

Examination of nursing students' attitudes towards environmental problems

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A- Conception and study design; **B** - Collection of data; **C** - Data analysis; **D** - Writing the paper; **E**- Review article; **F** - Approval of the final version of the article

ABSTRACT

Purpose: The study was directed towards examination of nursing students' attitudes towards environmental problems.

Materials and methods: This descriptive study was performed from June to August 2014 with 296 first-fourth year nursing students from one nursing faculty located in Izmir. The data of the study were collected through conducting face-to-face interviews by using Socio-Demographic Characteristics Form and Environmental Problems Attitude Scale. Descriptive statistics, chi-square test, Cronbach alpha, t-test and Mann Whitney U test were used in the data analysis.

Results: Mean age of the students was 21.16±2.28 years. The fourth year students had higher scores

for their attitudes to environmental problems. Female students, students taking a course about the environment before university, students becoming a member of environmental organizations had significantly higher scores for their attitudes to environmental issues.

Conclusions: This study suggests that attitudes of students towards environmental problems can improve only after they are offered an effective education. Therefore, Syllabi should be designed to include environmental problems to increase knowledge and awareness of students and to acquire a positive attitude.

Keywords: Nursing students, attitudes towards environmental, environmental problems

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INTRODUCTION

At present, high living standards and rapid population growth have increased damage to natural resources [1]. Rapidly developing technology, climate changes, thinning ozone layer, global warming, increased temperatures, melting icebergs, storms and changes in the natural flora in addition to industrialization attempts increasing especially since the second half of the 20th century and lack of public awareness and education about its effects result in environmental problems. These problems threaten all countries on the earth now [2-5].

In a study performed in 24 countries including Turkey, one of the biggest problems encountered was found to be environmental issues and these problems were considered as extremely serious in 12 countries [6].

Awareness about environmental problems is gradually increasing worldwide. Many national and international meetings and discussions are held to find the best solution to them. Although many policies and regulations have been adopted for environmental sustainability, they cannot be put into practice and a wide variety of environmental problems are encountered [7].

At present, only technology or only regulations do not seem to help solve these problems. Changes in habits and behavior can make it possible to eliminate the problems [8]. So that human beings can live in a healthier and safer environment, they should acquire necessary knowledge and skills. If they have increased awareness and fulfill their responsibilities, environmental problems will decrease [9,10].

Therefore, it is thought that continuous, high-quality education with well-defined objectives will help to enhance knowledge, attitudes and behavior and to solve environmental problems [11].

School education is one of the best tools to transfer sufficient knowledge and to have young generations, especially students understand the value of the environment. All schools, especially universities are important organizations which contribute to development of the society. Therefore, they have an important responsibility for creation of social and environmental awareness.

In cooperation with various civil organizations, universities should raise awareness of students about environmental problems to help them adopt positive attitudes towards the environment [12]. Evidence from research has indicated that knowledge of students about the environment should be enhanced since it will help them to develop positive attitudes to the environment [2,7]. However, at many universities, there are no sufficient attempts to create favorable attitudes and to protect the environment [2]. Better environmental health nursing services and better

coordination of research and education should be provided to eliminate emerging environmental health problems [13].

Studies performed in Turkey have shown that nursing students have a moderate degree of sensitivity to the environment [14,15].

Güven and Aydogdu found that university students did not have appropriate behavior concerning the environment and environmental problems [11].

In a study by Cinar et al. attitudes of university students towards many environmental issues were nearly at a desirable level, but they did not have sufficient awareness about some factors considered as environmental risk [16].

In another study on nursing students, gender, year of study and education about the environment were found to influence environmental awareness [14].

Several studies have revealed that gender, parental education, income and place of living do not affect behavior related to the environment, but that students from different years of study significantly differed in their behavior [12,17].

Cetin and Nisanci showed that education offered to high schools to increase environmental awareness were considerably effective [15].

