

Health Habits and Vitamin Supplementation of Young Female Students with a Family History of Cancer Diagnosis

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Abstract. *Study Objectives:* To examine the health habits and vitamin supplementation status of female students who were diagnosed with cancer in their family history. *Methods:* The research was conducted descriptively with female students studying at a public university in the Central Anatolia region of Turkey. In the study, 324 female students who accepted the study and were diagnosed with cancer in their families were included in the sample. Numeric and percentage statistics were used to analyze the data. *Results:* People with a family history of cancer need to have cancer screening and follow lifestyle recommendations because of the high risk of cancer. *Conclusion:* In this study, it was seen that cancer diagnosis in a relative can motivate to improve health behavior in individuals.

Key words: Women, Vitamin/Mineral Supplementation, Health Habits, Biochemistry Introduction

Introduction

Cancer is among the main causes of mortality and morbidity worldwide and is an important public health problem with an increasing incidence. According to the GLOBOCAN data published by the International Agency for Research on Cancer, 19.3 million new cancer cases and approximately 10 million cancer deaths occurred worldwide in 2020. While the global cancer burden is predicted to increase by 47% and reach 28.4 million cases by 2040, it is warned that this rate will pose a greater problem for countries with low (95%) and medium (64%) human development indexes. While the most common cancer types in the world are breast, lung, colorectal, prostate, and stomach cancer, breast cancer and cervical cancer are the leading causes of cancer-related death in women. The top 5 most common cancer types in women in Turkey are breast cancer, thyroid cancer, colorectal cancer, lung cancer, and uterine cancer (1).

It is reported that 90-95% of the factors that cause cancer are caused by environmental factors, especially chemical substances and lifestyle, and 5-10% of them are of genetic origin (2). While smoking is the leading cause of cancer-related death, behavioral and diet-related risk factors such as alcohol use, high body mass index and obesity, low consumption of fruits and vegetables, and insufficient physical activity affect the development of cancer (3). Today, lifestyle and socio-cultural changes, adoption of a western-style diet and increased inactivity, late motherhood, and having few children are also reported to pose risks (1,4).

In order to prevent cancer risk, it is recommended to increase the diet containing whole grains and fibrous vegetables and fruits, as well as limit the consumption of red and processed meat, alcohol, fatty and sugary foods, and beverages containing sugar and sweeteners. In addition to these recommendations, other preventive measures are to encourage breast milk and breast-feeding, to be of normal weight, not to smoke, to do

regular physical activity, and not to use additional vitamin supplements (5).

Lemon et al., (2004) reported that 42% of women with a first-degree relative with a history of breast cancer experienced changes in healthy lifestyle behaviors such as physical activity, increasing fruit and vegetable consumption, and decreasing fat consumption and that education level increased these behaviors (6). In another study, it was reported that 84% of individuals with a familial history of breast or colorectal cancer limit their meat consumption, 90% have insufficient fiber intake, and 8% avoid processed meat (7). Haug et al., (2018)'s study, participants with a history of familial cancer, compared to participants without a history of cancer, risk perception, and hence it is more of healthy lifestyle behaviours reported they felt more ready, while another study found that the perception of this risk is determined to be inadequate in providing continuity in healthy lifestyle behaviors (8,9). Studies in the literature point out that knowing the family history of cancer is not sufficient to gain healthy lifestyle behaviors that prevent cancer. However, it is reported that adolescents with a familial cancer history have the potential to have similar life behaviors with their family members, share similar risks, and transfer risky behaviors to future generations (10). For this reason, it is important to evaluate the healthy lifestyle behaviors of young people with a family history of cancer, to identify their risky behaviors, and to encourage their participation in appropriate counseling, education, and screening programs in the early period. Young individuals, especially in order to protect themselves from cancer and improve their health quality, tend towards herbal support treatments. The purpose of the use of herbal supplements is to improve the body, to treat existing ailments, and not to use chemically accepted drugs for this purpose. However, herbal supplement products also contain great risks in terms of health, especially cancer, by creating a burden on antioxidant capacity due to the oxidant and similar chemicals they contain (11).

Although there are a limited number of studies in the literature investigating the healthy lifestyle of individuals with a familial history of cancer, it has been observed that studies have focused on breast and

colorectal cancer (6,7,12,13). In addition, there was no study investigating the healthy lifestyle behaviors of individuals/young people with a family history of gynecological cancer. In this study, it was aimed to determine the health habits and vitamin supplementation status of female students with a family history of a cancer diagnosis.

Materials and Methods

Type of Research, Population, and Sample

This study is a descriptive study. The population of the research consisted of 1612 female students studying at a public university in the Central Anatolia region. In the study, a total of 324 female students who agreed to participate in the study and met the study criteria were included in the sample.

Data Collection

The data were collected by a survey form created by the researchers by scanning the literature. The questionnaire form consists of two stages in which the socio-demographic characteristics of the students and their knowledge about cancers and nutrition are examined. The survey consists of 26 questions in total. Participants were informed about the purpose of the study, and verbal and written consents were obtained from those who voluntarily agreed to participate in the study.

