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Professional attitudes of pre-nursing students to the care of patients with epilepsy in Southeastern Turkey

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Abstract

Objective: This study was conducted to demonstrate whether nurse trainees are adequately prepared in terms of professionalism to provide quality care to patients with epilepsy. *Method:* The descriptive and cross-sectional study was conducted among first-year (n=104) and fourth-year (n=96) nursing students in a public university in eastern Turkey. Data were collected using the "Student Introduction Form", "Attitude Scale for Nursing Profession (ASNP)", "Epilepsy Knowledge Scale (EKS)", and "Epilepsy Attitude Scale (EAS)". Number, percentage, mean, standard deviation, minimum, maximum, Chi-square test, Whitney-U test, Kruskal-Wallis test, and Kruskal-Wallis Bonferroni test were used to evaluate the data. *Results:* There was no statistically significant difference between the mean scores of ASNP, EKS, and EAS total scores according to the years of the students (p>0.05). In fourth year students, female gender, knowing someone with epilepsy, having a mother/father/sister/sibling with epilepsy or self, and being involved in the treatment and care of a patient with epilepsy were associated with better attitudes towards the nursing profession, their level of knowledge about epilepsy and their attitudes towards individuals with epilepsy. In addition, ASNP total scores of the first-year and fourth-year students had positive and significant effects on the total scores of the EKS (r=0.379, p=0.000; r=0.311, p=0.004, respectively).
Conclusion: It was found that first and fourth-year nursing students in Southeastern Turkey had positive attitudes towards the nursing profession, moderate knowledge about epilepsy, and moderate attitudes towards people with epilepsy. In this context, students should be supported more in theoretical education and clinical practice.

Keywords: Epilepsy, knowledge, professional attitude, nursing students

INTRODUCTION

Epilepsy is a common chronic disorder that affects people of all ages across geographic, social, and racial lines.[1] Epilepsy prevalence rates are higher in low- and middle-income countries, and the prevalence of active epilepsy worldwide is estimated at approximately 51 million people.[1,2] A study in Turkey, a developing country, reported an epilepsy prevalence of 5.7-12.2 per 1000 population.[3] Issues related to the management of epilepsy vary from country to country due to cultural and economic factors. In addition, people with epilepsy face problems such as poor disease management, stigma, rights violations, discrimination, and inadequate care.[2,4]

Because epilepsy treatment requires long-term follow-up, healthcare professionals need to play a greater role in helping individuals adjust to the disease.[5,6] People with epilepsy require care throughout their lives. Therefore, health care providers should have sufficient knowledge, attitudes and behaviors to meet the needs of patients.[4-6] Nurses, as primary care providers, have a key role in providing the necessary education and support to people with epilepsy and in eliminating negative attitudes and prejudices.[4,5] Since nursing students are the future care providers in health care systems, it is important for them to acquire adequate knowledge, appropriate attitudes toward disease, and develop professional attitudes.[6,7] In a study conducted with Palestinian nursing students, it was reported that the nursing

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students were willing to destigmatize epilepsy and change the general public's perception.[8] Some studies in the literature have reported that healthcare professionals do not provide adequate information and professional support to caregivers of people with epilepsy.[7,9,10] Studies such as these indicate that nursing students should receive more information about epilepsy during their education. Therefore, it is important to evaluate the knowledge and attitudes of future nurses about epilepsy during their education and to identify appropriate strategies to correct negative attitudes.[5,7] The goal of nursing education is to educate students to achieve the required level of professional nursing competence before they enter the nursing profession. Throughout the nursing student's education, the process of developing attitudes toward the profession may change continuously.[11,12] In addition, nursing students who have positive and good attitudes toward the nursing profession may contribute to the management of epilepsy.

Determining the attitudes of nurse candidates toward the profession during the educational process will help predict the behaviours they will exhibit in the management of epilepsy. Considering that epilepsy can be life-threatening, it is important to determine whether prospective nurses have sufficient knowledge about epilepsy to provide physical and psychological care to patients based on their professional attitudes. Although there are studies on the knowledge and attitudes of nursing students about epilepsy, no study has been found in which they have been evaluated following their professional attitudes during the educational process. Therefore, this study was conducted to show whether pre-nursing students are sufficiently prepared in terms of professionalism to provide quality care to patients with epilepsy. To this end, answers were sought to the following questions:

- What is the level of knowledge and attitudes towards epilepsy and professional attitudes of first-year and fourth-year nursing students?

