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Epilepsy education for future nurses: On knowledge, attitude and first aid approaches

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Abstract

Background & Objective: Nursing students will play an important role in providing care to epilepsy patients in the future. Epilepsy education is an important tool in improving knowledge, attitude and seizure first aid approaches. The purpose of this research was to assess the efficacy of the epilepsy training program. *Method:* This one-group pretest-posttest quasi-experimental study was conducted with 95 students studying at the Nursing Department of the Faculty of Health Sciences in Turkey between November 2022 and February 2023. The data of the study were collected with the first aid management form, The Epilepsy Knowledge Scale and The Epilepsy Attitude Scale. In this study, which included pretest and posttests, a three-session face-to-face epilepsy education programme based on epilepsy was applied. *Results:* In this research, it was shown that the results before and after education were statistically significantly different ($p<0.05$). The epilepsy knowledge scale score increased from 8.33±3.56 to 13.27±2.19, and the epilepsy attitude scale score increased from 59.70±7.67 to 62.96±6.02 after the training. The attitudes and knowledge of students about epilepsy were significantly correlated positively ($r=0.399$, $p<0.05$ before education, $r=0.403$, $p<0.05$ after education). The number of students who felt capable of seizure intervention increased significantly after the education ($p<0.05$).
Conclusion: The research revealed the beneficial effects of epilepsy education intervention applied to nursing students. In the future, awareness should continue to be promoted through epilepsy education programs, and accessibility to such programs should be increased.

Keywords: Attitude, epilepsy education program, knowledge, nursing students, seizure first aid

INTRODUCTION

Epilepsy is a neurological illness that affects people of all ages and is characterized by recurring seizures. Each patient with epilepsy requires special nursing care in the assessment, provision of necessary intervention, and treatment.[1] Epilepsy is a disorder that requires long-term treatment and surveillance. Because of this, nurses must possess the knowledge and abilities necessary to care for patients with epilepsy.[2] Since nurses or nursing students spend more time with patients due to their profession/education, they are more likely to encounter epilepsy patients compared to other healthcare professionals.[3] It is important that future health professionals, who are expected to be role models for society, are well-informed about epilepsy and have an appropriate attitude towards the disease.[4] Nursing students are expected to make quick assessments and wise decisions, put their theoretical knowledge and skills into practice, and make convenient interventions in situations requiring emergency intervention, such as epileptic seizures.[5] Some countries offer further professional training in epilepsy that is geared toward professionals with the intention of training "specialized epilepsy nurses". One of the most crucial methods for increasing epilepsy knowledge and eradicating stigma is education. Research on epilepsy education programs is not common.[6] Nursing education in Turkey is four years. Students attend theoretical courses in the first year, and clinical placement usually starts in the 2nd year. The fact that epilepsy-related courses are not part of the basic education in nursing curriculum programs may have a negative impact on students. This study aimed to assess the efficacy of an educational program implemented to improve nursing students' knowledge, attitudes, and seizure first-aid approaches regarding epilepsy.

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METHODS

Study design and participants

The "one-group pretest-posttest quasi-experimental design" was used to conduct this research. The population of the research consisted of 112 nursing students (pre-clinical) studying at the Faculty of Health Sciences in Turkey in the 2022-2023 academic year. This research aimed to reach the entire universe without choosing a sample. Participants who did not attend all sessions or did not perform the posttest were excluded from the research, and 95 volunteer students were recruited (participation rate 84.8%).

Data collection and instruments

Data were collected with a personal information form, first aid management information form (it was prepared in line with the literature and consisted of yes/no questions about epilepsy symptoms and first aid management)[7–9], Epilepsy Knowledge Level Scale, and Attitude Towards Epilepsy Scale.

Epilepsy Knowledge Scale is a Likert-type scale consisting of 16 items. The scale is scored between 0 and 16, and high scores indicate a high level of epilepsy knowledge. The Epilepsy Attitude Scale is a Likert-type scale consisting of 14 items. The scale is scored between 14 and 70, and higher scores indicate a more positive attitude towards epilepsy.[10,11] Questionnaires were applied in the pretest and posttest phases.

