Does Familial History of Cancer Affect the General Health Conditions and Healthy Lifestyle Behavior of Nursing and Midwifery Students?

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Abstract

Aim: *This study was performed with the aim of determining the effect of status regarding having a cancer patient in the family to the general health condition and healthy lifestyle behavior of nursing and midwifery students.*

Method: *A total of 713 students participated in the comparative and descriptive study. Data was collected using the student identification form, the General Health Questionnaire-12, and the Healthy Lifestyle Behavior Scale-II.*

Results: *Among the students, 23.7% had a cancer patient in their family, and those students were found to think they carried a higher risk for cancer (p<0.01). It was determined that the general health statuses of the students with cancer patients in their families were affected on a higher level, although this difference was not statistically meaningful (p>0.05). Additionally, the health responsibility and interpersonal relationships score averages, as well as the total scores of the students who had a cancer patient in their family were found to be higher compared to the students who didn't (p<0.05). In the study, status regarding considering oneself under risk of cancer was found to affect general health negatively (p<0.01), and age and education level was found to positively affect healthy lifestyle behavior (p<0.05).*

Conclusion: *Status regarding having a cancer patient in the family was found to not affect general health status and affect healthy lifestyle behavior positively in nursing and midwifery students.*

Keywords: *Cancer, familial history, general health, healthy lifestyle behavior, student*

I.   Introduction

Cancer is an important health problem throughout the world and in Turkey, causing the most deaths second to only heart diseases. According to data from 2012, 14.1 million individuals in the world were diagnosed with cancer and 8.2 million individuals lost their lives because of cancer (1). The cancer incidence in Turkey is similar to the world and the developing countries of the world, and the male-female total incidence of cancer in Turkey is 228.6 in a hundred thousand. A 13.5 in a hundred thousand increase in cancer incidence from 2010 to 2011 can be seen in Turkey (2). The most common types of cancer worldwide are lung, liver, stomach, colorectal, breast, and esophageal cancers, respectively (3). In Turkey, breast, thyroid, and colorectal cancers in women, and lung, prostate, and colorectal cancers are seen most common (2).In the phase of treatment and care, cancer affects the quality of life of both the patient and his/her relatives negatively from many aspects such as physical, emotional, and economic (4,5). Additionally, the perception of cancer as a disease that threatens life, fear of losing the patient, feelings of desperation, and difficulties in coping may disrupt the well beings, relationships, sleep patterns, and general health of patient's relatives (6-11).

Since cancer develops because of 5-10% genetic and 90-95% environmental reasons (12), it is considered a preventable disease (3). Although the genetic inclination rate is interpreted as low, the risk for cancer increases in individuals with genetic predilection combined with environmental factors. This can cause family members and relatives of cancer patients to worry about their health more (13). For his reason, the general health status of individuals who have cancer patients in their families should be determined in the early period. Protection from cancer is the most important method of preventing cancer publicly, and it is very important in protection from cancer to adopt healthy lifestyle behavior and apply those. Healthy lifestyle behavior is defined as behavior that serves individuals in maintaining and increasing their well being. These

behaviors include sufficient and balanced nutrition, stress management, regular physical activity, efficient spiritual development, positive interpersonal relationships, and taking responsibility for one's protection and improvement of health (14). In a study by Spring et al (15), the effective application of healthy lifestyle behaviors in health systems and the society is stated to cause a reduction in cancer prevalence. In this context, nursing and midwifery students, who will assume effective roles in the protection of individuals' health, their treatment, and care, should exhibit healthy behavior and become role models in order to be able to inform healthy/sick individuals and the society on the development of positive health behavior for protection form cancer and provide counseling.

In recent years, it has become very important to raise the awareness levels of individuals under genetic risk for cancer and guide them to gain health improvement behaviors. In this context, determining how young people related to individuals with cancer, who have strong emotional ties to those individuals, are affected by cancer may be effective in strengthening their coping skills and adding healthy years to their lives. This study was performed with the aim of comparatively exhibiting the effect of status regarding having a cancer patient among family (mother, father, sibling) or relatives (uncle, aunt, grandfather, grandmother, niece) on the general health conditions and healthy lifestyle behavior of nursing and midwifery students.

II. Methods

2.1. Sample

The universe of this comparative and descriptive study consisted of 864 students studying at the nursing and midwifery departments of a university between November 15th and December 15th 2015. 713 students who continued their studies in the period the study was performed, weren't diagnosed with cancer, accepted to participate, and filled out the data collection forms completely were included in the sample. In this context, the participation rate for the study was 82.5%.

