Development of the Leisure Time Attitude Scale for Children with Visual Impairment

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ABSTRACT:

This study was conducted to develop a leisure time attitude scale for children with visual impairment. The study sample consisted of 579 children with visual impairment. With the consent of the children's parents and themselves, they were asked to answer the sociodemographic information form and the list of questions in the leisure time attitude scale for children with visual impairment, which was created by the researcher team based on expert opinion. Cronbach's Alpha and Omega coefficients of the scale were found to be 0.94. In the correlation coefficient used as the test-retest reliability method, a moderate and high-level positive relationship was found between the scores obtained from the first and second applications (0.74; 0.65; 0.72; 0.66). According to the criterion validity findings, a moderate positive and significant relationship was found between the scores obtained from the leisure time attitude scale for children with visual impairment and the general leisure time attitude scale ($p<0.01$). These results showed that the leisure time attitude scale for children with visual impairment is a valid and reliable new scale.

Keywords: Children, Visual Impairment, Attitude, Leisure.

INTRODUCTION

This study was conducted to develop a leisure time attitude scale for children with visual impairment.

Leisure time generally involves an individual leaving routine activities such as work and instead engaging in pleasurable and enjoyable activities (Bull et al., 2003; Johnson et al., 2000). In other words, it is the time left to the individual after work, sleep, eating, and meeting other basic needs (housework, family responsibilities, shopping, etc.), and can be used freely (Dictionary of Leisure, 2007).

It is possible to say that there are many different perspectives when defining the concept of leisure. Leisure can be explained in terms of time, activity, attitude, and quality. The time-based approach to leisure describes leisure as free from work and all other obligations in which the individual can make free choices. The activity-based leisure approach describes the activities the individual is interested in during leisure time. Another approach, the attitudinal approach, explains that leisure time should be evaluated according to the individual's mood, experiences, and perceptions. Individuals may have different experiences (e.g., feelings of freedom, pleasure, fear, boredom, etc.) from the same activity (Torkildsen & Leisure, 2005).

The positive effects of leisure time activities on individual and social quality of life and mental well-being have been frequently emphasized in the literature (Wankel, 1994). However, it is stated that there is a strong relationship between satisfaction from participation in leisure activities and mental well-being and that participation in leisure time contributes to high mental well-being (Kekäläinen et al., 2018; Lampinen et al., 2006). It has been determined that there are limited studies in terms of leisure time activities and strategies of visually impaired individuals, especially among disabled groups (Eldeniz et al., 2018). This research is essential in terms of developing a leisure time attitude scale for children with visual impairment, which is a new scale.

METHODS

Process

For the new scale study, the items in the scale were developed by taking the opinions of ten faculty member experts. According to the faculty members' feedback, the researcher's team made the necessary arrangements again, and the scale was finalized.

After obtaining approval from the Scientific Research and Publication Ethics Committee of Hakkari University, the parents filled out the sociodemographic information form prepared online (Google Form) and the leisure time attitude scale for children with visual impairment. In the next stage, the leisure time attitude scale for children with visual impairment was applied to 50 nurses twice as a single session with a 2-week interval (15 days). Finally, for criterion validity, the leisure time attitude scale for children and the leisure time attitude scale (Akgül & Gürbüz, 2011) were administered in a single session with the parents. The data of 579 children with visual impairment who completed the socio-demographic data form and scale questions were analyzed.

The leisure time attitude scale for children with visual impairment consists of 16 items with three factors. The purpose of the scale was to develop a new scale for determining leisure time attitudes towards children with visual impairment. Parental consent was obtained; children with visual impairment completed the scale with the support of their parents. Details of the analyses regarding the validity and reliability of the scale are given in the findings section.

After reviewing the literature, new items suitable for the leisure time attitude scale concept structure for children with visual impairment were prepared by considering the previously prepared scale items. Open-ended questions were asked, and participants expressed their opinions. New items were added to the pool based on the views received within the scope of the data. In its first form, the scale consists of 25 items. The 25-item scale was submitted to expert opinion to determine the content validity and to remove inappropriate questions from the scale.

After the expert opinions and according to the feedback received, 5 items were removed from the 25-item scale. The 20-item sociodemographic data form was added and given its initial form.

According to the results of item loadings and item analysis, according to the tests performed in the findings section, 4 more items were removed from the 20-item scale, and 16 items were included in the item reduction section.

In its final form, the scale consists of 16 items with 3 factors. Since the scale consists of 16 items, the scores obtained from the overall scale are divided by the number of items to evaluate the scores obtained from the leisure time attitude scale for children with visual impairment.

Research data were collected using the following data collection forms.

