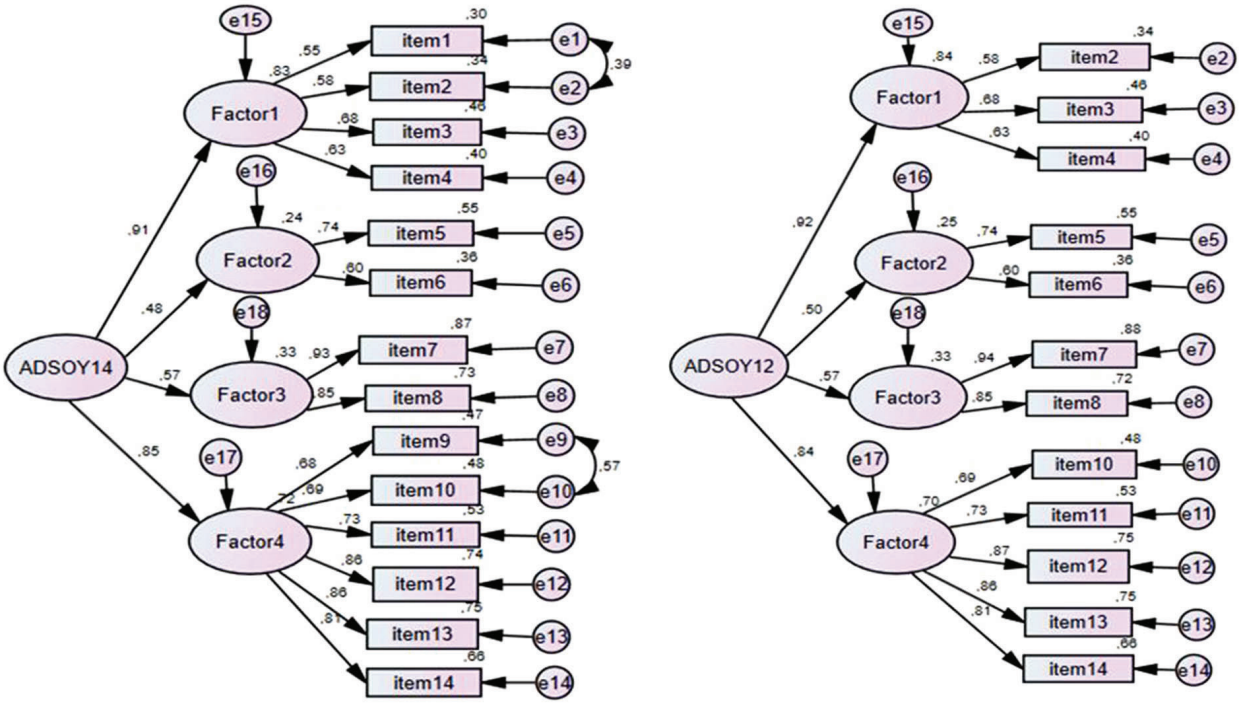
Table 3: AVE, CR, MSV, ASV and interdimensional correlation values for sub-dimensions of the ADSOY-12 scale.

	CR	AVE	MSV	ASV	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	0.700	0.442	0.093	0.087	0.664*			
Factor 2	0.675	0.516	0.436	0.268	0.303	0.718*		
Factor 3	0.890	0.803	0.373	0.300	0.305	0.661	0.896*	
Factor 4	0.893	0.629	0.373	0.242	0.279	0.527	0.611	0.793*

*P<0.001 for all correlation values, * √AVE values|correlation between factors*

Table 4: Descriptive properties of ADSOY scale items and EFA eigenvalue, variance and factor loads values.