The criteria for inclusion in the study are as follows.

- Voluntarily agree to participate in the research
- women over 18
- Female students reached during data collection
- Having a family history of cancer

Ethical Aspect of Research

Written permission to conduct the study was obtained from the Rectorate of Bozok University and ethical permission was obtained from the Clinical Sciences Ethics Committee of Bozok University.

Table 1. Descriptive information about female students

Socio-demographic features		n	%
Department of Education	Faculty of Nursing	62	19,1
	Health Services Vocational School	43	13,3
	Engineering faculty	38	11,7
	Faculty of Education	53	16,4
	Faculty of Economics and Administrative Sciences	58	17,9
	Faculty of Theology	30	9,3
	Faculty of Arts and Sciences	40	12,3
Economic Situation	Good	88	27,2
	Middle	206	63,6
	Bad	30	9,3
Place of Residence	District	55	17,0
	Province	101	31,2
	Metropolis	168	51,9
Shelter	State Dormitory	221	68,2
	Private Dormitory	75	23,1
	House	28	8,6
Total		324	100

Limitations of the Research

Since the data were collected only from female students of one university, it cannot be generalized to all women.

Statistical Analysis

Research data were evaluated in a computer environment with a statistical package program. In the analysis of the data, number and percentage distribution, mean±standard deviation, and frequency test were performed in continuous data.

Results

The mean age of the participants participating in the research is 19.89±1.91 (min: 18; max: 329). It was determined that the means height of the participants was 163.19±5.43 (min: 145; max: 188), and their weight means was 66.11±10.00 (min: 42; max: 110).

Descriptive information about young women in this study is shown in Table 1. The economic status of 63.6% of women is moderate, 51.9% of them live in metropolitan areas and 68.2% of them live in state dormitories.

In the study, when the distribution of women according to the types of cancer diagnosis in their families is examined, it is seen that 25.6% breast cancer, 20.7% ovarian cancer, and 19.4% cervical cancer (Table II).

When the health habits of women and their use of vitamin/mineral supplements are examined, it is seen that the consumption of pulses is high (38%). It was determined that the majority of the students did not use cigarettes (88.3%) and alcohol (98.1%). It was determined that only 27.5% of the women exercised and 16.7% took vitamin/mineral support (Table III).

When the cross-table statistical analysis results regarding the distribution of cancer types in the family history of the women and their nutritional habits were examined (Table IV), it was seen that those with

Table 2. Distribution of cancer types in the family history of women

Cancer Type	n	%
Breast Cancer	83	25,6
Uterine Cancer	59	18,2
Cervical Cancer	63	19,4
Ovarian Cancer	67	20,7
Vaginal Cancer	52	16,0
Total	324	100,0

Table 3. Health habits and use of vitamin/mineral supplements of female students

Health habits and use of vitamin/mineral supplements		n	%
Nutrition habits	Vegetable and fruit	95	29,3
	Legumes	123	38,0
	Meat and meat products	65	20,1
	Fast food	41	12,7
Smoking status	Yes	38	11,7
	No	286	88,3
Alcohol Use Status	Yes	6	1,9
	No	318	98,1
Exercise Status	Yes	82	27,5
	No	235	72,5
Status of Receiving Vitamin/Mineral Supplements	Yes	54	16,7
	No	270	83,3
Total		324	100

a family history of Breast-Uterine-Over-Vaginal Cancer ate mostly pulses. In our study, it was observed that those who received vitamin/mineral supplements had a family history of breast cancer ($p > 0.005$).

Discussion and Conclusion

Healthy lifestyle behaviors have an important place among the determinants of health. With the increasing incidence of cancer in the world and in Turkey country, the importance of health protective and improving behaviors has increased, and healthy lifestyle behaviors have become one of the subjects that are more frequently examined. Since the university years are the end of school age, they are important periods for changing lifestyle behaviors.

Lemon et al., (2004) stated that 67% of women who were diagnosed with breast cancer in a first-degree relative believed that a high-fat diet increased the risk of breast cancer, while 70% believed that a diet rich in fiber or fruits and vegetables reduced this risk. He also stated that women with a university education level and above consume more fruit and vegetables or tend to increase the amount of fruit and vegetables they consume compared to those with high school education and below. It is thought that with the increase in education level, the knowledge about the protective role of micronutrients in fruit and vegetables in improving health also increases. In other studies, the protective

effect of micronutrients in fruits and vegetables on breast cancer risk was generally supported (14,15,16). A higher intake of α -carotene-rich fruits and vegetables in early adulthood has been associated with a lower risk of breast cancer in particular (17). Due to the high level of education in the women in the study, it was observed that they had a diet rich in fiber or fruits and vegetables, which is consistent with other studies (Table III).