- Socio-demographic data collection form,
- Leisure time attitude scale for children with visual impairment

The Socio-Demographic Data Collection Form consists of 5 questions about age, gender, educational status, disability level, and leisure.

Leisure Time Attitude Scale for Children with Visual Impairment

The leisure time attitude scale for children with visual impairment, developed by the research team after receiving opinions from 10 expert faculty members, consists of 16 questions. According to the factor analysis results the scale had a three-factor structure. The scale is filled out by children with visual impairment with the support of their parents. The items in the scale are generally coded as disagree entirely (1), disagree (2), undecided (3), agree (4), and agree entirely (5). In order to evaluate the scores obtained from the leisure time attitude scale for children with visual impairment, the scores obtained from the overall scale are divided by the number of items. In this way, scores between 1 and 5 are obtained. In order to interpret these scores, the following reference ranges are used; "1.00 - 1.79" is calculated as deficient level, "1.80 - 2.59" as low level, "2.60 - 3.39" as medium level, "3.40 - 4.19" as high level, "4.20 - 5.00" as very high level.

Evaluation of Data: Exploratory and confirmatory factors analysis were applied to assess the construct validity of the leisure time attitude scale. In addition, CR (Combined reliability), AVE (Average variance explained), MaxR(H) (Maximum H reliability), and MSV (Maximum shared variance) values were calculated and interpreted to determine the discriminant and convergent validity of the scale. The discrimination of the scale was determined by item analysis. For this purpose, the scores obtained from the scale were ranked, and the item scores between the upper and lower 27% groups were compared using the independent samples t-test. Cronbach and Omega alpha and in the introduction it was alpha and Omega were calculated to observe the reliability of the scale based on internal consistency. In addition, a test-retest analysis was conducted to determine the stability of the scale and to test whether it could be measured consistently over time. Finally, a criterion validity study was conducted. For this purpose, the scale developed in this study and the Leisure Time Attitude Scale (LASAS) developed by Akgül and Gürbüz (2011) were administered to the participants in a single session. The relationships between the scores obtained from the two measurement tools were calculated and analyzed. Analyses were performed using SPSS 25.0 and AMOS 26.0.

Ethical Aspect of Research

Permission was received for the research from Hakkari University Scientific Research and Publication Ethics Board (IRB: 2023.128/1, Date: 14.11.2023). In order not to cause any ethical violations within the scope of the research, approval was obtained from the children and their parents via an informed consent form.

RESULTS

A total of 579 participants took part in the study. The data of 269 participants were used in exploratory factor analysis, 260 participants were used in confirmatory factor analysis, and 50 participants were used in test-retest and criterion validity studies. For the item analysis study, the data of 579 participants used in exploratory and confirmatory factor analysis were considered.

When Table 1 is analyzed, it is understood that a large proportion of the participants (44.4%) are 16 and above. 73.7% of the participants were male. 16.6% of the participants graduated from primary school, 25.4% from secondary school, and 58% from high school. A large proportion of the participants (44.4%) indicated their level of disability as low vision. 99.3% of the participants stated that they liked free time.

Descriptive Analysis Results

Before conducting multivariate analyses, the scores obtained from the Leisure Time Attitude Scale were examined by descriptive analysis. The lowest score obtained from the questionnaire was 69, and the highest score was 97. The range of the questionnaire scores was calculated as 28, the mean as 87.77, and the standard deviation as 3.85. The skewness coefficient of the distribution of the survey scores was calculated as -0.98, and the kurtosis coefficient as 0.22. These values showed that the distribution of the questionnaire scores was close to a normal distribution.

Exploratory Factor Analysis Results (EFA)

The KMO value calculated for the Leisure Time Attitude Scale is 0.80. This value showed sufficient relationships between the variables and that the research data were suitable for factor analysis. In the next step, the Barlett Sphericity test was applied. This test is used to assess the validity of the data set for factor analysis and to increase the accuracy of the analysis (Can, 2018). According to the test results, the chi-square value is statistically significant (Barlett Sphericity ($\chi 2(120)$)=4494.32; $p<0.001$). This result indicated that the data were suitable for factor analysis. Factor

Table 1. Distribution of Participants According to Descriptive Characteristics

		f	%
Age	5-7 age	43	7.4
	8-10 age	55	9.5
	11-13 age	134	23.1
	14-16 age	90	15.5
	16 and above	257	44.4
Gender	Boy	427	73.7
	Girl	152	26.3
Education status	Primary School	96	16.6
	Middle School	147	25.4
	High School	336	58.0
Level of disability	Very low vision	50	8.6
	Low vision	257	44.4
	Seeing light	208	35.9
	Completely blind	64	11.1
Do you like free time?	Yes	575	99.3
	No	4	0.7

analysis was performed using the Principal Axis Factoring method. This method is one of the most preferred factor extraction methods in social science (Warner, 2012). The cut-off point for the loading value of the factors was set as 0.30 (Tabachnick & Fidell, 2007). As a result of the analysis, it was observed that three factors with eigenvalues greater than one were formed. In addition, it was observed that education dropped sharply after the third point in the eigenvalue factor graph. It was determined that the eigenvalues of the fourth and subsequent factors were quite close to each other, and these factors' contribution to the total variance was limited. These results showed that the scale factors tended to be grouped under three factors. Factor analysis was repeated with three factors.