- Is there a difference in knowledge and attitudes towards epilepsy and professional attitudes between first-year and fourth-year nursing students?

- What are the factors that influence first-year and fourth-year nursing students' knowledge and attitudes toward epilepsy and their professional attitudes?

In this study, the "Epilepsy Knowledge Scale" and "Epilepsy Attitude Scale", valid and reliable tools, were used to assess the knowledge and attitudes of pre-nursing students toward epilepsy.[13] In addition to these scales, the Attitude Scale for the Nursing Profession[14] was also used to determine the adequacy of pre-nursing students' professional attitudes toward caring for patients with epilepsy.

METHODS

Study population

The study is descriptive and cross-sectional. The population of the study consisted of first-year (N=106) and fourth-year (N=98) nursing students studying nursing at a public university in the southeastern region of Turkey. The sample size of the study was calculated to be at least 134 students with a 95% confidence interval, a 5% margin of error, and 95% power. The researchers selected a portion of the population for the sample size, determined by the haphazard sampling method.[15] The study was conducted with a total of 200 students, 104 students in their first year and 96 students in their fourth year, representing 98.1% of the population. The study included first- or fourth-year nursing students who were open to communication and collaboration and who volunteered to participate in the study. Students were excluded from the study if they left the questions halfway through, had communication problems, or did not volunteer to participate. In addition, four students who enrolled in the course but were absent were excluded from the study.

Data collection tools

Student Introduction Form: The form was created by the researcher, based on the literature[4-6], and included questions about the sociodemographic characteristics of the students and epilepsy.

Attitude Scale for Nursing Profession (ASNP): It was developed by Çoban and Kaşıkçı (2011)[14] to determine attitudes towards the nursing profession. The scale is a five-point Likert-type scale (1 = strongly disagree and 5 = strongly agree). The scale consists of 40 items and three sub-dimensions, namely, Characteristics of the Nursing Profession (items 1-18), Preference for the Nursing Profession (items 19-31), and General Situation of the Nursing Profession (items 32-40). The scale has a minimum of 40 and a maximum of 200 points. In the scale, items 21, 23, 25, 26, 28, 30, 34 and 38 are reversed. As the score obtained from the scale increases, it

is assumed that the positive attitude towards the nursing profession increases. An ASNP score of 120 or higher indicates a positive attitude toward nursing. The following scores indicate a positive attitude towards the respective subdimension: Characteristics of the Nursing Profession ≥54 points, Preference for the Nursing Profession ≥39 points, and General Situation of the Nursing Profession ≥27 points.[14] The Cronbach alpha coefficient of the scale is 0.91. In this study, the Cronbach alpha coefficient was found to be 0.92.

Epilepsy Knowledge Scale (EKS): It was developed by Aydemir (2008)[13] to determine the level of knowledge about epilepsy. The scale has a 3-point Likert scale with the response options "true", "false" and "don't know". The "true" option was scored as "1 point", and the "false" and "don't know" options were scored as "0 points". Items 4, 11, 13, and 16 are scored in reverse. The total score ranges from 0 to 16, and the higher the score, the more knowledge about epilepsy is considered. While the Cronbach alpha coefficient of the EKS was 0.72[13], the Cronbach alpha coefficient in this study was 0.73.

Epilepsy Attitude Scale (EAS): The scale developed by Aydemir (2008) [13] to assess positive or negative attitudes towards epilepsy and people with epilepsy consists of 14 items on a 5-point Likert scale (1=strongly agree; 5=strongly disagree). The total score of the scale ranges from 14-70, with higher scores indicating more positive attitudes toward epilepsy. While the Cronbach alpha coefficient of the scale is 0.84[13], the Cronbach alpha coefficient in this study was 0.84.

Data collection

The data were collected in a face-to-face classroom setting between April and May 2024. Before the start of the course, the link prepared through Google Forms was shared with the students. Nursing students were asked to respond electronically (via e-mail, WhatsApp) before the start of the course (Fundamentals of Nursing course for first-year students and Public Health Nursing course for fourth-year students). In this way, students were prevented from receiving support from online resources or textbooks.

