



Nursing students' views about environmental sensitivity in Turkey¹

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Abstract

Research was planned as a cross-sectional study to determine nursing students' views about environmental sensitivity. The sample comprised 553 students studying at a nursing school in Istanbul. No sampling group was created in study; instead, it was aimed to reach the entire sample, 88% of the sample (487) was achieved. Data was collected with "Information Form" and "Environmental Sensibility Questionnaire". Data were analyzed by SPSS 17.0 package program by percentage, t-test, Oneway ANOVA Test, Spearman's Rho correlation analysis. Results showed that nursing students had medium-level sensitivity toward environment. However, it was stated that environmental sensitivity was affected from some socio-demographic characteristics (grade, recognize non-governmental organization related environment, attend to seminars, panel as scientific studies, activities of volunteer organizations, taking environmental education). As a result, it can be said that nursing students' views about environmental sensitivity were positive.

Keywords: Environment; Environmental Health; Environmental Sensitivity; Nursing; Nursing Education.

1. Introduction

In the modern world, while adaptation of science and technology to life makes easy our lives, it also threatens human existence by harming the natural balance. Turkey, which is a rich country in terms of historical, natural, and energy resources, is affected by environmental problems, and focuses on creating individual, social, and corporate responsibility for environmental

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protection, as well as developing cooperation with international organizations. Being a strategic country with its geo-political location, Turkey is connected to the oceans through the Black Sea, the Mediterranean, and the Aegean Sea surrounding 3 sides of the country, and is located at the intersection point of Asia, Europe, and Africa, which are known as "Old Continents." The Republic of Turkey, founded on 29 October 1923, is a democratic and secular country. The majority of the population is Muslim, but the country is enriched by people from different ethnic origins, its deep-rooted history, and cultural bonds. Spread over an area of 814,578 km², Turkey has a population of 73 million people as of 2010, and it is a young population. In Turkey, which is within the mild temperate zone, it is possible to experience 4 seasons at the same time (TUIK, 2011).

Today, the natural resources are rapidly consumed as a result of increasing world population, unplanned industrialization, over-consumption, unhealthy urbanization, nuclear technologies, regional wars, and over-use of chemicals; the resulting environmental pollution poses a danger to the entire world (Çabuk and Karacaoğlu, 2003; Kahyaoğlu et al., 2008; Altunoğlu and Atav, 2009). Coexisting climate change, increasing temperatures, melting glaciers, storms, changing flora, extinction of bio-diversity, and diseases also affect the world, transforming national problems into global ones (Babadağ, 2007; Baykal and Baykal, 2008; Erdoğan et al., 2008; Cansaran et al., 2008; Kaith, 2009; WHO, 2010). Effective management of environmental problems and protection of the natural resources for the next generations can only be achieved through a global environmental sensibility (Özmen et al., 2005; Kainth, 2009). The families, health professionals/nurses who provide comprehensive services to individuals, higher education institutions, mass media channels, and non-governmental organizations play significant roles in developing environmental sensibility (Altunoğlu and Atav, 2009; Teksöz et al., 2010). It is only possible by effective education on the environment so that the individuals become sensitive to the environment and play an active role in providing solutions to environmental problems (Çabuk and Karacaoğlu, 2003; Sakarya and Demiriz, 2010; Teksöz et al., 2010).

When the matter is considered in terms of nursing, the concept of environment has been among the basic concepts of nursing since Florence Nightingale, the founder of nursing, and is becoming increasingly important. The fact that doctrinairian nurses have placed great importance on the environment since Florence Nightingale makes us think that the environment will be a significant heritage from the viewpoint of nursing discipline. In addition, it is emphasized in the literature that today's nurses should provide care services to the individual/patient together with his/her immediate family and also take into consideration the global environment (Babadağ, 2007; Libster, 2008). The fact that environmental problems seriously affect global health, as well as

individuals and society, requires the nurses to be more sensitive to environment in education programs and practices, and provide solutions by developing a global perspective towards the problems (Hewitt et al., 2006; Carlton et al., 2007; Dixon et al., 2009; Libster, 2008; Jonckher and Brouwer, 2009; Hill et al., 2010). In line with this, WHO and professional nursing organizations emphasize that nurses have key roles within the healthcare system in improving environmental health and global health; it is required that courses on global health are included in graduate studies in nursing education, and that the content of the curricula be arranged by the nursing educators to support involvement of the nurses in the global healthcare system (Nursing and Environmental Roundtable Final Report, 2002; Carlton et al., 2007; Reid, 2007; ANA's Principles of Environmental Health, 2010; WHO, 2010). When studies on environmental sensitivity are examined, it is seen that the studies involving nursing students are limited, and the relevant studies in Turkey are mostly conducted with students of the faculty of education and medicine.