Bahar and Aydogdu have emphasized that taking account of gradually worsening environmental conditions, nurses should diagnose environmental health risks at schools, home and workplaces by using the right, modern sources, raise awareness of individuals, families and the society about environmental health risks and defend environment friendly policies to maintain environmental health. They underlined that education, research and practice should focus on the abovementioned issues to improve environmental health [18].

Although there have been many studies about effects of the environment on human health, only a few of them have been conducted by nurses. The most effective way to solve environmental problems is to raise individuals having awareness of and sensitivity to the environment. So that individuals can have positive attitudes to the environment, it is necessary to equip them with appropriate knowledge and to change their behavior. Nursing students contact with many people from different social classes both during their practicums and after their graduation. Having sensitivity to environmental health will contribute to behavioral changes in individuals. This indicates the role of education to be offered in solving and preventing environmental problems. The aim of this study was to examine nursing students' attitudes towards environmental problems. Obtained results will provide guidance for improvements to be made in curricula of undergraduate nursing programs.

MATERIALS AND METHODS

Participants and setting

The population of this descriptive study included 380 first and fourth year nursing students at Dokuz Eylül University (N=380). No sampling methods were used and all nursing students accepting to participate in the study were contacted. However, since some students were unavailable when data were collected and declined to take part in the study, the sample comprised of 296 students. The response rate was 77.9%.

Variables of the study

Dependent variables of the study were scores for Environmental Problems Attitude Scale (EPAS) and its subscales. Independent variables of the study were year of study, gender, talking to friends about environmental issues, taking courses about the environment before and during university and being a member of environmental organizations.

Data collection

The data was collected from June to August 2014 from first and fourth year nursing students at Dokuz Eylül University. The data of the study were collected through conducting face-to-face interviews. Data about descriptive characteristics of the students were collected with Socio-Demographic Characteristics Form, developed by the researchers in light of the literature, and EPAS, developed by Güven [3]. Before began collecting data, researchers had received information about the number of students in the first and last grade, the number of course hours, and the teaching staff responsible for the course from student affairs of the nursing faculty. Later, the responsible lecturers of the related courses were informed about the research and permission was given to collect and distribute the data collection forms to the students just before the lesson started. Also, researchers have been informed that participation in the research is based on volunteerism. The students completed the questionnaires without naming the questionnaire. It took about 20 minutes to respond to your scale.

Instruments

Socio-demographic characteristics form:

The form was composed of questions about age, gender, marital status, type of family, income, parental education, interest in environmental issues, talking to friends about environmental issues, taking a course about the environment before and during university education, being a member of and active participation in environmental organizations.

EPAS: It was developed by Güven (2013) to evaluate students' attitudes towards environmental problems. It is composed of five factors and 45 items. The first factor is called reacting and involves the items 1, 4, 10, 11, 17, 22, 23, 24, 25, 30, 32, 35, 37, 38, 40, 43 and 45. The second factor is called getting organized and involves the items 13, 15, 16, 20, 26, 27, 31, 33, 34, 41 and 44. The third factor is called reception and involves the items 9, 14, 49 and 39. The fourth factor is called appreciating and involves the items 5, 19, 21, 28 and 42. The last factor is called incorporating into the personality. EPAS is a three-point Likert scale; 0 corresponds to "disagree", 1 corresponds to "have not decided yet" and 2 corresponds to "agree". Negative items are scored in the reverse order. The lowest and the highest scores to be obtained are 0 and 90 respectively. Cronbach alpha was .88 and Kaiser Meier Olkin value was .77 for the original scale. Cronbach alpha was .93 for the factor reacting, .90 for the factor getting organized, .68 for the factor reception, .75 for the factor appreciating and .59 for the factor incorporating into the personality [3]. In the present study, Cronbach alpha was found to be .83 for the scale.

Data analysis

Data were analyzed with Statistical Package Program for Social Sciences 20.0 and evaluated with numbers, percentages, Chi-square test, Cronbach alpha, t-test and Mann Whitney U test. The confidence interval was 95% and the statistical significance was set at $p < 0.05$.