2.2. Data collection tools

Data was collected using the student identification form, the General Health Questionnaire-12, and the Healthy Lifestyle Behavior Scale-II. *Student Identification Form:* In this form prepared by the researchers according to literature, the personal information of the students and their thoughts on cancer were questioned with 22 questions.*The General Health Questionnaire-12 (GHQ-12):* This self report scale is a scale that aims to demonstrate mental disorders among the public and participants in the clinical setting except for psychiatry questions mental symptoms pertaining to the last week. The scale was developed in 1972 by David Goldberg. The scale has 12, 28, 30, and 60 item forms. The 12 item form of the questionnaire is widely preferred since it has high accuracy and specificity in separating cases and can be used in various socio cultural settings. Its Turkish translation and validity and reliability studies were performed by Kilic (16). Each item has four answers (1, never happens; 2, just as always; 3, more than ever; 4, very often). The scale is scored by assigning 0 points for the first two choices and 1 for the last two choices. The highest score that can be taken from the scale is 12 while the lowest is 0. Those who take 4 points or more form the scale are considered to have taken "high" scores, those who take 2 or 3 points are considered to have taken medium scores, and those who take less than 2 are considered to have taken "low" scores. Those with 4 or higher points from the scale are considered "the group under risk of mental diseases" (16). The Cronbach alpha value of the scale in this study was found to be 0.82.*The Healthy Lifestyle Behavior Scale-II (HLBS-II):* The scale was developed in 1996 by Walker et al, and translated into Turkish and tested for validity and reliability in 2008 by Bahar et al. The scale consists of 52 items and six sub dimensions, namely spiritual development, interpersonal relationships, nutrition, physical activity, health responsibility, and stress management. The scale is evaluated in a 4 way likert type scoring with the options "never (1)", "sometimes (2)", "often (3)", and "regularly (4)". The lowest score that can be taken from the whole scale is 52 while the highest is 208. Higher scores indicate healthy lifestyle behavior on more desired levels (17). The Cronbach alpha value of the scale in this study was found to be 0.91.

2.3. Ethical permission

Written permission from the ethical board of a university was taken for the study to be performed (Decision no: 2015-10/14). Additionally, written permission was taken from the institution where the study was performed. Researchers informed the students on the aim and importance of the study. Then, informed consent was taken from the students who agreed to participate. The study was conducted in accordance with the ethical standards of the Helsinki declaration.

2.4. Statistical Analysis

Data were analyzed using the SPSS 16.0 program. Descriptive (mean, SD [standard deviation], range and frequency), comparative (Chi-square test for qualitative data, student t test, Mann-Whitney U test and Kruskal-Wallis test for independent groups) and correlational (Pearson correlation) statistics were used to analyze the data. A level of significance of $p < 0.05$ was established prior to data collection.

III. Results

While 69.1% of the students studied at the nursing department, 30.9% studied at the midwifery department. The average age of the students was 19.90±1.44 years, and 75.5% were female. 32.1% of the participants were in their junior year, 98.3% were single, and 72.1% resided in dormitories. 9.4% of the students were overweight, 4.6% were obese, 12.3% smoked, and 6.6% used alcohol. Additionally, 6.5% of the students had a chronic disease (migraine, diabetes, asthma, hyperthyroid, etc). 72.4% of the students evaluated their health as fine and 83.5% evaluated their family relationships as fine. 71.1% of the students stated their academic success to be on an average level. Among the students, 23.7% had a cancer patient in their immediate families or among their relatives, and this ratio was 13.6% regarding only immediate family members. The prevalence of lung cancer (22.4%), breast cancer (14.3%), and colon cancer (11%) were higher among the families and relatives of the students. While 19.9% of the students thought they were under risk of cancer, only 17.5% stated that they had sufficient information on preventing cancer. The students termed the most important factors that cause cancer as stress (38.6%), smoking (22.3%), and genetic predilection (20.3%). 78.4% of the students stated that the risk factors for cancer could be controlled in order to fight cancer. To the question "What is the most important personal intervention you applied in order to fight cancer?" 50.1% of the students gave the answer not smoking and 14.9% gave the answer stress management (Table 1).