Data analysis

Statistical Package for the Social Sciences (SPSS) V.25 software was used for data analysis. The normal distribution of the data was assessed using skewness and kurtosis values. Descriptive statistical methods (number, percentage, median, minimum and maximum) were used to analyze the data. The Mann-Whitney U test and Chi-square test were used to compare the socio-demographic characteristics of students by school year, and the Mann-Whitney U test and Kruskal-Wallis test were used for within-group comparisons. The Mann-Whitney U test was used for the mean scores of the EKS Total, EAS Total, and ASNP Total, and the subscale scores according to the students' academic year. Spearman's correlation was chosen because the EKS Total, EAS Total, and ASNP Total scores did not fit the normal distribution. The Kruskal-Wallis Bonferroni test was used to find the group that made a difference in the between-group measures. Statistical significance was accepted as $p<0.05$.

Ethical aspects of the study

Approval to conduct the study was obtained from the Research Ethics Committee of a public university (number: 2024/91117). Informed consent was obtained from all students participating in the study. The study was conducted under the ethical standards of the Declaration of Helsinki.

RESULTS

Sociodemographic characteristics of students

The mean age of the first-year students was 20.86±3.87 years, and 51.0% were male. In the study, 69.2% of first-year students reported receiving information about epilepsy and 47.2% reported using the Internet as a source of information. Of the students, 57.7% reported knowing someone with epilepsy and 38.3% reported having a friend with epilepsy. In this study, 94.2% of first-year students reported that they had never been involved in the treatment and care of a patient with epilepsy. The mean age of the fourth-year students was 21.12±2.14 years and 55.2% were male. In this study, 78.1% of fourth-year students reported receiving information about epilepsy and 44% of them reported the Internet as a source of information. In the study, 60.5% of students reported knowing someone with epilepsy, and 55.2% reported having a mother/father/sibling with epilepsy. Of the students, 88.6% reported that they were involved in the treatment and care of a patient with epilepsy. No statistically significant difference ($p>0.05$) was found between the

socio-demographic characteristics of the students according to the classes they studied (Table 1). In this context, it can be said that the groups were homogeneous.

ASPN, EKS and EAS Mean Scores

The mean total EKS score of the first-year students who participated in the study was 8.02±3.25, while that of the fourth-year students was 11.09±3.42. In this study, the mean EAS total score of the first-year students was 33.68±9.67, while that of the fourth-year students was 35.25±9.67. The mean ASNP total score of first-year students was 140.98±25.92, while that of fourth-year students was 144.89±22.67. The sub-dimension with the highest mean score was " Characteristics of the Nursing Profession" (67.28±17.30 and 69.78±15.33, respectively). The lowest mean scale subscale score belonged to "General Situation of the Nursing Profession" (30.82±5.76 and 31.80±5.69, respectively). It was found that there was no statistically significant difference between the mean scores of EKS Total, EAS Total and ASNP Total and the subscale scores according to the year of the students (p>0.05) (Table 2).

Table 1: Distribution of socio-demographic characteristics of students by school year

	Year 1 (n=104)	**Year 4 (n=96)**
Socio-demographic characteristics	$\overline{X}$**±SD**	$\overline{X}$**±SD**
Mean Age	20.86±3.87	21.12±2.14
z/p	z=-0.312*, *p=0.576*	
	n (%)	**n (%)**
Sex		
Female	51(49.0)	43(44.8)
Male	53(51.0)	53(55.2)
χ^2/p	χ^2= 1.242**, *p=0.972*	
Previous knowledge of epilepsy		
Yes	72(69.2)	75(78.1)
No	32(30.8)	21(21.8)
χ^2/p	χ^2= 1.821**, *p=0.267*	
If yes, the source of information about epilepsy		
Magazine/Book	10(13.9)	5(6.7)
Internet	34(47.2)	33(44)
Undergraduate education	14(19.4)	20(26.6)
Health professionals	8(11.1)	11(14.7)
Seminar/Congress	6(8.3)	6(8)
χ^2/p	χ^2= 1.642**, *p=0.532*	
Knowing someone with epilepsy		
Yes	60(57.7)	58(60.5)
No	44(42.3)	38(39.5)
χ^2/p	χ^2= 0.110**, *p=0.741*	
If yes, the person with epilepsy		
Relative	20(33.3)	14(24.1)
Mother/Father/Sibling/Self	17(28.3)	12(20.6)
Friend	23(38.3)	32(55.2)
χ^2/p	χ^2= 3.855**, *p=0.571*	
Involvement in the treatment and care of a patient with epilepsy		
Yes	6(5.8)	85(88.6)
No	98(94.2)	11(11.4)
χ^2/p	χ^2= 2.939**, *p=0.086*	