Intervention

The content of the training program was created based on the information published by the International League Against Epilepsy (ILAE)[12], and by reviewing the seizure first aid steps of national/international epilepsy organizations[13,14], expert opinions were taken. The usability of the training program was tested on a pilot group of 10 students. In the first interview with the volunteer students included in the study, the aim, importance and application process of the research were explained, and the pretest was applied. The epilepsy training program was conducted face-to-face in three sessions (each session was 40 minutes), the first two sessions before noon and the last session in the afternoon. The last 10 minutes of each session are devoted to the active discussion (the students were made active by directing the discussion with key questions, and they were enabled to express their opinions) with students to ensure effective and functional learning. All sessions were held on the same day to minimize the decrease in attendance rates for the training program. Because all three sessions required consistent participation. The training prepared as a PowerPoint presentation using audiovisual material was presented by the author. The first session included medical topics such as the definition, classification, diagnosis, and treatment of epilepsy. The second session included topics related to the social dimension of epilepsy (stigmatization, psychosocial issues, etc.). The third session includes seizure management, clinical symptoms of seizures, and emergency intervention (Figure 1). The same tests were administered to the group 10 days after the completed training sessions.

Data analysis

The statistical tool SPSS 22.0 was used to examine the study's data in a computer setting. The descriptive features of the students participating in the research were established with frequency and percentage analyses, and the scale was assessed using mean and standard deviation statistics. In order to establish if the research variables were normally distributed, values for kurtosis and skewness were examined. The relevant literature regards kurtosis skewness values of the variables between +1.5 and -1.5, +2.0, and -2.0 as a normal distribution.[15,16] The variables were found to have a normal distribution. Utilizing parametric methods, the data was examined. The change between knowledge and attitude scores before and after the training was analyzed using the dependent samples t-test. The change in categorical items before and after the training was analyzed using the McNemar test. The correlations between the scales were evaluated using Pearson Correlation analysis.

Ethical considerations

Ethical approval for this study (No: 2022-SBB-0466) was obtained from the organization where the study was carried out. After being informed about the study, the student's consent was obtained.

RESULTS

The mean age of 95 students was 18.96±1.20 years; 75.8% were women, and 23.2% of the students had witnessed an epileptic seizure previously (Table 1).

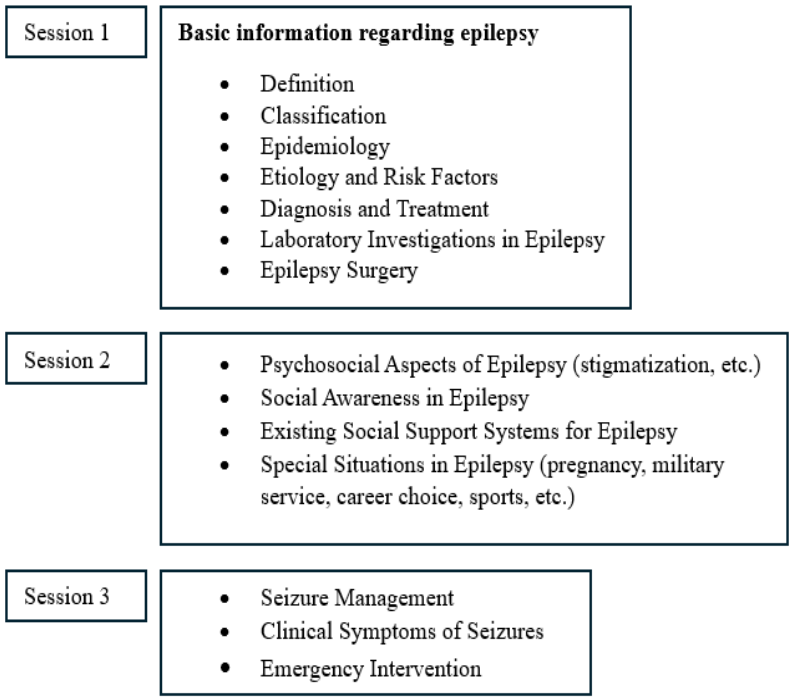

Figure 1. Content of the training program

Table 1: Descriptive characteristics of the students

Variable	n	%
Gender		
Male	23	24.2
Female	72	75.8
Hearing epilepsy status		
Yes	89	93.7
No	6	6.3
Recognizing someone diagnosed with epilepsy		
Yes	40	42.1
No	55	57.9
Witnessing an epileptic seizure		
Yes	22	23.2
No	73	76.8
Applying first aid for seizures to date		
Yes	7	7.4
No	88	92.6
Finding yourself competent in intervening seizures		
Yes	15	15.8
No	80	84.2