Ethical considerations

Approval was obtained from the dean of Nursing Faculty and Ethical Committee of Non-Interventional Clinical Research at Dokuz Eylül University [protocol no. 1557-GOA, decision no. 2014/22-07 and dated 19.06.2014). All the first-year and the fourth-year students were given information about the study and those included into the sample gave written informed consent. Permission was obtained through from the researcher Ezgi GUVEN, who developed EPAS, to be able to use it in the present study.

RESULTS

The mean age of the nursing students was 21.16 ± 2.28 years. Eighty-three point four percent of the students was female, 63.2% of the students was first-year students, 48.3% of the students lived in a city during most of their life and 88.5% had a nuclear family. Mothers of 43.6% of the students and fathers of 37.8% of the students were primary

school graduates. Sixty-three point nine percent of the students had a poor family income. Ninety-two point nine percent of the students talked about environmental issues with their friends and 96.3% of the students were interested in environmental issues. Fifty-eight point one percent of the students and 71.3% of the students did not take any courses about the environment before and during their university education respectively. Seventy-eight percent of the students considered doing an environmental course unnecessary, 91.9% of the students was not a member of an environmental organization and 91.6% of the students did not get involved in any environmental activities (Table 1). The mean age of the nursing students was 21.16±2.28 years. Eighty-three point four percent of

the students was female, 63.2% of the students was first-year students. Ninety-two point nine percent of the students talked about environmental issues with their friends and 96.3% of the students were interested in environmental issues.

Fifty-eight point one percent of the students and 71.3% of the students did not take any courses about the environment before and during their university education respectively. Seventy-eight percent of the students considered doing an environmental course unnecessary, 91.9% of the students was not a member of an environmental organization and 91.6% of the students did not get involved in any environmental activities (Table 1).

Table 1. Socio-demographic Features of the Nursing Students (n=296)

Features	n	%
Gender		
Female	247	83.4
Male	49	16.6
Age		
20 years old and younger	153	51.7
21 years old and older	143	48.3
Year of Study		
First Year	187	63.2
Fourth year	109	36.8
Place of residence		
City	143	48.3
Small town	115	38.9
Village	38	12.8
Family income		
Low	189	63.9
Moderate	69	23.3
High	38	12.8
Talking to friends about environmental issues		
Yes	275	92.9
No	21	7.1
Interest in environmental issues		
Yes	285	96.3
No	11	3.7
Receiving environmental education before university		
Yes	124	41.9
No	172	58.1
Receiving environmental courses at university		
Yes	85	28.7
No	211	71.3
Necessity to receive environmental courses at university		
Yes	231	78
No	65	22
Member of environmental organizations		
Yes	24	8.1
No	272	91.9
Participation in environmentalist activities		
Yes	25	8.4
No	271	91.6

The first-year students got a lower mean score for PAS (\bar{X} =65.80±10.25) than the fourth-year students (\bar{X} =68.19±10.02) without a significant difference (t:-1.902, p>0.05). The fourth-year students had a higher score for all the subscales, but only the mean score for the subscale incorporating into the personality significantly differed between the fourth-year and the first-year students (p<0.05) (Table 2).

The first-year students got a lower mean score for EPAS than the fourth-year students without a significant difference (t:-1.902, p>0.05). The fourth-year students had a higher score for all the subscales, but only the mean score for the subscale incorporating into the personality significantly differed between the fourth-year and the first-year students (p<0.05) (Table 2).

