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Original Article

Turkish validity and reliability study of public attitudes towards epilepsy (PATE) scale

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Abstract

Aim: This study was conducted for the purpose of adapting the Public Attitudes Toward Epilepsy Scale (PATE) for the Turkish context and determining its validity and reliability.

Material and Methods: This is a methodological research and conducted in a family health centre located in the eastern Turkey between February 2018 and September 2018. In this study, 268 individuals, who were older than 18 years and registered in a Family Health Centre, were reached.

Results: The result of the KMO test was determined to be 0.783 and that of Bartlett's test 1002.772, and both were observed to be significant at a level of p , 0.001.

Conclusion: Our study determined that the Turkish version of the PATE has validity and reliability and can be used in Turkish society.

Keywords: Epilepsy; public attitudes toward epilepsy; scale; Turkey psychometric validation

INTRODUCTION

Epilepsy, a chronic disorder that leads to misfiring of the brain, is a worldwide complication. It is associated with recurrent seizures and loss of consciousness and control of bowel or bladder function. Most of the people with epilepsy (80%) reside in low- and middle-income countries. Due to these reasons, epileptic patients suffer from discrimination (1).

Most of the individuals with epilepsy can control their seizures. However, stigmatization due to some false beliefs, perceptions and attitudes makes the lives of individuals with epilepsy seriously difficult and adversely affects their quality of life (2). The reason for the high stigmatization of epilepsy is the psychosocial consequences of these seizures in the community rather than the medical effects of seizures. Stigmatization is an important factor affecting the social prognosis of epilepsy. In chronic diseases such as epilepsy, restoring the patient's functionality is at least as important for controlling symptoms. Recognizing the factors affecting stigmatization, which is an important obstacle to functionality, and developing ways to fight with stigma, are important steps to restore the functionality of patients (3)..

Even though epilepsy treatments have progressed, public attitude towards this complication still remains negative and discriminatory. For this reason, with the social issues towards epilepsy are typically more harmful than the disease itself (4). The unpredictability and context of the seizure gives rise to psycological complications in patients and constant fear of the unknown. Worldwide, epilepsy in patients brings a wide range of social stigmas throughout the various countries, ethnicities, and cultural groups.

It is common to wear amulets and go to imam in Turkey since epilepsy is also seen as a mystical and paranormal event. Even though epilepsy treatments have progressed, public attitude towards this complication still remains negative and discriminatory. For this reason, with the social issues towards epilepsy are typically more harmful than the disease itself (5). The unpredictability and context of the seizure gives rise to psycological complications in patients and constant fear of the unknown. Worldwide, epilepsy in patients brings a wide range of social stigmas throughout the various countries, ethnicities, and cultural groups (6, 7).

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In a study conducted in Turkey; it was determined that bias and discrimination affected epilepsy patients and their families more negative than epileptic seizures (8). In studies conducted in Turkey, Greece, Thailand, and Cameroon; fear of the disease, lack of epilepsy knowledge in society especially in young people, low education level of society, and false beliefs and attitudes such as regarding epilepsy as mental illness play an important role in exhibiting negative behaviors against individuals with epilepsy (9-14). All these results reveal the necessity of evaluating people's attitudes towards epilepsy patients in order to prevent the stigmatization in our country. This study is important for this purpose.

Aim

The aim of this study is to conduct Turkish Validity and Reliability Study of People's Attitudes towards Epilepsy Scale in Turkish society.

MATERIAL and METHODS

The type and sample of the study

This is a methodological research and conducted in a family health centre located in the eastern Turkey between February 2018 and September 2018. In determining the size of the sample, the criteria recommended by Comrey and Lee (1992) for the factor analysis were taken into account (15). In Comrey and Lee (1992) assessed 50 as very bad, 100 as bad, 200 as appropriate, 300 as good, 500 as very good, and 1000 as perfect in the sample size for factor analysis. In this study, 268 individuals, who were older than 18 years and registered in a Family Health Centre, were reached. The data were determined from the individuals registered in the Family Health Centre using the improbable sampling method. The participation in the study was based on voluntariness. After the participants were informed about the study, those who were voluntary to participate in the study and met the inclusion criteria were included in the study.

The Inclusion Criteria of The Study

• Being open to communication and cooperation

• Being 18 years of age and older

The Exclude Criteria of The Study

• Not being diagnosed with psychiatric disorders

The Data Collection Tools

The Introductory Questionnaire, determining the sociodemographic characteristics of the participants, and "The Public Attitudes Toward Epilepsy Scale" were used tocollect the data.