Four cross-loaded items (m13, m15, m18, and m19) were removed from the scale one by one, and the analysis was repeated. Sixteen items remained on the scale. According to the factor analysis results, six items were collected in the first factor, five in the second, and five in the third. The factors were named emotional-perceptual, cognitive, and self-efficacy-self-efficacy, respectively, concerning the typical characteristics of the items in the first, second, and third factors. The eigenvalue of the first factor is 8.37, and the variance explained by it is 52.32%. The eigenvalue of the second factor is 2.24, and the variance explained by it is 14.01%. The eigenvalue of the third factor is 1.34, and the variance explained by it is 8.37%. The total variance explained by the three factors is 74.70%. The fact that more than half of the variance is explained shows that the items that make up the scale have high representativeness. The factor loadings of the scale items are shown in Table 2.

Confirmatory Factor Analysis Results (CFA)

Confirmatory factor analysis (CFA) was applied to test the three-factor structure of the Leisure Time Attitude Scale. CFA allows researchers to verify the factor structure of the measurement tool and evaluate the fit of the theoretical model (Çokluk et al., 2010). In this direction, the extent to which the three-factor structure of the Leisure Time Attitude Scale was compatible with the research data was evaluated by applying CFA (Table 3). Confirmatory factor analysis was conducted using the Maximum Likelihood Estimation method. In factor analysis, goodness of fit values are calculated to evaluate model-data fit. The model and data are compatible when the goodness of fit values meet the criteria. In order to improve the model fit values, modification index values

Table 2. Factor Loadings of Leisure Time Attitude Scale Items

Items	Factor			Factor Common Variance	Self-Valuation	Variance Explained (%)
	1	2	3			
m3	0.82			0.76	8.37	52.32
m2	0.80			0.78		
m10	0.75			0.59		
m11	0.73			0.73		
m1	0.64			0,68		
m12	0.58			0.46		
m4		0.94		0.76	2.24	14.01
m6		0.93		0.87		
m4		0.78		0.76		
m17		0.76		0.60		
m16		0.64		0.54		
m8			0.94	0.88	1.34	8.37
m7			0.93	0.87		
m20			0.70	0.52		
m9			0.56	0.41		
m14			0.51	0.42		
				Total variance explained (%)		74.7

Sources: Can, 2018; Warner, 2012; Tabachnick & Fidell, 2007.

were examined, and the relationships between the error values of some items were released.

According to the confirmatory factor analysis results, the factor loadings of the scale items were between 0.64 and 0.76. Each calculated factor loading was statistically significant at the 0.001 level (Figure 1).

Dissociation and Convergent Validity Analysis Results

When Table 4 is analyzed, it is observed that the internal reliability criteria MaxR(H)>0.80, CR>0.70, and AVE>0.50 were met. These results indicated convergent validity (Malhotra & Dash, 2011). To ensure discriminant validity, the AVE> MSV condition must be met, and the square root of the AVE value must be greater than the correlations between constructs (Yurt, 2023). The results showed that the necessary conditions for discriminant validity were met (Table 4).

Item Analysis Results

When Table 5 is examined, it is seen that the t values of the items in the scale are significant ($p<0.001$). It was observed that the mean item scores of the participants in the lower and upper groups favored the participants in the upper group. The results showed that each item in the Leisure Time Attitude Scale was significantly discriminative.