2. Purpose

In the light of this information, this study was conducted to determine the views of the nursing students on environmental sensitivity and the affecting factors. Within the scope of this objective, the following questions were addressed:

- What are the views of the nursing students on environmental sensitivity?
- Is there any correlation between the nursing students' views about environmental sensitivity and grade, sex, having received education about environment during secondary education, following environmental publications, thinking that mass media channels build up environmental awareness, thinking that nursing education creates environmental sensitivity, knowing about the nongovernmental organizations working on environment, participating in environmental works, and having received environmental education?

3. Method and Material

3.1. Population and sample selection

The study population consisted of 553 students, 162 being freshmen, 163 being sophomores, 120 being juniors, and 108 being seniors studying at Istanbul University Florence Nightingale Nursing School during the academic year 2008-2009. The sampling of the study consisted of 487 students who were selected using disproportional cluster method, as 5 students did not complete the survey form properly and were excluded, 20 students did not agree to participate in the study, and 31 students were not present at school. Eighty-eight percent of the population was reached.

3.2. Type of study

The study was cross-sectional design.

3.3. Data Collection

The data were collected using the "Personal Information Form" and the "Environmental Sensitivity Survey Form" developed by the researcher on the basis of the literature.

Personal Information Form consisted of 17 questions aiming to determine the identifying characteristics of the nursing students. The questions related to identifying characteristics of the students were about their grade, age, gender, marital status, educational status, mother's and father's educational status, having received environmental education during secondary school, following environmental publications, thinking that mass media channels create environmental awareness, thinking that environmental studies are sufficient, thinking that nursing education creates environmental sensitivity, and knowing about non-governmental organizations working for the environment.

Environmental Sensitivity Survey Form was developed by Çabuk and Karacaoğlu (2003) to determine the students' views about environmental sensitivity and the Cronbach alpha was .81; it was .86 in our study. The survey form consisted of 24 questions. The forms also included questions about whether the students were sensitive towards the environment, and their views about whether the environmental education they received at formal educational institutions was sufficient in creating environmental sensitivity (Çabuk and Karacaoğlu, 2003). The answer choices for the survey form were *Never*, *Sometimes*, *Always* for the first 20 questions, and *Yes*, *Partially*, and *No* for the remaining 4 questions. The total scores attained by the students in the survey form ranged from 24 to 72, and more points they received, more positive their views about environmental sensitivity were.

3.4. Limitations of the study

The results of the study were limited to nursing students at Istanbul University Florence Nightingale School of Nursing.

3.5. Research ethics

Written permission was obtained from Istanbul University Ethical Committee. The data were collected on voluntary basis, upon written consent of the relevant ethical committee, institutions and people.

3.6. Evaluation of data

The data obtained were analyzed using the arithmetic mean, standard deviation, and frequency-percentage in the SPSS 17.0 package program; one-way ANOVA test in inter-group comparisons; Turkey HDS test in determination of differentiating group; Student *t* test in

comparison of the parameters between 2 groups; and Spearman's Rho correlation analysis in examination of the correlation between the parameters. The level of significance was taken as $p < 0.05$.

4. Results

Identifying Characteristics of the Nursing Students

It was found that 33.5% of the nursing students were sophomores, and 28% were 20 years old; their average age was 21.11 ± 1.75 ; 91.8% were female, 98.4% single, and 39% graduated from regular high school; 57.5% of the mothers and 40.3% of the fathers graduated from primary school.

As seen in Table 1, 48% of the nursing students received environmental education during secondary school, 58.9% followed environmental publications, 74.7% thought mass media channels created environmental awareness, 93.6% did not think the environmental studies sufficient, 66.9% did not think that nursing education created environmental sensitivity, and 58.1% knew no nongovernmental organization working on the environment.

Table 1. Nursing Students' Views about Environment (N=487)

Results	Yes		No	
	n	%	n	%
Receive environmental education during secondary school	234	48,0	253	52,0
Follow environmental publications	287	58,9	200	41,1
Think mass media channels created environmental awareness	364	74,7	123	25,3
Think the environmental studies sufficient	31	6,4	456	93,6
Think nursing education created environmental sensitivity	161	33,1	326	66,9
Know non-governmental organization working on environment.	204	41,9	283	58,1

Nursing Students' Views about Environmental Sensitivity

The general average points relating to the nursing students' views about environmental sensitivity were found, and indicated that the nursing students' sensitivity to the environment was at medium level and partial.