Table 2. The distribution of nursing students’ mean scores for EPAS according to year of study (n=296)

Subscales	Year of study	n	Mean	SD	Test	p
Reception	First year	187	12.71	2.66	t: -1.366	0.17
	Fourth year	109	13.14	2.51		
Reacting	First year	187	26.90	4.86	t:-1.699	0.09
	Fourth year	109	27.85	4.22		
Appreciating	First year	187	5.58	1.43	t:-.025	0.98
	Fourth year	109	5.58	1.40		
Getting organized	First year	187	14.01	3.93	t:-.674	0.50
	Fourth year	109	14.33	4.06		
Incorporating into the personality	First year	187	6.58	1.80	t:-2.620	0.00
	Fourth year	109	7.26	2.67		
Total	First year	187	65.80	10.65	t:-1.902	0.05
	Fourth year	109	68.19	10.02		

n– number, p- level of significance (p <0.05), t-t test, SD- standard deviation

Table 3. The Distribution of Mean Scores for EPAS According to Some Socio-demographic Features (n=296)

Features	n	\bar{X}	SD	T test and p
Gender				
Female	247	67.64	9.85	t: 3.61 p: 0.02
Male	49	61.83	12.14	
Mothers’ educational status				
Illiterate	27	60.48	13.82	KW: 5.87 p: 0.11
Literate	41	66.26	10.87	
Primary school	160	67.80	9.54	
High school	45	66.44	10.95	
University	23	67.39	8.61	
Fathers’ educational status				
Illiterate	5	69.60	14.72	KW: 3.94 p: 0.26
Literate	30	63.70	11.19	
Primary school	149	67.71	9.28	
High school	62	65.12	12.41	
University	50	67.02	10.19	
Doing an environmental course before university				
Yes	124	68.20	10.18	t: 2.14 p: 0.03
No	172	65.58	10.57	
Doing an environmental course				
Yes	85	67.49	9.57	t: 0.891 p: 0.37
No	211	66.35	10.82	
Talking to friends about environmental issues				
Yes	275	67.13	10.08	U: 2086.5 p: 0.03
No	21	60.76	13.62	
Member of environmental organizations				
Yes	24	71.58	10.08	U: 2332.5 p: 0.02
No	272	66.25	10.41	

n– number, p- level of significance (p <0.05), t-t test, U- Mann Whitney U test, KW- Kruskal–Wallis test, SD- standard deviation

The female students received a significantly higher score for EPAS than the male students ($p < 0.05$). The difference between the mean score of all the students for EPAS and talking to friends about the environment (U: 2086.5, p : 0.03), doing an environmental course before university education (t : 2.14, p : 0.03) and being a member of an environmentalist organization (U: 2332.5, p : 0.02) was significant; however, the difference between the mean score for EPAS and having an environmental course at university was not significant (Table 3).

DISCUSSION

It seems that theoretical nursing education and nursing practicums do not focus on environmental health related issues at a desirable level. Education about the environment can lead students to acquire a positive attitude to and to display desirable behavior related to the environment [19]. The present study was performed to determine attitudes of nursing students to environmental problems and affecting factors. Attitudes and behavior of the students were found to be affected by several variables.

Similar to other studies, in this study, the number of female students is more than that of the male students, which is an expected situation in nursing faculties in Turkey [16,20,21]. The reason why the number of first-year students is more than that of the final-year students is due to the fact that the final-year students are in the clinic due to practice / internship. In this study, although almost all of the students stated that they were interested in environmental issues and they talked about this issue with their friends, they did not take any courses about environmental issues before or during their university education. Similar results were obtained in other studies conducted with nursing students [16,20-23]. The aforementioned data clearly demonstrate that students are interested in environmental issues but that they have trouble in accessing information they need. Given that nursing education is focused on people, health and environment, it is necessary to reconsider the nursing education given on environmental issues. The vast majority of the students also stated that they were not members of any environmental organization and that they did not participate in an activity related to environmental problems. In Turkey, there are many non-governmental organizations that deal with environmental problems and organize various activities during certain times of the year. That the students did not participate in the relevant organizations or activities although they were aware of the environmental problems suggests that in the education process, their attention was not sufficiently drawn to that issue. Therefore, it is assumed that if positive

attitudes towards the environment are supported in the nursing education, and seminars and activities in which the students take part are organized in the faculty, this may promote students' awareness of the environment.