Table 3. Fit Values for the Three-Factor Structure of the Leisure Attitude Scale

Criterion	Good Fit	Acceptable Compliance	Values Obtained	Source
(χ^2/sd)	≤ 3	≤ 5	3.87	Byrne (1989)
RMSEA	≤ 0.05	0.06-0.08	0.07	Browne ve Cudeck (1993)
SRMR	≤ 0.05	0.06-0.08	0.05	
CFI	≥ 0.95	0.90-0.94	0.96	McDonald ve Marsh (1990)
TLI	≥ 0.95	0.90-0.94	0.95	Bollen (1989)
IFI	≥ 0.95	0.90-0.94	0.96	

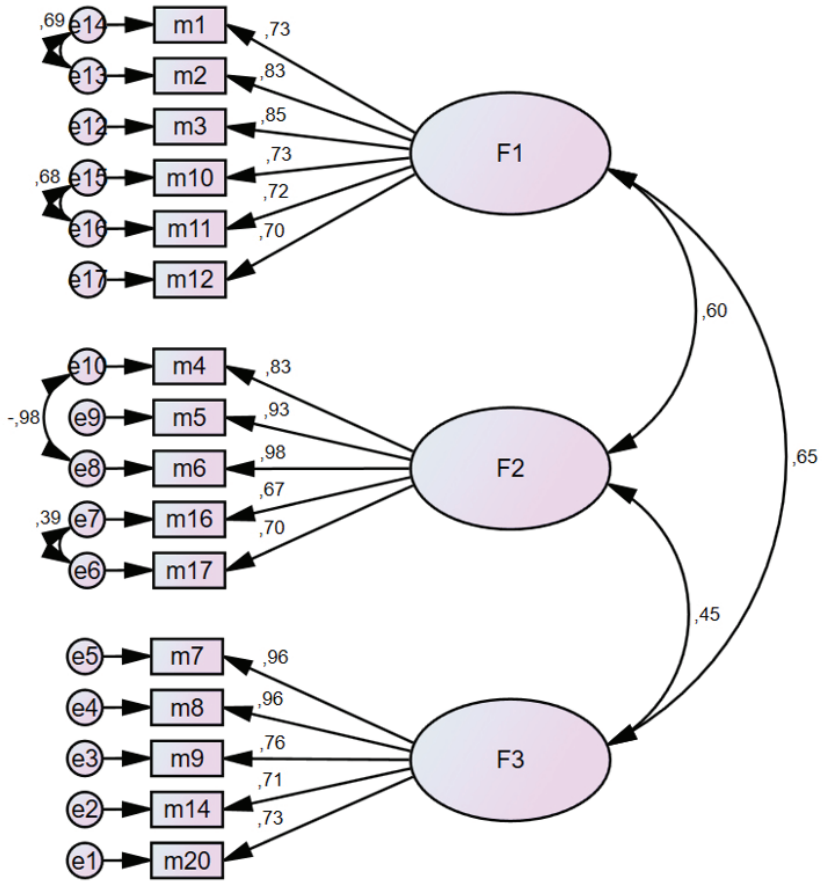

Figure 1. Confirmatory Factor Analysis Model of Leisure Time Scale, $\chi 2=375.39$; sd=97; $p<0.01$
Source: Çokluk et al., 2010

Table 4. Combined Reliability and Explained Mean Variance Values of the Leisure Attitude Scale

	CR	AVE	MSV	MaxR(H)	F3	F2	F1
F3	0.917	0.692	0.426	0.965	0.832		
F2	0.916	0.690	0.363	0.968	0.447***	0.830	
F1	0.890	0.576	0.426	0.900	0.653***	0.602***	0.759

CR=Combined reliability, AVE=Average variance explained, MaxR(H)=Maximum H reliability, MSV=Maximum shared variance

Reliability Analysis Results

When Table 6 is examined, it is understood that the alpha and omega coefficients calculated for emotional-perceptual, cognitive, and self-efficacy-self factors are 0.89, 0.92, and 0.91, respectively. The Cronbach alpha and omega coefficient calculated for the overall scale is 0.94. These values show that the scale is highly reliable.

Test-Retest Analysis Results

When Table 7 is examined, it is observed that despite the 15-day time difference, the mean and standard deviation value-s calculated as a result of the two interventions are pretty close. In addition, the correlation coefficients between the two treatments were between 0.65 and 0.74. These values indicate that there is a moderate to high level of positive relationship between the two applications. These results indicated that the Leisure Time Attitude Scale had a stable structure, made consistent measurements, and was reliable.

Criterion Validity Results

In this study, the Leisure Time Attitude Scale (LASAS), previously tested for validity and reliability by Akgül and Gürbüz (2011), was chosen as the criterion. When Table 8 is examined, it is understood that there are moderate, positive, and significant relationships between the scores