Exploratory Factor Analysis Values					Descriptive Features		
Sub-dimensions	**Eigen value**	**Variance (%)**	**Item No.**	**Factor Loads**	**Mean±SD**	**Skewness**	**Kurtosis**
Factor 1	1.450	10.356	*Item 1*	0.899	-	-	-
			Item 2	0.854	3.17 ± 0.997	1.386	1.758
			Item 3	0.418	3.41 ± 0.925	1.674	2.395
			Item 4	0.463	3.28±1.166	1.720	2.040
Factor 2	1.168	8.342	*Item 5*	0.841	2.91 ±1.465	1.095	-.298
			Item 6	0.877	2.54 ±1.654	0.624	-1.320
Factor 3	1.257	8.976	*Item 7*	0.869	2.54 ±1.432	0.556	-1.042
			Item 8	0.898	2.55 ±1.404	0.592	-.931
Factor 4	6.095	43.536	*Item 3*	0.414	3.41 ± 0.922	1.674	2.395
			Item 9	0.880	-	-	-
			Item 10	0.897	3.28 ±1.075	1.444	1.155
			Item 11	0.741	3.17 ±1.196	1.397	.886
			Item 12	0.813	3.34 ±0.976	1.505	1.565
			Item 13	0.800	3.34±0.934	1.457	1.608
			Item 14	0.788	3.38±0.912	1.585	2.037



	x²/df	GFI	GFI	AGFI	CFI	SRMR	RMSEA
ADSOY-14	6.557	6.557	0.872	0.882	0.889	0.552	0.106
ADSOY-12	3.528	3.528	0.943	0.911	0.956	0.042	0.071

Figure 1: Second level multi-factor confirmatory factor analysis before and after modification.

Discussion

In the study. the HeLD-14 scale. which was developed to measure the level of oral and dental health literacy. was adapted to the Turkish language. Content validity. which is suggested to be done in scale development studies. was not included in the analyses because it was not considered necessary in adaptation studies. It has been observed that the HeLD-14 scale has been adapted in Australia, Brazil and Indonesia (15, 16, 30).

After the translation-retranslation and textualization processes. it was seen that face validity was ensured by consulting and expert opinions. As a result of language and criterion validity analyses. it was seen that the validity conditions were met. When the Skewness and Kurtosis values of all items in the scale were examined. It was understood that the multiple normality assumption was met.

While there were seven dimensions in HeLD-14 a four-dimensional structure was found that could explain 71.21% of the total variance in EFA for ADSOY. In the EFA it was observed that the third item was included in both the first and fourth factors despite the rotation and although it created a factor load greater than 0.32 in both dimensions. There was a difference of less than 0.10 between the factor load values. Although it is thought that this item could not find a response in oral and dental health service practices in Turkey. lt was stated that there were difficulties in the translation phase. However it was seen that there was no problem in the factor load of the third item in the CFA and when it was removed from the model. The scale was not sufficiently fit and it was understood that there was no need to remove the item from the model.

The fit index values of the model consisting of four dimensions and 14 items determined in the exploratory factor analysis (EFA) were found to be outside the acceptable limits (17-23). In the evaluation made considering the correction suggestions and the EFA values of the items. It was decided to remove the first and ninth items from the model. It was observed that there was no change in the number of dimensions after the removal of the items. It is thought that the first and second items are similar in terms of content and that no concept deficiencies have been caused by removing the first item. In addition it is thought that removing the ninth item from the scale for the ninth and tenth items related to appointment will not cause any problems. Considering the fit values of the model consisting of four dimensions and 12 items. the values of X^2/SD, RMSEA, RMR, GFI are acceptable; AGFI, SRMR and CFI values were found to be in perfect agreement. Based on these results it was understood that the construct validity of the 12-item four-dimensional ADSOY-12 scale was acceptable.

After CFA and EFA the 'Utilization'. 'Access' and 'Communication' dimensions were combined with the 'Understanding' and 'Receptivity' dimensions in HeLD-14 while the 'Economic barriers' and 'Support' dimensions remained the same. It was thought that the six items in the three dimensions that were combined were related to the effective use of the dental examination and could be combined under the title of 'Service Usage' in Turkish. It has been seen that the first four questions about understanding the importance of oral and dental health and understanding the brochures and forms related to the subject can be combined under the title of 'Comprehension/Understanding' in the Turkish language.

It is seen that the conditions for divergent validity are met in all dimensions. and convergent validity in dimensions other than Comprehension. Understanding and Support. The floor and ceiling effect values of the ADSOY scale were found below 15% which supports the consistency of the scale. When the sub-dimensions were evaluated separately the floor effect was below 15% in all sub-dimensions while the ceiling effect was above 15%. However since floor and ceiling effects were not mentioned in other adaptation studies of the original scale a

comparison could not be made (6, 15, 16, 29).