In Table 2, the general health levels and the healthy lifestyle behaviors of the students were shown. The general health levels (2.57±2.80) and healthy lifestyle behaviors of the students who participated (128.07±19.11) were found to be on an average level. In the HLBS-II, the students took the highest scores from the spiritual development sub dimension (26.41±4.82), and the lowest score from the physical activity sub dimension (15.98±4.44). It was determined that the general health statuses of the students with cancer patients in their families were affected on a higher level, although this difference was not statistically meaningful (p>0.05). Additionally, the health responsibility and interpersonal relationships score averages, as well as the total scores of the students who had a cancer patient in their family were found to be higher compared to the students who didn't (p<0.05). Accordingly, the health responsibility, interpersonal relationships, and total healthy lifestyle behavior score averages of the students who had a cancer patient among family or relatives were found to be higher.The comparison of the students' status regarding having a cancer patient among family or relatives with certain variables was given in Table 3. Accordingly, while status regarding having a cancer patient among family and relatives does not affect their academic success, family relations, or smoking status (p>0.05), it affects health evaluation, status regarding considering oneself under risk of cancer, and thoughts on having sufficient information to fight cancer on meaningful levels (p<0.05). It was thus determined that students with a cancer patient among family and relatives, when compared to those who don't, don't perceive their health as fine, think they carry more risk for cancer, and have more information on preventing cancer.

While the age, gender, department studied a, residence, family member or relative with cancer, presence of chronic diseases, and having sufficient information for preventing cancer didn't affect the general health levels of students who have a cancer patient among family and relatives (p>0.05), year of study and considering oneself under risk of cancer did (p<0.05). Accordingly, the general health levels of students who are in their freshman year and consider themselves under risk of cancer were worse. Additionally, the age, year of study, and status regarding having sufficient information on preventing cancer affected their healthy lifestyle behavior statistically (p<0.05). In this context, as the age and education level of the students increased, so did their healthy lifestyle behaviors.

IV. Discussion

Genetic predilection to cancer increases the prevalence of many types of cancer such as colorectal, esophagus, and larynx cancers (18). However, it is not known if the general health levels of family members or relatives under risk of cancer are affected or if a difference in their healthy lifestyle behaviors towards protection from cancer occurs. Because of the limited nature of studies on the effect of status regarding having a cancer patient among family or relatives on general health levels and healthy lifestyle behaviors of nursing and midwifery students both in Turkey and throughout the world, the findings of the study were discussed generally by taking into consideration studies on individuals who have cancer patients among family or relatives. In our study, it was determined that almost a quarter of the students had a cancer patient among family or relatives, and that this rate is 13.6% among family members. In a study conducted with university students, it was found that 36.4% of the participants had a cancer patient in their close environment and that 10.4% were immediate family, and 71.6% were extended family (19). Similarly, in another study where nursing and midwifery students were also present, it was found that 30.1% of the students had a history of cancer within their immediate family, and 63.8% had a history of cancer among extended family. When the prevalence of cancer is taken into consideration, it becomes very important to raise awareness on protection from cancer, especially in the younger generation.

In our study, nearly four fifths of the students didn't consider themselves under risk of cancer. In another study, 26.8% of the participants with a history of cancer in their family were found to think they had a higher possibility than most people of cancer (20). In a study by Ilgaz and Gozum (21), those with a history of cancer in their family were found to be afraid of cancer themselves. In a study performed by Smith et al, (22) with women, only 24% of individuals with cancer among their immediate families were found to be worried about cancer. The findings of our study show that most of the students were not aware of the importance of genetic predilection when considering cancer risk. In preventing cancer, it is very important to raise awareness in every section of society, especially health sciences students. Only a fifth of the students in our study stated that they had sufficient knowledge regarding preventing cancer. In another study, most of the students stated cancer to be a preventable disease and thought that their knowledge on caner was on a good level (23). The findings of our study can be explained by nearly a third of the students being in their freshman year and thus not having learned theoretically the relationship between cancer and genetic predilection.