As shown in Table 2, there was a statistically significant difference between the general average points relating to the nursing students' views about environmental sensitivity according to their grades ($p = 0.015$). The general average points relating to the freshmen's views about

environmental sensitivity (51.06 ± 6.82) were significantly lower than the average points of the sophomores and juniors (53.68 ± 7.17 , $p = 0.027$; 53.66 ± 7.31 , $p = 0,036$). It was determined that such difference resulted from the grade of junior and senior (1-3, 1-4). There was no significant difference between the average points of students at other grades in terms of their views about environmental sensitivity ($p > 0.05$).

There was a statistically significant difference between the general average points of male and female nursing students in terms of their views about environmental sensitivity ($p = 0.05$). The general average points of the female students (52.80 ± 7.12), relating to their views about environmental sensitivity, were significantly higher than the average points of the male students (50.52 ± 6.97 , $p < 0.05$).

There was no statistically significant difference between the general average points of the nursing students who received environmental education during secondary school and those who did not ($p = 0.063$).

There was a statistically significant difference between the general average points relating to nursing students' following environmental publications, thinking that mass media channels created environmental awareness, thinking that nursing education created environmental sensitivity, knowing non-governmental organizations working on environment and their views about environmental sensitivity ($p = 0.001$).

Table 2. Comparison between Some Variables and Nursing Students' Views about Environmental Sensitivity (N=487)

Variables		n	Environmental Sensitivity
			$\bar{X} \pm SS$
Grade	Freshmen	130	51,06±6,82
	Sophomore	163	52,60±7,09
	Junior	102	53,68±7,17
	Senior	92	53,66±7,31
			F: 3,537 p: 0,015*
			1-3, 1-4
Gender	Female	447	52,80±7,12
	Male	40	50,52±6,97
			t: 1,942 p: 0,050*
Receive environmental education during secondary school	Yes	234	53,24±7,54
	No	253	52,04±6,70
			t: 1,865 p: 0,063
Follow environmental publications	Yes	287	54,19±6,99
	No	200	50,36±6,73
			t: 6,025 p: 0,001*
Think mass media channels created environmental awareness	Yes	364	53,38±6,83
	No	123	50,36±7,54
			t: 4,115 p: 0,001*
Think nursing education created environmental sensitivity	Yes	161	54,91±6,98
	No	326	51,48±6,94
			t: 5,116 p: 0,001*
Know non-governmental organization working on environment.	Yes	204	54,02±6,52
	No	283	51,60±7,39
			t: 3,729 p: 0,001*

* $p \leq 0,001$ ** $p < 0,01$ *** $p < 0,05$

As shown in Table 3, there was a medium positive and statistically significant correlation between the general average points relating to nursing students' participating in seminars, panels, conferences, etc., and their views about environmental sensitivity and participation in voluntary organizational studies and their views about environmental sensitivity ($r = 0.453$, $r = 484$ $p = 0.001$).

Table 3. Correlation Between Participating Studies about Environment and Nursing Students' Views about Environmental Sensitivity (N=487)

Studies	Environmental Sensitivity	
	r*	p
Scientific Studies etc. Seminars, Panels (n: 349)	0,543	0,001**
Voluntary Organizational Studies (n:273)	0,484	0,001**

*Spearman's Rho Correlation Analysis

** $p < 0.01$

***More than one option chosen.

As shown in Table 4, there was a medium positive, and statistically significant correlation between the general average points of nursing students' believing that they received sufficient education about air, water, soil pollution and ecological balance awareness and their views about environmental sensitivity ($p = 0.001$).

Table 4. Correlation between Environmental Education and Nursing Students' Views about Environmental Sensitivity (N=487)

Views	Environmental Sensitivity	
	r*	p
Receive sufficient training on air pollution awareness (n: 335)	0,549	0,001**
Receive sufficient training on water pollution awareness (n:360)	0,576	0,001**
Receive sufficient training on soil pollution awareness (n:336)	0,605	0,001**
Receive sufficient training on ecological balance awareness (n: 334)	0,565	0,001**

*Spearman's Rho Correlation Analysis

** $p < 0.01$

***More than one option chosen.

5. Discussion

The study results showed that the nursing students had positive views about environmental sensitivity. These results were in parallel with the findings of Çınar et al. (2010) and Ek et al. (2009) in their studies with nursing students. This can be related to the fact that the environment, a basic concept in nursing, has been included in nursing curricula.