The Introductory Questionnaire

The 12-item questionnaire form prepared by the researcher includes the socio-demographic characteristics of the participants and the information on their attitudes on epilepsy.

The Public Attitudes Toward Epilepsy Scale

The translation of the scale items into Turkish

In the process of Turkish adaptation of the Public Attitudes Toward Epilepsy Scale, firstly the required permission was received from Kheng-Seang Lim, developing the scale via email, for adaptation of the scale. In Turkish adaptation of the Scale, firstly the language validity was performed. For this purpose, the scale was translated from English into Turkish by two independent expert linguists and four academic members (academic member in Neurology and Public Health Nursing). The translation was examined by the researchers and the Turkish text, representing each of the items best, was prepared. The Turkish draft prepared was retranslated into English. The translations were made by two linguists, who were independent from each other. It was observed that the original version of the scale and the back-translation were consistent with each other.

Content validity

The content validity was performed in order to determine whether or not the scale represented the area to be measured (16, 17). For this purpose, the expert opinions were received from 7 academic members (3 Neurology, 4 Public Health Nursing). The scale was sent to the experts via email. The experts were asked to score each question of the scale between 1 and 4 points in order to assess the appropriateness of the scale items. According to this scoring; 1 is explained with "not appropriate", 2 is explained with "slightly appropriate, the item needs to be optimized", 3 is explained with "fairly appropriate but minor changes are required" and 4 is explained with "very appropriate" (17). The compatibility level of the expert opinions was examined with Kendall W analysis, a nonparametric test (18). It was observed that the scores given by the experts were not statistically different (Kendall W=0.10; p=0.412) and there was consistency among the experts. The prefinal form of the Public Attitudes Toward Epilepsy Scale, prepared for the public with the recommendations of the experts, was prepared.

Pilot Study

The test form was applied to 24 individuals directly to determine the situations of the items to express the similar meanings for the participants, the comprehensibility level and the application period. It took about 10-15 minutes to answer the scale. As a result of the pilot application, as no error was found in the items included in the test form, this application was completed successfully and the main application was started.

Data Collection

Before starting the study, the verbal consents of all the participants were taken. The data were collected from the participants who applied to the Family Health Centre on the weekdays by the researchers. The questionnaires were delivered to the participants in the resting rooms of the Family Health Centres after the necessary explanations were made and they were asked to fill in the forms

individually. For the test-retest analysis, the scale was applied again to 30 participants 3 weeks later.

Data Analysis

In the study, the number, percentage, mean, and standard deviation were used in the descriptive characteristics of the participants. The data were transferred to the SPSS packaged software and the analysis studies were performed. In the analysis studies, The Exploratory Factor Analysis (EFA) was applied in order to determine the construct validity of the Public Attitudes Toward Epilepsy Scale performed to assess the public attitudes and perceptions towards epilepsy and the epileptic patients in Turkey. In order to determine whether or not the scale was appropriate for the Explanatory Factor Analysis, the Kaiser-Mayer-Olkin (KMO) coefficient and Barlett' Sphericity test were used. The Principal Component Analysis and the Varimax Vertical Rotation Technique were used in order to perform the factor analysis. In order to validate the structure forming after the Exploratory Factor Analysis, the AMOS program was used and the Confirmatory Factor Analysis was applied. The Cronbach's Alpha test was performed for the reliability analysis. And total correlation coefficients were calculated to provide the internal consistency of the scale.

Ethical Principles of the Study

The permission was received via necessary correspondences from the (kslimum@gmail.com) email address about the Turkish adaptation of The Public Attitudes Toward Epilepsy Scale, developed by Lim et al. The ethical approval was received from the Malatya Clinical Trials Ethics Committee (No: 2018/6-26) in order to conduct the study. Before filling in the data collection form, the individuals were informed that they were free to participate in the study, their verbal and written consents were received and they were informed that they could withdraw the study whenever they wanted.

RESULTS

Table 1 shows the descriptive characteristics of the participants.

The average age of the participants in the study is 33.67 ± 11.56. 72.4% of the participants are between the ages of 18-39, 66.4% are women, 51.1% are married, 47.8% are university graduates, 72.8% are moderate in perceived income, 61.2% work, 87.3% He stated that he did not have epilepsy, 50% know about epilepsy, 93.3% stated that they did not consider epilepsy as contagious.