Bad dietary habits, obesity, smoking, alcohol consumption, physical inactivity, high risk sexual behavior, and exposure to the sun without protection are all among preventable causes for cancer (15). In our study, the students stated the most important factors causing cancer as stress, smoking, and genetic predilection. In a study by Coban et al (23), 98% of the students stated smoking to be a cause of cancer while 90.2% stated alcohol consumption as one. In another study, the ratio of students that stated that lifestyle and certain habits have an effect on cancer was found to be 86.8% (19). The fact that the students in our study stated stress to be first among cancer risk factors shows that they need psycho social support. Difficulties a student encounters during education, the traumatic events he/she experiences, and difficulties in human relations may cause disruptions in general health condition and mental status when the necessary precautions are not taken (24). In our study, even though there was no meaningful difference between the general health conditions of students with and without a cancer patient among family or relatives, being affected by the situation was found to be higher. In another study, an increase in the affectivity of 60.9% of the relatives of patients was found with a fifth having bad general health levels (4). The findings of our study may have arisen from the students being away from the individual with cancer, missing the individual, anxiety regarding carrying risk of disease, and difficulties encountered during education. In this context, examining general health condition, which affects the personal and occupational development of the students, during education can help identifying the problems of the students early and improve coping skills.

The most important factor in society based protection from cancer is lifestyle related habits. In this context, individuals realizing healthy lifestyle behaviors such as avoiding smoking, healthy nutrition, and regular physical activity will be the most important intervention possible. One of the factors that have an effect on the acquisition of healthy lifestyle behaviors is the perception of the disease as a threat (25). In our study, the healthy lifestyle behaviors of students with a cancer patient among family or relatives were on a better level compared to those without. In other studies, status regarding having a cancer patient among family or relatives was found to affect early diagnosis behavior positively, increase knowledge on cancer, and provide improvement in healthy lifestyle behavior (26-28). Contrary our study, some studies in literature have found that status regarding having a cancer patient among family or relatives doesn't affect behavior regarding protection from cancer (20,29-32). It is pleasing that according to the findings of our study, students under genetic risk show positive behavior for protection from cancer.

In our study, the dietary habits of the students with regard to protection from cancer were found to be on an average level, and their physical activity habits were found to be poor. In other studies where the behaviors of students with regard to protection from cancer were examined, similar results were reached (19,33,34). The findings of our study may have risen form reasons such as most of the students residing in dormitories, the students spending most of their day at school, and the insufficiency of sports fields. In our study, the general health levels of students who were in their freshman year and had a cancer patient among family or relatives, and students who consider themselves under risk of cancer were found to be lower. In another study, the risk of cancer was found to affect health perception negatively (20). In our study, the healthy lifestyle behaviors of the students were found to increase with increasing age and education levels. Other studies conducted with students also have found that age and education level affect healthy lifestyle behaviors positively (14,35-39). The findings of our study show that students should be made aware of preventing cancer starting in their freshman year and hat high risk groups should be determined and supported.

V. Conclusion

According to our findings, it was determined that nearly a quarter of the students had a cancer patient among family or relatives and that these students considered themselves under greater risk of cancer. Status regarding having a cancer patient in the family was found to not affect general health status and affect healthy lifestyle behavior positively in nursing and midwifery students. Additionally in our study, considering oneself under risk of cancer was found to affect general health levels negatively, and age and education level were

found to affect healthy lifestyle behavior positively. According to these findings, it can be suggested that course contents regarding protection from cancer should be given in each year of education, evaluations that will exhibit the healthy lifestyle behaviors of the students should be periodically performed during their professional education, topics shown to be insufficiently understood should be determined and activities such as symposiums and conferences should be performed, and students with a cancer patient among their family or relatives with genetic risk should be provided psychosocial support and counseling.

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Table 1. The Sociodemographic Characteristics of the Students (n=713)

Variables	Mean±SD	Range
Age (year)	19.90±1.44	17-31
	n	**%**
Department		
Nursing	493	69.1
Midwifery	220	30.9
Classroom		
I	193	27.1
II	219	30.7
III	229	32.1
IV	72	10.1
Gender		
Famale	538	75.5
Male	175	24.5
Marital status		
Married	12	1.7
Single	701	98.3
Living place		
At home with parents	78	10.9
At home with colleagues	121	17.0
Dormitory	514	72.1
Body Mass Index		
<18.5	73	10.2
18.5-24.9	541	75.8
25.0-29.9	67	9.4
>30	32	4.6
Smoking status		
Yes	88	12.3
Never used	596	83.6
Forwent	29	4.1
Alcohol consumption status		
Yes	47	6.6
Never used	648	90.9
Forwent	18	2.5
Chronic disease		
Yes	46	6.5
No	667	93.5
General helath perception		
Good	516	72.4
Moderate	175	24.5
Bad	22	3.1
Family relations		
Good	596	83.5
Moderate	93	13.0
Bad	24	3.5
Academic success level		
Good	175	24.5
Moderate	507	71.1
Bad	31	4.3