Table 5. Discrimination Levels of the Leisure Time Attitude Scale Items

Item no	27% subgroup (n=143)			27% top group (n=143)		t(284)
	Mean	Ss		Mean	Ss	
m1	4.28	0.51		4.85	0.36	10.47***
m2	4.28	0.51		4.88	0.09	16.30***
m3	4.09	0.28		4.97	0.09	35.75***
m4	4.12	0.33		4.49	0.50	7.11***
m5	4.11	0.31		4.49	0.50	7.51***
m6	4.09	0.28		4.50	0.50	8.30***
m7	4.04	0.21		4.69	0.47	14.77***
m8	4.07	0.25		4.59	0.46	13.99***
m9	4.12	0.33		4.69	0.47	11.51***
m10	4.34	0.47		4.89	0.09	15.97***
m11	4.61	0.49		4.79	0.12	8.66***
m12	4.16	0.78		4.88	0.15	12.08***
m13	4.19	0.46		4.66	0.48	6.47***
m14	4.05	0.22		4.50	0.50	9.66***
m15	4.12	0.33		4.34	0.48	4.42***
m16	4.04	0.21		4.56	0.50	11.26***

***p<0.001

Table 6. Reliability Coefficients of the Leisure Attitude Scale

Scale	Number of items	Cronbach Alfa	Omega Alfa
Emotional-perceptual	6	0.89	0.89
Cognitive	5	0.92	0.92
Self-efficacy-self-identity	5	0.91	0.91
Overall scale	16	0.94	0.94

Table 7. Descriptive Information and Pearson Correlation Coefficients for Test-Retest Reliability of the Leisure Time Attitude Scale

Factor	Application	Mean	Ss	r
Emotional-perceptual	First application	22.68	4.60	0.74**
	Final application	23.16	4.47	
Cognitive	First application	19.21	4.08	0.65**
	Final application	19.26	4.06	
Self-efficacy-self-identity	First application	18.58	4.58	0.72**
	Final application	18.88	4.41	
LTAS	First application	60.68	12.52	0.66**
	Final application	61.30	12.28	

**p<0.01; N=50, LTAS= Leisure Time Attitude Scale

Table 8. Pearson Correlation Coefficients of the Scores Obtained from the Leisure Time Attitude and Leisure Attitude Scales

Variables		BZTÖ		
		Duyuşsal	Bilişsel	Davranışsal
Emotional-perceptual		0.62**	0.55**	0.46**
Cognitive		0.51**	0.67**	0.48**
Self-efficacy-self-identity		0.58**	0.53**	0.49**
LTAS		0.55**	0.62**	0.47**

**p<0,01; N=50, LTAS = Leisure Time Attitude Scale, FTAS= Free time attitude scale

obtained from the leisure time attitude scale and the scores obtained from the leisure time attitude scale. As the leisure time attitude scores increased, the leisure time attitude scores also increased. The results indicated that the leisure time attitude and leisure time attitude scales were consistently related to each other and measured similar characteristics. The results of the criterion validity study showed that the Leisure Time Attitude Scale developed in this study is valid and serves its purpose.

DISCUSSION

This study was conducted to develop a leisure time attitude scale for children with visual impairment. The descriptive analysis results of the research (the lowest score was 69 and the highest score was 97) were close to a normal distribution, and according to the exploratory factor analysis, there was a strong relationship between the variables, and it was suitable for factor analysis (Barlett Sphericity ($\chi 2(120)$)=4494.32; p<0.001). These findings were also found in Paños and Ruiz-Gallardo's (2021) study on the development of Leisure Time in Science (LeTiS), an informal attitude towards science and a pictographic scale in the early years, where descriptive results showed normality and exploratory factor analysis revealed a strong relationship between the variables. The results of Siegenthaler and O'Dell's (2000) on leisure attitude, satisfaction, and perceived freedom in leisure in family couples are similar to our findings. Turhan and Tutar's (2023) Digital leisure time tendency scale: validity and reliability study also show parallels with our findings.

According to our study's CFA results, the goodness of fit values were compatible with the data, and the calculated factor loadings were statistically significant. Psychometric properties of the Leisure Satisfaction Scale (LSS) - short form in Kim and Cho (2022): Rasch rating model calibration approach study found that the items were compatible with each other. The results of the Adult Leisure Time Tendency Scale (ADLTS)-scale development study of Bedir et al. (2023) found that the item load factors were compatible. The results of Mulé et al. (2022) study on the relationship between language development and motor skills, physical activity, and leisure time behaviors in preschool children are similar to our findings, and the item load factors are compatible.

According to the results of the discriminant and convergent validity analysis, it was indicated that the scale met the internal safety criterion and provided convergent validity (factor loadings 0.80, 0.70, 0.50). According to the item analysis results, each item in the scale was significantly significant (p<0.001). The results of this finding are consistent with Baldwin and Caldwell's (2003) study on developing a leisure time motivation scale for adolescents, in which it was concluded that the scale items provided convergent validity and the items were significant. The scale items were found to be compatible with Ragheb and Merydith's (2001) study on the development and validation of a multidimensional scale measuring leisure and boredom. Similarly, the results of Hobbs et al. (2012) study on developing a Pulsar-based time scale and Newell et al. (2001) study on time scales in motor learning and development are similar to our findings.