KMO (adequacy of samples) testing and Bartlett's test of sphericity analyses (size of sample testing) were performed to assess whether or not the sample was adequate and convenient (19). The results of varimax rotation were examined to obtain the common factor variance values of items. We also analyzed the results of principal-component analysis and interpretable factors. When a correlation matrix is separated into factors, the estimated KMO value is deemed moderate at 0.60, good at 0.70, very good at 0.80, and excellent at 0.90 (20). The results of our KMO measure of sampling adequacy and Bartlett's test of sphericity were 0.827 and 988.692, respectively. Both tests were observed to be significant at a level of p <0.001. Table 2 presents the results of the item–total score correlation and factor analysis, which reveal the extent of the correlation between scale items and the entire scale.

Table 1. Descriptive Characteristics of the Patients who Participated in the Study (n=268)

Descriptive Characteristics	n	%
Age		
18-39	194	72.4
40-59	65	24.3
60 and above	9	3.4
Gender		
Women	178	66.4
Men	90	33.6
Marital status		
Married	137	51.1
Single	122	45.5
/Divorced	9	3.4
Education level		
< Primary school	20	7.9
Primary school	50	18.3
High school	70	26.1
University	128	47.8
Income Status		
Good	50	18.7
Middle	195	72.8
Bad	23	8.6
Employment situation		
Employed	164	61.2
Unemployed	104	38.8
Do you have epilepsy?		
Yes	34	12.7
No	234	87.3
Do you have any information about epilepsy?		
Yes	134	50.0
No	134	50.0
Is epilepsy contagious for you?		
Yes	18	6.7
No	250	93.3

Table 2. Results of the kaiser-meyer olkin measure of sampling adequacy and bartlett's test of sphericity

Test		Results	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.783	
Bartlett's Test	Approx. Chi-Square	1002.772	p<0.001
	df	91	
	Sig.	.000	

As a result of the Principal Components analysis performed in order to determine the factorial structure of The Public Attitudes Toward Epilepsy Scale, the rates of the explanation of the total variance by the items and the factors as well as the matrix related to the new factor loads, found after the "varimax rotation" to these factors were applied to these factors, are shown in Table 3.

It has been stated that the item-total correlation coefficient will determine the distinctiveness of the items by revealing the correlation between the item scores and total scores of the items in the scale (21). On the grounds that the item-total correlation coefficient of the scale determines the distinctiveness, the items with the value of 0.40 and over were determined as "very good", the items with the value of 0.30-0.40 as "good", the items with the value of 0.20-0.30 as "the items to be optimized" and the items with the value of 0.20 and less as "the items to be excluded" in terms of distinctiveness (22). As there was no item less than 0.20 after the item-total correlation coefficient calculated, the exclusion process was not performed. The fact that the item-total correlation values of the scale items were found between 0.483-0.824 was evaluated in the way that these values were very good in terms of distinctiveness (Table 3).

Table 3. Item-Total Score Correlation Coefficients, Factor Loadings, Alpha Coefficient of the PATE Scale, and the Variance Being Explained

SCALE		Item Factor Loads	Cronbach's Alpha	Item- Total Correlation	Mean±SD
Personal domain	1.	.623	.763	.623	2.71±1.0
	2.	.575	.773	.475	2.01±1.3
	3.[a]	.766	.764	.606	2.83±1.2
	5.[a]	.773	.792	.473	2.21±1.4
	7.[a]	.645	.763	.645	1.98±1.0
	Cronbach's Alpha	.701			
General domain	4.[a]	.656	.760	.656	2.46±1.2
	6.	.685	.758	.685	1.93±1.1
	8.[a]	.824	.778	.624	2.54±1.4
	9.	.759	.759	.659	1.98±1.2
	10.	.615	.768	.615	2.49±1.2
	11.	.656	.767	.556	2.67±1.2
	12.	.781	.756	.681	1.84±1.1
	13.	.610	.792	.410	2.66±1.2
	14.	.483	.775	.413	2.24±1.3
	Cronbach's Alpha	.823			
PATE Cronbach's Alpha			.783		
Kümütalif Variance = 51.72%					
Egenvalue=3.62					

Significant at *p< 0.05 and **p< 0.001.
a These items were reversely scored.

It is known that the higher the variance rates, the higher the factor structure of the scale and the variance rates ranging between 40% and 60% are accepted enough in the analysis performed in the social sciences (20). With the data obtained, the total variance of the Public Attitudes Toward Epilepsy Scale was determined as 51.72%. As a result of the results, it was determined that the items had a good distribution and they were consistent with the factors they were included in.