Table 2 shows the results regarding epilepsy symptoms and first aid management. It was determined that students could not associate some symptoms with seizures before the training. However, after the training, the knowledge of epilepsy symptoms improved significantly ($p<0.05$). After the training, the students were able to describe subtle features of epilepsy, such as confusion/orientation disorder (41.1%) and single-point gaze/eye fixation (76.8%).

When asked in which situations emergency aid (ambulance) should be sought, 42.1% of the students before the training answered, "As soon as the seizure begins, immediately", but none answered this after the training ($p=0.000$). The correct response rates of items such as "if the seizure lasts more than 5 minutes (from 40.0% to 90.5%; $p=0.000$)", "if the second seizure starts very soon after the first seizure ends (from 23.2% to 72.6%; $p=0.000$)" and "if the person is injured (from 24.2% to 70.5%; $p=0.000$)" increased after the training.

Table 3 demonstrates the proportion of accurate responses to the epilepsy knowledge scale. It was discovered that following the training, there was a considerable improvement in the percentage of students who correctly answered the questions on the epilepsy knowledge scale (except items 9 and

Table 2: Rates of correct answers to questions about epilepsy symptoms and first aid management

	Pretest		Posttest		p
	n	%	n	%	
Symptoms of an epileptic episode [a]					
Dizziness(T)	19	%20.0	33	%34.7	**p=0.017**
Excessive saliva secretion(T)	23	%24.2	63	%66.3	**p=0.000**
Confusion/orientation disorder(T)	26	%27.4	39	%41.1	**p=0.033**
Single point gaze/eye fixation(T)	20	%21.1	73	%76.8	**p=0.000**
Convulsions(uncontrolled shaking of arms and legs/trembling/rapid movements)(T)	78	%82.1	75	%78.9	p=0.357
Loss of bladder and/or bowel control (urinary/ fecal incontinence)(T)	6	%6.3	44	%46.3	**p=0.000**
What would you do if you witnessed a seizure? [a]					
Doing nothing(F)	1	%1.1	2	%2.1	p=0.500
Placing the person in a safe position(T)	45	%47.4	87	%91.6	**p=0.000**
Send to hospital immediately(F)	57	%60.0	23	%24.2	**p=0.000**
Giving the person something to drink(F)	2	%2.1	1	%1.1	p=0.500
Protecting one's head(T)	35	%36.8	76	%80.0	**p=0.000**
Asking for help(T)	28	%29.5	40	%42.1	**p=0.048**
Trying to stop the patient's movements(F)	14	%14.7	3	%3.2	**p=0.005**
Loosening tightening clothes(T)	24	%25.3	68	%71.6	**p=0.000**
In which cases it is necessary to get emergency assistance(ambulance)? [a]					
As soon as the seizure begins, immediately(F)	40	%42.1	0	%0.0	**p=0.000**
If the seizure lasts more than 5 minutes(T)	38	%40.0	86	%90.5	**p=0.000**
If the second seizure starts very soon after the first seizure ends(T)	22	%23.2	69	%72.6	**p=0.000**
If there is confusion lasting more than 10 minutes(T)	27	%28.4	41	%43.2	**p=0.024**
If the person is injured(T)	23	%24.2	67	%70.5	**p=0.000**

$\chi 2$=Chi-square Test.
[a]Multiple answers allowed. T:True, F:False.

11) ($p<0.05$).

Table 4 demonstrates the students' answers to the epilepsy attitude scale. Following the training, there was an increase in the number of students who indicated a good attitude for each item on the attitude scale.