The mean score of the first-year students and the fourth-year students for EPAS was 65.80 ± 10.25 and 68.19 ± 10.02 respectively. The fourth-year students got higher scores for all the subscales of EPAS, but only the mean score for incorporating into the personality differed significantly. Incorporating into the personality refers to acting consistently in accordance with values adopted, making behavior part of the character, having consistent attitudes, changing attitudes, reviewing, asking questions, solving problems, identification and degree of preference [3]. Ek et al. compared attitudes of first-year students and fourth-year students with different majors and found the fourth-year students had a significantly more positive attitude. They noted that the difference resulted from the comparison between nursing students and automotive engineering students [24]. In the present study, the fourth-year students got higher scores for their environmental attitudes; however, only the difference between the mean score for EPAS and incorporating into the personality was significant. This suggests that the nursing curriculum needs to be restructured and improved so that the students could have a more positive attitude to the environment. The female students received a significantly higher score for their environmental attitudes, which is consistent with the literature. In fact, several studies showed that female students were more knowledgeable about and had a more favorable attitude to the environment [16,23-25].

In the current study, parental education was not found to affect the mean scores for EPAS, which is compatible with the literature [16,21,23,24]. However, it is generally thought that children growing up in families with high education levels adopt a more positive attitude towards the environment and environmental problems. This is can be indicative of a positive effect of education on the environment. In studies by Ozmen et al. [21] and Vaizoglu et al. [25] children with higher parental education levels got significantly higher scores for EPAS. Actually, family members with high education levels could be considered as an important factor for acquisition of a more favorable attitude towards the environment and environmental issues.

In the present study, 41.9% of the students had a course about the environment before university. Although they were found to get a significantly higher score for EPAS ($p < 0.05$), there was not a significant relation between the mean scores for EPAS and receiving a course about the environment during university education. However,

the students talking to their friends about environmental issues and being a member of an environmental organization in addition to getting a course about the environment got significantly different scores for EPAS than the rest of the students ($p < 0.05$). Ek et al. showed that getting a course about the environment before and during university education improved attitudes towards the environment [24]. Consistent with the results of the present study, Bodur and Tasocak reported that nursing students who were members of environmental organizations and participated in environmental activities had a significantly higher sensitivity to the environment [14]. It is clear that knowledge acquired about the environment in different stages of education will have a positive influence on environment related attitudes and that involvement of individuals in environmental activities will contribute to creation of favorable behavior related to the environment. It can be suggested that nursing curricula should be restructured and focus more on environment related subjects. This will clearly be beneficial to development of more positive attitudes.

Limitations of the study

The limitation of the study is that it was the low number of students and faculty of nursing. It is recommended that studies on this subject should be carried out in more than one nursing faculty and in all classes. In addition, it is necessary to compare the information and attitudes of nurses and student nurses towards the environment and students' practices should be examined that cause environmental problems in daily life in future study.

CONCLUSIONS

In light of the results of the present study, it seems that students' attitudes to environmental problems depend on receiving effective education. Therefore, knowledge and awareness of students about the environment and environmental problems should be improved, their negative attitudes and behavior should be replaced by positive ones and different teaching methods and techniques based on a student centered approach and allowing active participation of students could be used to help students so that what they learn can be permanent. Course syllabi could be redesigned and new ones should allow using the abovementioned methods and techniques. Universities should work in cooperation with various civil organizations in order that students' awareness about environmental issues can be improved. In addition, researchers should show more interest in experimental studies directed towards enhancing environmental awareness. In light of these recommendations, it is

assumed that students will become individuals more sensitive to, more interested in environmental problems and having positive attitudes and behavior about the environment in the future.

Implications for Nursing Knowledge

The results of this study will contribute to improvement of nursing curricula which will enable students to acquire more positive attitudes to the environment.

Knowledge Translation

This study will provide guidance in restructuring nursing curricula involving environmental issues. The study revealed that environmental education before university plays an important role in development of positive attitudes towards the environment. It also emphasized that nurses need to be more sensitive to the environment to offer better environmental health nursing services.

Conflicts of Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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