*Whitney-U Test z value, ** Chi-Square test

Table 2: Comparison of the total and subscale mean scores of the scales according to the school year of the students

Scales	Year 1 (n=104)		Year 4 (n=96)		Test value	
	$\overline{X}$±SD	Median (Min±Max)	$\overline{X}$±SD	Median (Min±Max)	MU	p
EKS Total	8.02±3.25	8.00(3.00-15.00)	11.09±3.42	11.00(3.00-14.00)	-0.173	*0.862*
EAS Total	33.68±9.67	33.00(14.00-57.00)	35.25±9.07	35.00(14.00-64.00)	-0.116	*0.907*
ASNP Total	140.98±25.92	144.00(65.00-182.00)	144.89±22.67	150.00(95.00-184.00)	-0.052	0.958
Characteristics of the Nursing Profession	67.28±17.30	71.00(18.00-90.00)	69.78±15.33	73.00(36.00-90.00)	-0.106	0.916
Preference for the Nursing Profession	42.88±7.23	43.00(25.00-56.00)	43.30±6.91	43.00(29.00-59.00)	-0.621	0.535
General Situation of the Nursing Profession	30.82±5.76	32.00(17.00-42.00	31.80±5.69	32.00(18.00-43.00)	-1.129	0.259

Note: MU: Mann Whitney U test, EKS: Epilepsy Knowledge Scale, EAS: Epilepsy Attitude Scale, ASNP: Attitude Scale for Nursing Profession

Comparison of sociodemographic characteristics and ASNP, EKS, EAS scores

Comparison of sociodemographic characteristics and ASNP, EKS, EAS scores

Table 3 shows the median scores of first-and fourth-year students according to their socio-demographic characteristics in EKS Total, EAS Total, and ASNP Total. The median EAS Total and ASNP Total scores of the female students in the fourth year were higher than those of the male students (z=-2.546, p=0.022; z=-2.091, p=0.037). Among the fourth-year students, the median EKS Total, EAS Total, and ASNP Total scores of students who knew someone with epilepsy were higher than those who did not (z=-2.068, p=0.020; z=-2.150, p=0.050; z=-2.130, p=0.033). The median EAS Total and ASNP Total scores of fourth-year students who had a mother/father/sister/sibling with epilepsy or self were higher than those who had a friend (p=0.024; p=0.032). In the fourth year, students who were involved in the care and treatment of a patient with epilepsy had higher mean scores for EKS Total, EAS Total, and ASNP Total than those who were not (p=0.019; p=0.015; p=0.030). There was no statistically significant difference between the mean scores of EKS Total, EAS Total and ASNP Total according to other socio-demographic characteristics such as, previous knowledge about epilepsy and source of knowledge about epilepsy of all students (p>0.05).

The relationship between ASNP, EKS, and EAS scores

Table 4 shows the relationship between the mean scores of the scales according to the years of the students. It was found that there was a positive and moderately significant relationship between the mean scores of ASNP Total and EKS Total of the first-year students (rho:0.379*, p=0.000). A weakly significant negative relationship was found between the mean scores of EAS Total and ASNP Total (rho: -0.223*, p: 0.023). The study found a moderately significant positive correlation between the mean ASNP Total and EKS Total scores of the fourth-year students (rho :0.311*, p: 0.004) (Table 4).

DISCUSSION

Considering that nursing has serious responsibilities such as protection and promotion of health and improvement of health in case of illness, it is important in the management of epilepsy to determine the awareness of nursing students, who are the health professionals of the future, about epilepsy and the extent to which this awareness is reflected in their professional attitudes. In the present study, it was observed that as the attitudes of first and fourth-year nursing students towards the nursing profession increased, their level of knowledge about epilepsy increased, and they developed positive attitudes.