According to the reliability analysis of the scale, it was determined that the scale was highly reliable (0.94). This result shows that the scale is highly reliable and can be used. In Weissinger and Bandalos (1995), as a result of the development, reliability, and validity study of a scale to measure intrinsic motivation in leisure time activities, the reliability analysis result was 0.91, which shows that it is reliable. Ragheb and Merydith (2001) developed and validated a multidimensional scale measuring leisure time and boredom and found it to be reliable, ranging between 0.78-0.91. The results of the reliability and validity study of Trottier et al. (2002) on the reliability and validity of the Leisure Time Satisfaction Scale (LSS-short form) and the Adolescent Leisure Time Interest Profile

(ALIP) and the reliability and validity study of Rosenblum et al. (2010) on the Children's Leisure Time Utilization Scale (0.83) are similar, and it is a reliable scale.

As a result of the test-retest analysis of the scale, despite the 15-day time difference, it was observed that the mean and standard deviation values calculated as a result of the two applications were very close to each other. In addition, the correlation coefficients between the two applications took values between 0.65 and 0.74, indicating a moderate and high-level positive relationship between the two applications. In Akgül and Karaküçük (2015), the retest reliability of the leisure time management scale: validity and reliability analysis leisure management operation: optional-safety study was found to be 0.86, which is similar to our findings and is reported to be consistent and reliable. In Mannerkorpi and Hernelid's (2005) study on the development, face validity, construct validity, and test-retest reliability of the leisure time physical activity tool and the physical activity tool at home and work for individuals with fibromyalgia, the retest reliability was 0.79 which is similar to our findings. A pilot study by Cabanas-Sánchez et al. (2018) on the reliability and validity of the youth leisure-time sedentary behavior questionnaire (YLSBQ) and Fowles et al. (2017): A pilot study: Validity and reliability of the CSEP– PATH PASB-Q and a new leisure time physical activity questionnaire to assess physical activity and sedentary behaviors which is similar to our findings.

According to the criterion validity results of the scale, the newly developed leisure time attitude scale for children with visual impairment was consistently related to each other and measured similar characteristics. The criterion validity results also showed that the developed leisure time attitude scale for children with visual impairment is valid and serves its purpose. Teixeira and Freire (2013), the Leisure Attitude Scale: Psychometric properties of the short version for adolescents and young adults (Teixeira and Freire, 2013), concluded that it provided criterion validity. Fan and Luo's (2021) study on the development of a measurement scale for the attitudes of people living in urban parks towards leisure time activities stated that the criterion results of the scale were valid and the item contents were consistent. In Ries et al. (2009), as a result of scale development to measure and predict adolescents' physical activity behaviors in leisure time, it is stated that it is a usable scale according to the results of criterion validity. The criterion validity results of developing the leisure time education scale in Munusturlar and Bayrak (2017) are similar to our findings. Sylvia and Shwetha's (2022) study on the Development of the LsPQM-12 Instrument for Measuring the Leisure-Specific Psychological Well-Being and Quality of Life of Mothers of Children with Autism Spectrum Disorder concluded that it was reliable, valid, and provided criterion validity.

As a result, according to our findings, the leisure time attitude scale we developed for children with visual impairment is valid, reliable, and consistent and can be used to support the research in the literature.

CONCLUSION

In this study, a scale based on determining leisure time attitudes towards children with visual impairment was found to be a valid and reliable scale. It is thought that the items in the scale are not too long and can be easily used in special education. For all these reasons, it can be recommended to be used in research to understand and measure attitudes toward leisure time for children with visual impairment.

LIMITATIONS

Children with visual impairment were included in the study. The research results can only be generalized to the research sample group.

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There is no acknowledgment status.

ETHICAL ASPECT OF RESEARCH/ETHICAL APPROVAL STATEMENT

The ethical permission for conducting this research was received for the research from Hakkari University Scientific Research and Publication Ethics Board (IRB: 2023.128/1, Date: 14.11.2023). In order not to cause any ethical violations within the scope of the research, approval was obtained from the children and their parents via an informed consent form.

AUTHOR CONTRIBUTIONS

Generating an idea or hypothesis for research and/or article; ÇMH, RK, DDK, SC. planning methods to achieve results: RK, taking responsibility for the rationale and presentation of the findings: DDK. Taking responsibility for the entire article or the creation of the main part: SC. Before submitting the manuscript, rework not only in terms of spelling and grammar but also in terms of intellectual content: ÇMH.