Çaman et al. (2014) reported that individuals with a family history of cancer did not show positive changes in their health behaviors (cessation of smoking, eating habits, physical activity) in their study evaluating the changes in health behaviors before/after education (18). Haug et. al., (2018) stated that individuals with cancer in their first-degree relatives have a higher perception of cancer risk compared to people who do not have cancer in their family, and they are ready for healthy lifestyle behaviors such as increasing physical activity, increasing fruit and vegetable consumption, and reducing alcohol (8). In this study, it was observed that the majority of women did not acquire habits such as smoking (88.3%) and alcohol (98.1%) (Table III). In this study, it can be thought that the diagnosis of cancer in a relative may provide motivation to improve health behavior in individuals, or it may be less likely to smoke because their parents do not smoke. In the study of Çaman et al. (2014), the fact that individuals with a family history of a cancer diagnosis do not tend to healthy behaviors despite being in the risky group is a subject that requires further study.

Table 4. Cross-table statistical analysis results regarding the distribution of cancer types in the family history of women and their health habits

Vegetables Fruits Legumes			Nutrition habits				Total	
			Meat and Meat Products	Fast Food				
Types of cancer in women's family history	Breast Cancer	f	20	34	17	12	83	
		%	6,2	10,5	5,2	3,7	25,6	
	Uterine Cancer	f	25	16	13	5	59	
		%	7,7	4,9	4	1,5	18,2	
	Cervical Cancer	f	18	22	10	13	63	
		%	5,6	6,8	3,1	4	19,4	
	Ovarian Cancer	f	18	24	16	9	67	
		%	5,6	7,4	4,9	2,8	20,7	
	Vaginal Cancer	f	14	27	9	2	52	
		%	4,3	8,3	2,8	6	16	
				Smoking Status				
				Yes		No		
	Breast Cancer	f	9	74		83		
		%	2,8	22,8		25,6		
	Uterine Cancer	f	7	56		63		
		%	2,2	17,3		19,4		
	Cervical Cancer	f	8	51		59		
		%	2,5	15,7		18,2		
	Ovarian Cancer	f	12	55		67		
		%	3,7	17,0		20,7		
	Vaginal Cancer	f	2	50		52		
		%	0,6	15,4		16		
				Alcohol Use Status				
				Yes		No		
	Breast Cancer	f	0	83		83		
		%	0	25,6		25,6		
	Uterine Cancer	f	1	62		63		
		%	0,3	19,1		19,4		
Cervical Cancer	f	1	58		59			
	%	0,3	17,9		18,2			
Ovarian Cancer	f	3	64		67			
	%	0,9	19,8		20,7			
Vaginal Cancer	f	1	51		52			
	%	0,3	15,7		16			
			Vitamin/Mineral Supplements Usage Status					
			Yes		No			
Breast Cancer	f	17	66		83			
	%	5,2	20,4		25,6			
Uterine Cancer	f	9	54		63			
	%	2,8	16,7		19,4			
Cervical Cancer	f	13	46		59			
	%	4	14,2		18,2			
Ovarian Cancer	f	7	60		67			
	%	2,2	15,8		20,7			
Vaginal Cancer	f	8	44		52			
	%	2,5	13,6		16			
Total							324	

It is stated that regular physical activity reduces the risk of developing breast cancer by 30–40% through its immune system enhancing function and effects on insulin levels (19). In the study, it was found that 27.5% of the students had the habit of doing sports regularly (Table III). In the study conducted by Bayrak et al (2010) on university students, the rate of doing sports was found to be 24.6% (20), and Ünalın et al. (2008) found it to be 33.4% (21). The World Cancer Research Fund (WCRF) (2018) recommends at least 30 minutes a day of moderate-intensity physical activity equivalent to brisk walking to reduce cancer risk and increase survival. Since breast cancer is one of the most common cancer types seen in women in the world and in Turkey country, the importance of physical activity should be adequately taught to female students, first of all, it should be ensured that they add value to their health and then set an example to their families and society.

In a systematic review of the Use of Vitamin and Mineral Supplements after Cancer Diagnosis in US Adults; the use of supplements has been reported to be common among cancer patients and long-term survivors. 64%–81% of US adults reported using vitamin or mineral supplements (22). In another study titled ‘Vitamin and Mineral Supplementation Use by Adults Living in Canada and the United States; the prevalence of general vitamin and mineral supplement use varies between 7–85% (23). The World Cancer Research Fund (WCRF) (2018) reports that certain types of cancer can be prevented by increasing the diet containing whole grains, fiber, vegetables and fruits, limiting the consumption of red processed meat, alcohol, fatty, sugary foods, and beverages containing sweeteners. It is not recommended to take supplements to prevent cancer. It was determined that only 16.7% of the women in the study received vitamin/mineral support. This study is in line with the recommendation of the world cancer research fund.

People with a family history of cancer need to have cancer screening and follow lifestyle recommendations because of the high risk of cancer. Providing nutrition education to university students will be effective in acquiring the right nutrition habits and leading a healthy life. University years are a good time to take

advantage of the last opportunity, even if it is a little late to give students the habit of proper nutrition and exercise. In the Cancer Early Diagnosis, Screening and Education Center (KETEM) services, individual risk assessment and more risky groups in terms of cancer are identified and training is recommended for these groups to participate in screening regularly and to direct them to healthy behaviors.

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