Table 2. Presence of Cancer in the Family or Relatives of the Students and Their Thoughts Regarding Cancer

Variables	n	%
Presence of cancer among family or relatives		
Yes	169	23.7
No	544	76.3
Family member or relative with cancer*		
Family member	23	13.6
Relative	146	86.4
Type of cancer in family or among relatives*		
Lung Cancer	38	22.4
Breast Cancer	24	14.3
Colon cancer	17	11.0
Prostate cancer	14	8.3
Uterus cancer	13	7.6
Stomach cancer	11	6.4
Pancreas cancer	10	5.8
Other**	41	24.2
Considering oneself under risk of cancer		
Yes	142	19.9
No	571	80.1
Having sufficient information for preventing cancer		
Yes	125	17.5
Partially	438	61.4
No	150	21.1
Most important factor causing cancer		
Stress	275	38.6
Smoking	159	22.3
Genetic predilection	145	20.3
Environmental elements (radiation, sunlight ect.)	74	10.4
Alcohol	22	3.1
Wrong diet	21	2.9
Obesity	9	1.3
Insufficient physical activity	5	0.7
Presence of other diseases	3	0.4
Whether risk factors for cancer can be controlled for preventing cancer		
Yes	559	78.4
No	43	6.0
Don't know	111	15.6
Most important personal intervention for preventing cancer		
Not smoking	357	50.1
Stress management	106	14.9
Healthy diet	93	13.0
Health controls for risk factors	60	8.4
Avoiding radiation and sunlight	36	5.0
Weight control	32	4.5
Regular exercise	22	3.1
Avoiding chemical products	7	1.0

*n=169   **Other types of cancer: Liver, bladder, thyroid, skin, esophagus, cervix and soft tissue cancers.
***The number n increased because of more than one option being marked.

Table 3. The Distribution of the General Health Questionnaire and Healthy Lifestyle Behavior Scala Score Averages of the Students According to Their Status Regarding the Presence of Cancer in Their Families of Among Their Relatives

Scalas	General	Status regarding having a cancer patient among family or relatives of the students		t	p
		Yes n=169	No n=544		
General Health Questionnaire-12					
	2.57±2.80	2.90±3.09	2.47±2.70	1.734	0.083
Healthy Lifestyle Behavior Scala-II					
Health responsibility	21.54±4.49	22.39±4.42	21.28±4.48	2.802	0.005**
Physical activity	15.98±4.44	16.39±4.55	15.86±4.41	1.355	0.176
Nutrition	20.11±3.89	20.30±4.09	20.05±3.84	0.723	0.470
Spiritual development	26.41±4.82	26.71±4.67	36.32±4.87	0.909	0.364
Interpersonal relationships	25.34±4.48	26.28±4.30	25.05±4.50	3.147	0.002**
Stress management	18.66±3.54	18.95±3.68	18.57±3.49	1.229	0.219
Total	128.07±19.1	131.04±19.78	127.15±18.83	2.317	0.021*

*p<0.05; **p<0.01

Table 4. The Comparison of the Students' Status Regarding Having a Cancer Patient Among Family or Relatives With Certain Variables

Variables	Status regarding having a cancer patient among family or relatives of the students				X^2	p
	Yes n=169	%	No n=544	%		
Academic success level						
Good	48	28.4	127	23.0	2.516	0.284
Moderate	116	68.6	391	71.9		
Bad	5	3.0	26	4.8		
Family relations						
Good	148	87.5	461	84.7	2.498	0.287
Moderate	16	9.5	77	14.2		
Bad	5	3.0	6	1.1		
General helath perception						
Good	120	71.0	396	72.8	8.852	0.012*
Moderate	38	22.4	137	25.0		
Bad	11	6.6	11	2.1		
Simoking status						
Yes	21	12.5	67	12.3	0.911	0.634
Never used	139	82.2	457	84.0		
Forwent	9	5.3	20	3.7		
Considering oneself under risk of cancer						
Yes	75	44.4	67	12.3	83.109	0.000**
No	94	55.6	477	87.7		
Having sufficient information for preventing cancer						
Yes	43	25.4	82	15.1	15.736	0.000**
Partially	105	62.2	333	61.2		
No	21	12.4	129	23.7		

*p<0.05; **p<0.01