Table 3: Comparison of the scale total scores based on median scores according to the socio-demographic characteristics of the students

	Year 1 (n=104)			Year 4 (n=96)		
Socio-demographic Characteristics	**EKS Total Median (Min±Max)**	**EAS Total Median (Min±Max)**	**ASNP Total Median (Min±Max)**	**EKS Total Median (Min±Max)**	**EAS Total Median (Min±Max)**	**ASNP Total Median (Min±Max)**
Gender						
Female	10.00(4.00-15.00)	34.00(20.00-54.00)	153.00(108.00(184.00)	9.00(3.00-14.00)	35.00(14.00-64.00)	152.00(74.00-181.00)
Male	8.00(3.00-15.00)	33.00(14.00-57.00)	144.00(95.00-184.00)	10.00(4.00-14.00)	33.00(14.00-56.00)	137.00(65.00-182.00)
z/p	z=-0.817, *p=0.414**	z=-0.631, *p=0.528**	z=-1.216, *p=0.224**	z=-0.101, *p=0.920**	z=-2.546, ***p=0.022****	z=-2.091, ***p=0.037****
Previous knowledge of epilepsy						
Yes	9.50(4.00-15.00)	32.50(14.00-56.00)	144.00(65.00-182.00)	10.00(3.00-14.00)	33.00(14.00-64.00)	152.50(108.00-184.00)
No	8.50(3.00-14.00)	39.00(20.00-57.00)	150.00(74.00-174.00)	11.00(4.00-14.00)	36.00(14.00-56.00)	142.00(95.00-176.00)
z/p	z=-1.197, *p=0.231**	z=-1.530, *p=0.126**	z=-0.261, *p=0.794**	z=-0.777, *p=0.437**	z=-1.103, *p=0.270**	z=-1.562, *p=0.118**
If yes, the source of information about epilepsy						
Magazine/Book	9.00(4.00-15.00)	34.50(14.00-56.00)	144.50(114.00-180.00)	4.00(3.00-11.00)	36.00(19.00-45.00)	155.00(118.00-168.00)
Internet	10.00(4.00-14.00)	32.50(14.00-54.00)	144.00(72.00-175.00)	10.00(4.00-14.00)	33.00(28.00-64.00)	161.00(116.00-184.00)
Undergraduate education	9.00(4.00-14.00)	32.00(14.00-49.00)	144.00(102.00-181.00)	9.50(4.00-14.00)	32.00(14.00-47.00)	149.50(108.00-184.00)
Health professionals	11.00(4.00-15.00)	32.00(14.00-51.00)	141.00(65.00-171.00)	10.00(4.00-13.00)	31.00(26.00-47.00)	152.00(110.00-168.00)
Seminar/Congress	9.50(6.00-13.00)	33.50(26.00-41.00)	138.50(110.00-182.00)	10.00(3.00-14.00)	33.00(19.00-43.00)	152.00(118.00-167.00)
$\chi 2$/p	$\chi 2$=1.241, *p=0.871***	$\chi 2$=2.681,*p=0.613***	$\chi 2$=1.104, *p=0.894***	$\chi 2$=3.522, *p=0.475***	$\chi 2$=2.040, *p=0.728***	$\chi 2$=1.918, *p=0.751***
Knowing someone with epilepsy						
Yes	9.00(3.00-15.00)	33.00(14.00-56.00)	144.00(65.00-180.00)	10.00(4.00-14.00)	35.00(14.00-56.00)	154.00(95.00-184.00)
No	10.00(4.00-15.00)	34.00(16.00-57.00)	145.50(72.00-182.00)	8.00(3.00-14.00)	32.00(14.00-56.00)	144.00(96.00-180.00)
z/p	z=-0.132, *p=0.895**	z=-0.145, *p=0.885**	z=-0.408, *p=0.683**	z=-2.068, ***p=0.020****	z=-2.150, ***p=0.050****	z=-2.130, ***p=0.033****
If yes, the person with epilepsy						
Relative	10.00(4.00-15.00)	34.00(16.00-57.00)	145.00(72.00-182.00)	9.00(4.00-10.00)	35.50(14.00-56.00)	147.00(96.00-178.00)
Mother/Father/Sibling/ Self	10.00(4.00-14.00)	34.00(14.00-54.00)	130.50(114.00-158.00)	8.00(4.00-14.00)	37.00(14.00-47.00)	153.00(95.00-184.00)
Friend	9.00(3.00-15.00)	33.00(14.00-57.00)	134.00(114.00-154.00)	10.00(3.00-14.00)	33.50(28.00-53.00)	124.00(123.00-154.00)
$\chi 2$/p	$\chi 2$=3.741, *p=0.587***	$\chi 2$=4.810,*p=0.440***	$\chi 2$=5.993, *p=0.307***	$\chi 2$=7.635, *p=0.139***	$\chi 2$=10.995, ***p=0.024****	$\chi 2$=11.709, ***p=0.032****
Involvement in the treatment and care of a patient with epilepsy						
Yes	9.00(4.00-13.00)	36.00(32.00-56.00)	148.50(123.00-180.00)	11.00(4.00-15.00)	34.00(14.00-47.00)	150.00(135.00-181.00)
No	10.00(3.00-14.00)	33.00(14.00-57.00)	149.00(95.00-184.00)	9.00(3.00-15.00)	31.00(14.00-47.00)	144.00(65.00-182.00)
z/p	z=-0.911, *p=0.362**	z=-1.144, *p=0.252**	z=-0.802, *p=0.423**	z=-2.153, ***p=0.019****	z=-2.327, ***p=0.015****	z=-2.200, ***p=0.030****

