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Developing two different measures for assessing knowledge of and attitudes toward epilepsy for the Turkish population

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Abstract

The aim of this study was to develop two new scales for assessing Turkish public's knowledge of epilepsy and attitudes toward it. A 26-item knowledge scale and a 15-item attitude scale were first developed and then tested using a random selection of adults aged $\geqslant 18$ $n = 613$) from different parts of Istanbul. After item and factor analyses of the knowledge scale, 10 items were omitted. Varimax rotation resulted in three underlying components that explained 35.7% of the variance. As a reliability assessment, the Kuder–Richardson-20 coefficient was 0.72. For the attitude scale one item was excluded after factor analyses. Varimax rotation revealed two underlying components that explained 46.31% of the variance. Cronbach's alpha was found to be 0.84. Additionally, it was found that subjects with more knowledge of epilepsy had more positive attitudes toward epilepsy ($r = .36$, $P < 0.01$).

Keywords: Epilepsy; Knowledge assessment; Attitude assessment; Scale development

1. Introduction

Epilepsy is a common neurological disorder that affects people of all races, ages, and genders. The incidence of epilepsy is approximately 10 in every 1000 of the general population in Turkey [1]. Thus, there are approximately 700,000 people with epilepsy (PWE) in Turkey. Although epilepsy is a very common neurological condition, it affects the lives of patients not only through its neurological symptoms, but also through negative social outcomes, for example, negative public attitudes, stigma, negative stereotypes, and social prejudice.

Many previous studies have been conducted in many other countries to determine the level of knowledge of epilepsy and the attitudes toward it [2–6]. Additionally, in some countries, studies aimed at detecting the changes in both knowledge and attitudes were conducted after national campaigns, for example, "Out of the Shadows" [7,8]. Moreover, it is well known that knowledge of epilepsy and attitudes toward it vary from one culture to another [9,10]. However, until the present study, research aimed at detecting either the level of knowledge of epilepsy or the attitudes toward it among the general public or patients with epilepsy in Turkey has not been conducted. Therefore, it is not possible to detect the changes in both knowledge and attitudes. Additionally, all the previous studies reflect the attitudes and knowledge levels of Western culture. Although having the characteristics of both Eastern and Western cultures because of its geographical position and history, Turkey has unique features resulting from the combination of many different cultures that have thrived or are now thriving in Anatolia. Therefore, the knowledge and attitude scales used to date in Western countries are not precisely suitable for Turkish people. The purpose of the present study, therefore, was to design and test two different valid and reliable instruments—one to measure the level of knowledge of epilepsy and one to assess the attitudes toward epilepsy of adults—to provide us with an understanding of what Turkish people know and how they feel about epilepsy.

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2. Methods

The items for both scales were developed in three phases: (1) formative research and concept development; (2) item development; (3) data collection, reliability, and validity assessment. Phase I included a literature review to obtain background information about knowledge of and attitudes toward epilepsy. Then, it was decided that the knowledge scale include items related to causes, symptoms, seizure manifestations, and outside interventions during a seizure. An attitude scale was created that reflects the tendency to evaluate epilepsy and PWE with some degree of favor or disfavor. After this process, certain items specific to Turkish cultural knowledge and epilepsy-related beliefs were also included in the scales.

In phase II, a preliminary list of items were compiled for both knowledge and attitude using their own definitions which were described above. Twenty-seven items related to knowledge and 16 items related to attitude were developed. To evaluate their content validity, readability, and clarity, the scales were evaluated by 4 academics and 10 volunteers. On the basis of these evaluations, one item from each scale was removed, and three items on the knowledge scale and two items on the attitude scale were reworded.

2.1. Description of the instruments

At this phase of the study the knowledge scale contained 26 items. Eighteen items assessed medical knowledge of epilepsy (e.g., causes and treatment of epilepsy, seizure triggers), five items were related to its social aspects (e.g., can have normal lives or can go to public schools), and three items were related to outside interventions during a seizure (e.g., presenting an onion to the patient, placing something into the patient's mouth during a seizure). Responses to the knowledge scale items were "true,", "false," and "don't know." The "don't know" response was added as an attempt to ameliorate the effects of guessing. In the scoring, only "true" responses were scored.

The attitude scale consisted of 15 items. Four items were related to respondents' cognitive beliefs about PWE, including limitations of PWE, characteristics of PWE, and feelings related to concealment of epilepsy. Five items assessed affective reactions (e.g., fear, shame, discomfort) to epilepsy and PWE. Finally, six items assessed respondents' feelings about being in social contact with PWE (e.g., discomfort working with someone who has epilepsy). Responses to the attitude scale items were "completely agree," "agree," "have no idea," "disagree," and "completely disagree." Responses were combined to create a 5-point Likert scale where higher scores indicate more positive attitudes toward epilepsy and PWE.

Additionally, to become familiarized with the subjects' demographics and their familiarity with epilepsy, certain questions were included on the cover page of the questionnaire, including: Have you ever heard or read about epilepsy? Do/did you know anyone with epilepsy?

2.2. Data collection, reliability, and validity assessments

Both knowledge and attitude scales were administered to 613 people aged $\geqslant 18$ years from different parts of Istanbul. Istanbul was selected as a study area because it has the highest population density in Turkey and also has the highest internal immigration ratio. The data were collected from different parts of the city to obtain data from different socio-economic levels.

After completion of the scales, all subjects received an information sheet covering the basics: causes of epilepsy, treatment methods, proper seizure interventions, and behavioral and cognitive characteristics of PWE.

3. Results

3.1. Demographic characteristics of the sample

Background characteristics of the sample indicated that about two-thirds of the participants were female (Table 1). Age ranged from 18 to 93 ($M = 34.9$, SD = 13.44). Nearly half of the participants were employed part-time or full-time. More than half of the participants (53.9%) were married. The sample consisted of 27.2% elementary school graduates, 45.1% high school graduates, 23.5% college and university graduates, and 4.2% with master's and doctoral degrees. Additionally, 44.3% of the sample came from a low, 39.5% from a middle, and 16.1% from a high economic level.

Table 1
Demographic characteristics of respondents

Sex	
Female	64.9%
Male	35.1%
Age	
18–35	57.4%
36–55	35.1%
56–93	7.5%
Education	
Elementary school	26.9%
High school	45%
College	23.6%
Master's/doctoral degree	4.5%
Occupational status	
Employed	46.2%
Unemployed	8.2%
Student	23.2%
Housewife	14.1%
Other	8.3%
Marital status	
Single	39.7%
Married	53.9%
Divorced/widowed	6.4%
Economic level	
Low	44.4%
Middle	39.5%
High	16.1%

Furthermore, 30.7% of the sample had previously never heard of epilepsy, 68.4% had never read anything related to it, and 58.4% do not/did not know anyone with epilepsy.

3.2. Psychometric properties of the knowledge scale

3.2.1. Item analysis

First, discrimination measurement of the items on the knowledge scale was carried out using point-biserial correlation (r_{pb}). This method is based on the correlation between the score of an item and the total score for all items (raw score). After the analyses, two items with r_{pb} scores <0.20 were omitted from the scale.

Second, as a measure of difficulty, P values were evaluated. The P value of any dichotomous item (true/false) is the fraction of persons tested who correctly answer the item. According to Nunnally's [11] guidelines, items with extreme P values, for example, below 0.20 or above 0.80, were rejected from the scale. The difficulty of items on