It is stated in the literature that when the scale reliability is 0.70 and over, this is enough to use the scale (23). As the alpha coefficient of the scale increases, it is composed of the items, that are consistent with each other and examine the components of the same characteristic or all the items function together, to that extent. In this study, the Cronbach's Alpha reliability coefficient was examined as an indicator of the internal consistency and homogeneity of the Public Attitudes Toward Epilepsy Scale and the General Domain subscale was determined as 0.823 and the Personal Domain subscale was determined as 0.701. It was observed that the internal consistency of The Public Attitudes Toward Epilepsy Scale was high and the scale had high reliability.

Confirmatory Factor Analysis (CFA)

With the explanatory factor analysis applied, it was determined that "The Public Attitudes Toward Epilepsy Scale" had a 2-factor structure. Then, in order to verify the factors, the confirmatory factor analysis was performed on the sample group where the data used for the explanatory factor analysis were collected. The maximum likelihood technique was used in this analysis without any limitation. Based on the model formed as a result of the confirmatory factor analysis, it was concluded that the data obtained verified the factors (Table 3).

DISCUSSION

In this study, the Turkish adaptation of The Public Attitudes Toward Epilepsy Scale developed by Lim et al., 25 and its psychometric characteristics were examined in a sample composed of Turkish people.

While the factor loads of the Personal Domain subscale items were found between .57 and .77, the factor loads of the General Domain subscale items were found between .48 and .82. As there was no item having a factor load under 0.30, no item was omitted from the scale. In the study performed by Lim et al., who developed the scale, in 2012, it was found that the factor loads of the Personal Domain subscale items were between .45 and .82 and the factor loads of the General Domain subscale items were between .49 and .86 (25). In the validity and reliability study conducted by Lim et al., in Malaysia in 2013, it was determined that while the factor loads of the Personal Domain subscale items were between .63 and .75, the factor loads of the General Domain subscale items were between .53 and .69 (26). In the validity and reliability study conducted by Lim et al., with the adults speaking Chinese, it was found that while the factor loads of the Personal Domain subscale items were between .57 and .84, the factor loads of the General Domain subscale items were between .49 and .66 (27). In the study conducted by Lim et al., to assess the attitudes of the high school and university students toward epilepsy, the factor loads of the Personal Domain subscale items were found between .52 and .72, the factor loads of the General Domain subscale items were found between .51 and .79 (28). In the validity and reliability study conducted by Yue et al. in China, it was determined that while the factor loads of the Personal Domain subscale items were between .70 and .88, the factor loads of the General Domain subscale items were between .69 and .84 (29). The results of the present study are compatible with the literature.

In the study, it was found that the Cronbach's Alpha of the Personal Domain subscale was .70, the Cronbach's Alpha of the General Domain subscale was .82 and total Cronbach's Alpha of the scale was .78. In the study by Lim et al., who developed the scale, it was determined that while the Cronbach's Alpha of the Personal Domain subscale was .63, the Cronbach's Alpha of the General Domain subscale was .86 (25). In the study conducted by Lim et al., with the adults over the age of 18 in Malaysia; the Cronbach's Alpha of the Personal Domain subscale was found as .71 and the Cronbach's Alpha of the General Domain subscale was found as .75 (26). In the validity study conducted by Lim et al., with the adults speaking Chinese; it was determined that while the Cronbach's Alpha of the Personal Domain subscale was .77, the Cronbach's Alpha of the General Domain subscale was .69 (27). In the study conducted by Lim et al., to assess the attitudes of the high school and university students towards epilepsy; it was found that the Cronbach's Alpha of the Personal Domain subscale was .62; whereas, the Cronbach's Alpha of the General Domain subscale was .81 (28). In the validity and reliability study conducted by Yue et al., in China; it was determined that the Cronbach's Alpha of the Personal Domain subscale was .85; whereas, the Cronbach's Alpha of the General Domain subscale was .90 (29).

Limitations and future implications

In this study, only individuals who applied to a family health center in Malatya were evaluated. Individuals living in other parts of the country may have different characteristics. Since the mother tongue of the researcher is Turkish, those who cannot speak Turkish (Kurdish patients and Syrian immigrant individuals) were not included in the survey. In addition, the majority of participants are university graduates. Further research is recommended to be carried out with larger participants and in different populations.

CONCLUSION

It may be asserted that this scale can be used safely for training the public in order to determine the public attitudes towards patients with epilepsy and accordingly develop positive attitudes. It may be recommended that the information test of the Public Attitudes Toward

Epilepsy Scale, which has been adapted into Turkish and whose validity and reliability study has been conducted, is applied to the larger groups representing different socio-economic levels and its invariance is researched and assessed.

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