When examining the mean scores of the participants by age group it was seen that the significantly younger groups got higher scores in the other three studies similar to our study. When comparing gender there was no significant difference in terms of total score in the Australian and Brazilian studies while in the Brazilian study women scored significantly higher in the 'utilisation' subheading. In our study women scored significantly higher than men in the ADSOY scale total score and 'service use' and 'comprehension' 'understanding' sub-dimensions. It is thought that the significant difference in our country is due to cultural and social differences in terms of personal hygiene care and cleanliness in the female gender. A significant difference was also found between the oral and dental health literacy levels between primary secondary and tertiary health institutions and it is thought that the difference is due to the higher age and lower education level of the participants from the family health center. It was observed that groups with higher education levels had significantly higher scores in our study and in the Brazilian study. It is thought that the low number of participants in the Australian study may be a factor in the lack of difference in gender and education comparisons. Similar to the studies indicating a two-way relationship between economic status and health literacy in the assessment of income level and similar to the Brazilian study it was observed that those with higher incomes scored significantly higher (15, 31). As expected in the comparisons made according to their oral and dental health status it was found that those with higher oral and dental health literacy levels paid more attention to oral and dental care.

Due to the onset of the COVID-19 pandemic during the research process there have been changes in the applications of individuals over the age of 65 or with chronic diseases to the health institution reducing the participation of this age group in the research. Although there are different approaches in adaptation studies evaluation according to the current adaptation guide in all analysis steps and the number of 500 participants constitute the strengths of the study.

Conclusions

It is expected that as the literacy level of oral and dental health increases the accessibility and quality of use of health services increases in the society. Through this research HeLD-14 scale which measures oral and dental health literacy level was adapted to Turkish language. After the analyses the ADSOY-12 scale was evaluated as a valid and reliable measurement tool for adults in the Turkish language. After the analyses the ADSOY-12 scale which is considered to be a valid and reliable measurement tool in Turkish for adults is recommended to be used in community studies. It is thought that using the scale in health institutions and providing information on subjects such as tooth brushing and regular examinations for the protection of oral and dental health especially for those with low scores will be effective.

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Ek: Ağız ve Diş Sağlığı Okuryazarlığı Ölçeği-Kısa Formu (ADSOY-12)

	Lütfen aşağıdaki her maddeyi okuduktan sonra yapabilme durumunuzu zorluk derecesine göre işaretleyiniz.	Evet, Hiç Zorlanmadan	Evet, Bira Zorlanarak	Evet, Zorlanarak	Evet, Çok Zorlanarak	Hayır
1	Ağız ve diş sağlığınız için yapılması gerekenlere zaman ayırabilir misiniz?					
2	Diş hekiminizin size verdiği, yapılacak işlemlere ait bilgilendirme formlarının ilgili yerlerini doldurabilir misiniz?					
3	Diş kliniklerine ve bekleme odalarına bırakılan ağız ve diş sağlığı broşürlerini okuyabilir misiniz?					
4	Diş hekimi randevunuz için ailenizden ya da arkadaşlarınızdan destek alabilir misiniz?					
5	Diş hekimi randevunuz için birinden size eşlik etmesini isteyebilir misiniz?					
6	Diş hekimi muayene ücretini ödeyebilir misiniz?					
7	Ağız ve diş sağlığınız için gerekli tedavi giderlerini karşılayabilir misiniz?					
8	Diş hekimi randevusu almak için hangi işlemlerin yapılacağını öğrenebilir misiniz?					
9	Diş hekimlerinden ağız ve diş sağlığınız ile ilgili alternatif görüşler alabilir misiniz?					
10	Ağız ve diş sağlığınız ile ilgili karar verirken diş hekiminizin verdiği bilgileri kullanabilir misiniz?					
11	Diş hekiminin size verdiği talimatları uygulayabilir misiniz?					
12	Ağız ve diş sağlığınız ile ilgili karar verirken diş hekiminizin tavsiyelerini kullanabilir misiniz?					