DECLARATION OF INTEREST

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REFERENCES

Akgül, B. M. Gürbüz, B. (2011). Leisure time attitude scale: validity and reliability study. Gazi *Journal of Physical Education and Sport Sciences*, *16*(1), 37-43.

Akgül, B. M., & Karaküçük, S. (2015). Free time management scale: validity and reliability analysis free time management scale: validity-reliability study. *Journal of Human Sciences*, *12*(2), 1867-1880. https://doi.org/10.14687/ijhs.v12i2.3445

Baldwin, C. K & Caldwell, L. L. (2003). Development of the free time motivation scale for adolescents. *Journal of leisure research*, *35*(2), 129-151. https://doi.org/10.1080/00222216.2003.11949987

Bedir, F., Önal, L., & Stebbins, R. (2023). Adult deviant leisure tendency scale (adults)–scale development study. *World Leisure Journal*, *65*(4), 1-12. https://doi.org/10.1080/16078055.2023.2213686

Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods & Research*, *17*(3), 303-316. https://doi.org/10.1177/0049124189017003004

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions*, 154, 136-136.

Byrne, B. (1989). *A Primer of LISREL, Basic Assumptions and Programming for Confirmatory Factor Analysis Models*.Springer.

Bull C, Hoose J, Weed M. (2003). *An Introduction to Leisure Studies. 1st edition*. Essex: Pearson Education Limited.

Cabanas-Sánchez, V., Martínez-Gómez, D., Esteban-Cornejo, I., Castro-Piñero, J., Conde-Caveda, J., & Veiga, Ó. L. (2018). Reliability and validity of the youth leisure-time sedentary behavior questionnaire (YLSBQ). *Journal of Science and Medicine in Sport*, *21*(1), 69-74. https://doi.org/10.1016/j.jsams.2017.10.031

Can, A. (2018). *Beautiful data analysis in the scientific research process with SPSS*. Pegem Academy.

Çokluk, O., Şekercioğlu, G., & Büyüköztürk, Ş. (2010). Multivariate SPSS and LISREL applications for social sciences. Pegem Akademi Publishing.

Dictionary of Leisure. (2007). *Travel and Tourism*. 3rd edition. A&C Black Publishers Ltd. 177-178.

Eldeniz Çetin, M, & Terzioğlu, N. K. (2018). Opinions of mothers with children with severe disabilities regarding the use of their children's free time. *Abant* İzzet *Baysal University Faculty of Education Journal*, *18*(2), 857-873. https://doi.org/10.26822/iejee.2020562134

Fan, Y., & Luo, J. M. (2021). Development of a measurement scale for residents' attitudes toward leisure activities in urban parks. *Journal of Outdoor Recreation and Tourism*, 33, 100360. https://doi.org/10.1016/j.jort.2020.100360

Fowles, J. R., O'Brien, M. W., Wojcik, W. R., d'Entremont, L., & Shields, C. A. (2017). A pilot study: Validity and reliability of the CSEP– PATH PASB-Q and a new leisure time physical activity questionnaire to assess physical activity and sedentary behaviours. *Applied Physiology, Nutrition, and Metabolism*, *42*(6), 677-680. https://doi.org/10.1139/apnm-2016-0412

Johnson, J., Bourke, M., & Morrison, D. (2000). Advanced Leisure and Recreation. 1st edition. Oxford University Press.

Kekäläinen, T., Freund, A., Sipilä, S., & ve Kokko, K. (2018). Leisure time physical activity, leisure satisfaction and subjective well-being: Causal Relationships in Midlife. *Innovation İn Aging*, *22*(1), 65-66. https://doi.org/10.1093/geroni/igy023.243

Kim, S. H., & Cho, D. (2022). Psychometric properties of Leisure Satisfaction Scale (LSS)-short form: a Rasch rating model calibration approach. BMC Psychology, *10*(1), 151. https://doi.org/10.1186/s40359-022-00861-1

Hobbs, G., Coles, W., Manchester, R. N., Keith, M. J., Shannon, R. M., Chen, D., Bailes, M., Bhat, N.D.R., Burke-Spolaor, S., Champion, D., Chaudhary, A., Hotan, A., Khoo, j., Levin, y., Oslowski, S., Preising, B., Ravi, V., Reynolds, J.E., Sarkissian, J., van Straten, W., Verbiest, J.P.V., Yardley, X., & You, X. P. (2012). Development of a pulsar-based time-scale. *Monthly Notices of the Royal Astronomical Society*, *427*(4), 2780-2787.