There was a statistically significant increase in the posttest knowledge scale score ($\overline{x}$=13.274) as compared to the pretest score ($\overline{x}$=8.337, t=-15.418; $p=0.000<0.05$). The increase in the attitude scale posttest value ($\overline{x}$=62.968) compared to the attitude scale pretest value ($\overline{x}$=59.705) was found to be significant (t=-6.339; $p=0.000<0.05$) (Table 5).

Table 6 demonstrates the correlation between the students' pre- and post-training scores on the epilepsy knowledge scale and the attitude scale. Before and after the training, there was a substantial positive association between the Epilepsy Knowledge Scale (r=0.399, ($p<0.05$)) and the Attitude Epilepsy Scale (r=0.403, ($p<0.05$)). As the knowledge of the students increased, their attitudes towards epilepsy increased positively.

DISCUSSION

The present research was conducted to assess the impact of the epilepsy educational intervention. Existing lack of knowledge and misconceptions about epilepsy and seizure first aid is a significant risk for people with epilepsy. These risks can be reduced by ensuring that people who witness a seizure are informed about how to intervene.[7] A health professional expressed the diversity of seizures and the difficulty of learning about other types of seizures they had not encountered

Table 3: The percent of correct answers of students given to the questions of epilepsy knowledge level scale

	Pretest		Posttest		p
	n	%	n	%	
"Epilepsy has many different types.(T)"	33	%34.7	75	%78.9	**p=0.000**
"Most people with epilepsy can work.(T)"	56	%58.9	86	%90.5	**p=0.000**
"Most children with epilepsy can go to public schools.(T)"	59	%62.1	84	%88.4	**p=0.000**
"Patients with epilepsy can be dangerous to others during a seizure(F)"	48	%50.5	73	%76.8	**p=0.000**
"Some seizures may last for a matter of seconds(T)"	40	%42.1	80	%84.2	**p=0.000**
"For most patients with epilepsy, seizures can be controlled with drugs(T)"	47	%49.5	78	%82.1	**p=0.000**
"Brain surgery can be used to treat epilepsy in some cases(T)"	19	%20.0	53	%55.8	**p=0.000**
"Most people with epilepsy have normal intelligence(T)"	56	%58.9	86	%90.5	**p=0.000**
"Patients with epilepsy can be as successful at work as others(T)"	77	%81.1	85	%89.5	p=0.076
"An epileptic seizure is caused by abnormal function of the nerve cells in the brain(T)"	65	%68.4	89	%93.7	**p=0.000**
"Epilepsy is a kind of incurable disorder(F)"	35	%36.8	46	%48.4	p=0.071
"Inadequate sleep, stress, and taking alcohol can cause a seizure(T)"	70	%73.7	84	%88.4	**p=0.008**
"When you see a person having a seizure, you can stop the seizure by giving him/her an onion to smell(F)"	27	%28.4	85	%89.5	**p=0.000**
"Patients with epilepsy can lead normal lives(T)"	72	%75.8	84	%88.4	**p=0.018**
"Some kinds of seizures can be hardly noticed by others(T)"	42	%44.2	81	%85.3	**p=0.000**
"When you see a person having a seizure, you should spill water on his/her face to stop the seizure(F)"	46	%48.4	92	%96.8	**p=0.000**

McNemar Test

as follows: "I'm a nurse, and I'm still learning about what to do to help PWEs."[17] There is an important need to develop epilepsy education programs at regular intervals to reach all segments of society, primarily health professionals and students studying in the field of health.

Symptoms of epilepsy can vary greatly in different seizure types. For example, some patients have visible signs such as falling or tremors, while others have undetectable signs such as blank and unfocussed vision with no recollection of when it occurred.[17] In the study, after the training, the correct percentages in the content related to the recognition of seizure symptoms increased significantly. As in similar studies[18,19], "convulsions" was the most recognized symptom of epilepsy. It is important to know in which cases emergency help (ambulance) should be called (seizure lasting longer than 5 minutes, injury, etc.).[20] One of the important results of the study was that there were no students who answered that they would apply for emergency help "as soon as the seizure begins, immediately". These results showed that all nursing students learned in which situations emergency help should be requested.