*Whitney -U test z value, **Kruskal Wallis test , EKS: Epilepsy Knowledge Scale, EAS: Epilepsy Attitude Scale, ASNP: Attitude Scale for Nursing Profession
Bold characters indicate p<0.05 Values are presented as median.

Table 4: The relationship between the mean scale scores of the students according to school year

Scales	Year 1			Year 4		
	1	2	3	1	2	3
	rho, p	rho, p	rho, p	rho, p	rho, p	rho, p
EKS Total (1)	-	0.044, *0.658**	0.379,***0.000****	-	0.120,*0.273**	0.311, ***0.004****
EAS Total (2)	0.044, *0.658**	-	-0.223,***0.023****	0.120,*0.273**	-	-0.165, *0.132**
ASNP Total (3)	0.379, ***0.000****	-0.223, ***0.023****	-	0.311, ***0.004****	-0.165, *0.132**	-

* rho: Spearman correlation analysis test, EKS: Epilepsy Knowledge Scale, EAS: Epilepsy Attitude Scale, ASNP: Attitude Scale for Nursing Profession, Bold characters indicate p<0.05

In the current study, the rate at which nursing students received information about epilepsy seemed to increase over time. The rate of using the Internet as a primary source of information, which was observed in the first year, decreased in the fourth year. This seems to be because the students take courses from educators as their primary source of information during their undergraduate education. A previous study conducted by Özer *et al*. in 2023 in three provinces of Turkey found that nursing students had a moderate level of knowledge about epilepsy. However, both their knowledge and attitudes improved positively as they progressed through their years of education.[6] In Ünsar *et al*.'s (2020) study of second, third, and fourth year nursing students, the students most frequently cited school courses and their instructors as sources of information.[4] Similarly, this study observes that students tend to use formal sources of information instead of informal sources (Internet, etc.) as their years of education increase.

The study found that while first-year nursing students reported not participating in the care and treatment of a patient with epilepsy, the rate of participation in the care and treatment of a patient with epilepsy increased significantly in the fourth year. Other studies reported that the rate of non-participation by all level of the nursing students in the care and treatment of a person with epilepsy was reported to be high.[4,5] In this study, the comparison of the students at the beginning and at the end of their education showed that the involvement of the students in epilepsy care increased with the years of education. It was observed that the majority of nursing students knew an individual with epilepsy, and this person was usually a relative or family member. This finding is consistent with the results of similar studies conducted in Turkey.[4,6,11] Additionally, a study conducted among midwifery students, who are educated with a curriculum similar to nursing in Turkey, also emphasized that individuals diagnosed with epilepsy in their surroundings were mostly relatives.[16] In our study, in particular, the fact that students reported knowing someone with epilepsy as a first-degree relative demonstrates the need to assess epilepsy in terms of environmental factors in the geography in which the study was conducted.