Lampinen, P., Heikkinen, R. L., Kauppinen, M., & Heikkinen, E. (2006). Activity as a predictor of mental well-being among older adults. *Aging and Mental Health*, 10, 454-466. https://doi.org/10.1080/13607860600640962

Malhotra, N. K., & Dash, S. (2011). *Marketing research: An applied orientation*. Pearson.

Mannerkorpi, K., & Hernelid, C. (2005). Leisure Time Physical Activity Instrument and Physical Activity at Home and Work Instrument. Development, face validity, construct validity and test-retest reliability for subjects with fibromyalgia. *Disability and Rehabilitation*, *27*(12), 695-701. https://doi.org/10.1080/09638280400009063

McDonald, R. P., Marsh, H. W. (1990). Choosing a multivariate model: Noncentrality and goodness of fit. *Psychological Bulletin*, *107*(2), 247. https://doi.org/10.1037/0033-2909.107.2.247

Mulé, D., Jeger, I., Dötsch, J., Breido, F., Ferrari, N., & Joisten, C. (2022). Correlation between Language Development and Motor Skills, Physical Activity, and Leisure Time Behaviour in Preschool-Aged Children. *Children*, *9*(3), 431. https://doi.org/10.3390/children9030431

Munusturlar, S., & Bayrak, C. (2017). Developing the leisure education scale. World Leisure Journal, *59*(4), 306-325. https://doi.org/10.1080/16078055.2016.1251489

Newell, K. M., Liu, Y. T., & Mayer-Kress, G. (2001). Time scales in motor learning and development. *Psychological Review*, *108*(1), 57.

Paños, E., & Ruiz-Gallardo, J. R. (2021). Attitude toward informal science in the early years and development of Leisure Time in Science (LeTiS), a pictographic scale. *Journal of Research in Science Teaching*, *58*(5), 689-720. https://doi.org/10.1002/tea.21675

Ries, F., Granados, S. R., Galarraga, S. A., (2009). Scale development for measuring and predicting adolescents' leisure time physical activity behavior. *Journal of Sports Science & Medicine*, *8*(4), 629.

Ragheb, M. G., & Merydith, S. P. (2001). Development and validation of a multidimensional scale measuring free time boredom. *Leisure Studies*, *20*(1), 41-59.

Rosenblum, S., Sachs, D., & Schreuer, N. (2010). Reliability and validity of the Children's Leisure Assessment Scale. *The American Journal of Occupational Therapy*, *64*(4), 633-641. https://doi.org/10.5014/ajot.2010.08173

Siegenthaler, K. L. O'Dell, I. (2000). Leisure attitude, leisure satisfaction, and perceived freedom in leisure within family dyads. *Leisure sciences*, *22*(4), 281-296. https://doi.org/10.1080/01490409950202302

Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics. Allyn & Bacon/Pearson Education.

Sylvia, M. I., & Shwetha, K. T. (2022). Development of LsPQM-12 instrument to measure leisure specific psychological well-being and quality of life of mothers of children with autism spectrum disorder. *International Journal of Health Sciences and Pharmacy (IJHSP)*, *6*(2), 20-40. https://doi.org/10.47992/IJHSP.2581.6411.0084

Teixeira, A., & Freire, T. (2013). The leisure attitude scale: Psychometrics properties of a short version for adolescents and young adults. *Leisure/Loisir*, *37*(1), 57-67. https://doi.org/10.1080/14927713.2013.776748

Torkildsen, G. (2005). Leisure and Recreation Management. 5th edition. Routledge.

Trottier, A.N., Brown, G.T., Hobson, S.J., & Miller, W. (2002). Reliability and validity of the leisure satisfaction scale (lss–short form) and the adolescent leisure interest profile (alip). *Occupational Therapy International*, *9*(2), 131-144. https://doi.org/10.1002/oti.161

Turhan, F. H., & Tutar, Ö. F. (2023). Digital leisure time tendency scale: validity and reliability study. *Journal of Education and Recreation Patterns*, *4*(2), 467-478.

Wankel, L.M. (1994). Health and leisure: Inextricably linked. *Journal of Physical Education, Recreation & Dance*, *65*(4), 28-31. https://doi.org/10.1080/07303084.1994.10606894

Warner, R. M. (2012). *Applied statistics: from bivariate through multivariate techniques: from bivariate through multivariate techniques*. Sage.

Weissinger, E., & Bandalos, D. L. (1995). Development, reliability and validity of a scale to measure intrinsic motivation in leisure. *Journal of Leisure Research*, *27*(4), 379-400. https://doi.org/10.1080/00222216.1995.11949756

Yurt, E. (2023). *Practical information for multivariate analysis in social sciences: SPSS and AMOS applications*. Nobel.