It was discovered that the epilepsy knowledge and attitude scale scores increased with education. Another important result of this study was that there was a significant positive correlation between nursing students' knowledge and attitudes about epilepsy. More information was associated with

Table 4: Epilepsy Attitude Scale scores

	Pre-test		Post-test		p
	n	%	n	%	
"If I had epilepsy, I would hide it from my friends(D/CD)"	87	%95.6	91	%96.8	p=0.482
"I would stay away from a friend if I know she/he had epilepsy(D/CD)"	93	%100.0	94	%100.0	-
"I would date someone who has epilepsy(A/CA)"	51	%83.6	66	%88.0	p=0.312
"I would object to hiring someone who has epilepsy(D/CD)"	86	%97.7	90	%97.8	p=0.673
"I would be embarrassed if someone in my family had epilepsy(D/CD)"	92	%98.9	95	%100.0	p=0.495
"I would object to the marriage of my child with someone who has epilepsy(D/CD)"	76	%92.7	88	%100.0	**p=0.011**
"I would marry someone who has epilepsy(A/CA)"	56	%80.0	74	%93.7	**p=0.012**
"I would not trust a doctor with epilepsy, if I knew of his/her illness(D/CD)"	74	%88.1	77	%84.6	p=0.328
"I prefer to stay away from someone with epilepsy(D/CD)"	89	%98.9	95	%100.0	p=0.486
"Having epilepsy is something to be embarrassed about(D/CD)"	90	%97.8	94	%100.0	p=0.243
"I feel uncomfortable working with someone who has epilepsy(D/CD)"	91	%98.9	95	%100.0	p=0.492
"I feel comfortable with someone who has epilepsy(A/CA)"	53	%77.9	71	%87.7	p=0.087
"I think patients with epilepsy are frightening(D/CD)"	82	%100.0	91	%98.9	p=0.529
"I think people with epilepsy are not physically attractive(D/CD)"	83	%98.8	90	%100.0	p=0.483

McNemar Testi
A/CA:Agree or Completely agree, D/CD:Disagree or Completely disagree.

Table 5: Comparison of the score values of the scales before and after the training

	Pretest		Posttest		N	t	p
	$\overline{X}$	SD	$\overline{X}$	SD			
Epilepsy Knowledge Scale	8.337	3.563	13.274	2.195	95	-15.418	**0.000**
Epilepsy Attitude Scale	59.705	7.673	62.968	6.024	95	-6.339	**0.000**

Dependent Groups T-Test

Table 6: Correlation analysis results of the scales before and after the training

		Epilepsy Knowledge Scale Pretest	Epilepsy Knowledge Scale Posttest	Epilepsy Attitude Scale Pretest	Epilepsy Attitude Scale Posttest
Epilepsy Knowledge Scale Pretest	*r*	1.000			
	p	0.000			
Epilepsy Knowledge Scale Posttest	*r*	**0.497****	1.000		
	p	**0.000**	0.000		
Epilepsy Attitude Scale Pretest	*r*	**0.399****	**0.436****	1.000	
	p	**0.000**	**0.000**	0.000	
Epilepsy Attitude Scale Posttest	*r*	**0.242***	**0.403****	**0.757****	1.000
	p	**0.018**	**0.000**	**0.000**	0.000

*<0,05; **<0,01; Pearson Correlation Analysis

more favorable attitudes and supported our results in different cross-sectional studies in the literature.[2,21]

In studies evaluating the effects of the educational activity (medical students), significant improvements were observed in knowledge, attitudes, and perceptions about epilepsy[22–24] and the necessity of including epilepsy education in the curricula of various courses in the field of health was emphasized.[22] There are a limited number of studies on the effects of education on epileptic seizure management, knowledge, and attitude. It is thought that with the epilepsy awareness formed as a result of this education given in the first years of their education life, nursing students will be more likely to take the initiative to help a patient with a seizure and to participate in different epilepsy education programs in the future. This study clearly reveals the gains of nursing students who will be the health professionals of the future. The improvements in the knowledge and attitudes of nursing students who have a good learning experience are promising. Generalization of the study findings is limited because the study was conducted with pre-clinical nursing students in only one university. The data of the research were limited to the self-reports of the participants and the characteristics measured by the scales.

DISCLOSURE

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Conflict of interest: None

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