When other findings of the nursing students relating to environment were examined (Table 1), it was found that a majority of the students did not receive sufficient environmental education during secondary school. This result is in parallel with the results of similar studies Çelen et al. (2002) and Ek et al. (2009) and it made us think that the environmental educational activities during secondary school should be assessed.

A majority of the students stated that they followed environmental publications and thought that mass media channels created environmental awareness. In a study conducted by Vaizoğlu et al. (2005) with seniors of the faculty of medicine, 90.1% of the students stated that they use television, and 80.4% stated they used newspapers as a resource of information about the environment. When these data were assessed, it was considered that print and visual media play an important role in creating environmental awareness (Table 1).

It was found that most of the students thought that environmental studies were insufficient. This result gave the impression that the nursing students were interested in the environment, and kept up the relevant publications (Table 1).

Most of the students stated that they did not know any non-governmental organizations working for the environment. This result was in line with the relevant study results, and indicated that the environmental non-governmental organizations did not reach and were not promoted among students as necessary (Table 1).

It was found that there was a statistically significant difference between the grade of the students and their general average points relating to views about environmental sensitivity ($p = 0.015$), and upper grade was more sensitive to environment. This result was in parallel with studies conducted by Çelen et al (2002), Özden (2008) and Ek et al (2009) (Table 2).

It was found that there was a statistically significant difference between nursing students' gender and the general average points relating to their views about environmental sensitivity ($p = 0.050$), and the average points of the female students were significantly higher than the average points of the male students ($p < 0.05$). The relevant literature was in parallel with our results (Çelen et al., 2002; Özdemir et al., 2004; Tuncer et al., 2005; Kahyaoğlu et al., 2008; Özden, 2008; Ek et al., 2009). This result was considered to have stemmed from the cultural structure of the country and the intersexual differences (Table 2).

There was no statistically significant difference between the general average points of the nursing students who received sufficient environmental education during secondary school and those who did not ($p = 0.063$). These results were in parallel with the studies conducted by Çelen et al. (2002), Özdemir et al. (2004), Erol and Gezer (2006) and Ürey and Şahin (2010) and made us think that the students benefited from nursing education programs (Table 2).

There was a statistically significant difference between the general average points relating to nursing students' following environmental publications and thinking that mass media channels created environmental awareness and their views about environmental sensitivity ($p = 0.001$). These results were in parallel with the studies conducted by Cansaran et al. (2008), Ek et al. (2009) and Ürey and Şahin (2010). It can be suggested that such tools should be used more commonly, and that environmental publications and mass media channels play an important role in creating environmental sensitivity. Similarly there was a statistically significant difference between the general average points relating to nursing students' knowing non-governmental organizations working for the environment and their views about environmental sensitivity ($p = 0.001$). In a study conducted with faculty of medicine students in Finland, it was found that being a member of an environmental society was a factor associated with increasing environmental sensitivity (Kasma-Kankainen and

Virakamasa, 1996). These results were in line with the studies conducted by Özdemir et al. (2004), Ürey and Şahin (2010). It can be suggested that knowing non-governmental organizations working for the environment plays an important role in students being environmentally sensitive individuals, and that nursing students should be supported in participating and becoming members of non-governmental organizations (Table 2).

There was a medium positive and statistically significant correlation between the general average points relating to nursing students' participating in seminars, panels, conferences, and voluntary organizational works, and their views about environmental sensitivity ($p = 0.001$). Together with the study conducted by Ürey and Şahin (2010), this was a positive finding suggesting that participating in activities outside formal education increased environmental sensitivity (Table 3).

There was a medium positive and statistically significant correlation between the general average points relating to receiving environmental education and nursing students' views about environmental sensitivity ($p = 0.001$). This was also in line with the studies conducted by Erol and Gezer (2006) and Ürey and Şahin (2010) and it suggested that there was a direct correlation between environmental education and environmental sensitivity, and that receiving environmental education increased environmental sensitivity (Table 4).

6. Conclusions and Recommendations

As a result it was found that the students had positive views about environmental sensitivity, and medium levels of sensitivity. In line with these results, it is suggested that

- Nursing curricula should include transformative approaches; activities helping students to be informed about nature, increasing their awareness about environmental problems, and developing environmental sensitivity should be increased.
- The existing educational activities on environmental sensitivity should be assessed at all educational stages (primary school, secondary school, and higher education).
- The relevant non-governmental organizations should be promoted among students, and students should be encouraged to actively participate in their works, and follow the relevant publications.

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