In this study, students had moderate knowledge about epilepsy and attitudes toward epilepsy, but positive attitudes toward the profession. There was also an increase in the scores of students' knowledge and attitudes toward epilepsy and attitudes toward the nursing profession in the successive years of education. Different studies in Turkey showed a low to moderate level of knowledge about epilepsy, but the attitude towards the profession was mostly positive.[4,5,6,9,11,17] Cultural norms might have an influence over professionalism, similar to the studies in Nigeria and China, which showed health students had negative attitudes toward epilepsy in their study.[18,19] Furthermore, when students' professional attitudes were assessed, Koushari *et al*. (2012) reported that one-third of nursing students and clinicians had neutral or negative attitudes toward their profession.[20] A study of undergraduate nursing students found that students' attitudes toward the nursing profession were positive, but their perceptions of the profession were negative.[21] Several studies show that nursing students have positive attitudes toward the profession.[11,22] It is stated that during their education, nursing students' perceptions change from an idealistic and empathetic approach to a more professional approach that focuses on knowledge, skills, and role development.[23] In this direction, it is expected that nursing students' attitudes towards the profession will be positively influenced by their educational processes, personal characteristics, and professional behaviours.

In the study, demographic factors of first-year nursing students did not make a difference in their

knowledge and attitudes toward epilepsy and professional attitudes. Among fourth-year nursing students, women and those with a first-degree relative with epilepsy had higher attitudes toward epilepsy and professional attitudes. In addition, students who are involved in the treatment and care of a patient diagnosed with epilepsy have better knowledge and attitudes toward epilepsy and the nursing profession. A study conducted in Germany found deficiencies in knowledge and attitudes toward epilepsy among first- and second-year university students.[24] This finding supports the fact that first-year nursing students in the study had lower knowledge and attitudes about epilepsy than fourth-year students. In a study of nurses, those working in neurology and epilepsy centres were found to have higher knowledge and awareness of epilepsy.[25] This finding supports the results of our study and shows that nurses in contact with epilepsy patients exhibit more positive behaviours. Compatible to other studies in the literature[4,5,8], increasing years of academic education of students were associated with higher knowledge level and positive attitude towards epilepsy, which supports the importance of the difference between first and fourth-year students in the study. Especially as students gain experience, it is believed that applying the information in a real-world environment will ensure lasting learning. In addition, it is believed that the frequency of providing care to epilepsy patients in clinical settings increased as the students' years of education progressed, which was reflected in their attitudes and knowledge levels.

As the attitudes of first and fourth-year nursing students towards the nursing profession increased, their level of knowledge about epilepsy increased. While first-year students' attitudes towards epilepsy and professional attitudes were related, this relationship was not observed in fourth-year students, although their attitude scores were higher. Similarly[4,5,18,19,24] knowledge was shown to be associated with attitude towards epilepsy. Karadağ *et al* (2015) stated that nursing students' professional attitudes can increase during their education.[26] In this direction, it is seen that students' knowledge, skills, and attitudes change during the educational process. Students gain a more realistic perception of nursing in this process.

This study has several limitations. First, the data may not be representative of all Turkish nursing students because it was conducted cross-sectionally with nursing students from a university in eastern Turkey. Second, due to the nature of the research, no cause-and-effect relationship was established. Third, since the data is based on self-report, the reliability of the data is limited to the accuracy of the answers of the participants who participated in the study.

In conclusion, in this study, first and fourth-year nursing students' attitudes toward the profession were positive. They also had a moderate level of knowledge and attitudes toward epilepsy, which improved in the successive years of education. The improvement in students' professional attitudes was positively reflected in their knowledge and attitudes towards epilepsy. Although the study shows that nursing students are capable of caring for patients with epilepsy, it shows that students need more support in theoretical and clinical applications. Increasing professionalism, which is an important parameter in improving the quality of patient care, is expected to have a positive impact on students' epilepsy management. Therefore, identifying the factors that positively or negatively influence the educational process in terms of improving professional attitudes and developing appropriate strategies will contribute to the care and treatment of epilepsy. Future research may longitudinally evaluate the development of students' knowledge and attitudes towards epilepsy in the direction of professional attitudes. In addition, these studies may consider combining student learning outcomes and objective measures of these learning outcomes for epilepsy.

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DISCLOSURE

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