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The Level of Knowledge and Awareness of Male University Personnels about Adult Cancers and Cancer Screening

ABSTRACT

Objective: Cancer incidence rates have been increasing for both genders. The first aim was to determine the knowledge level of men about the types of cancers on adults. The second aim was to assess the level of knowledge of them on cancer screening programs.

Methods: This cross-sectional study was conducted at Karabük University in 2020, with 312 males who worked as academicians, administrative personnel and contract-labor. A questionnaire on sociodemographic characteristics and the knowledge of male employees about cancer and cancer screenings was applied to the participants by interviewing in the university.

Results: The mean age of male participants was 40 years. Of the participants, 39.7% knew that lung cancer is the most common type of cancer among men while 80.4% knew that breast cancer is the most common type of cancer among women. Of the participants, 42.9% heard of the Center of Early Detection and Screening of Cancer (CEDSC) and only 12.5% had a cancer screening test. The participants' answers to the question "Which cancer screening tests are made in CEDSC?" were breast cancer (55.8%), cervical cancer (35.6%), colorectal cancer (31.1%) and prostate cancer (26.0%). Mammography was the most well-known among screening tests (51.9%). The level of knowledge on colon, cervical and prostate cancer screening tests increased with age (p<0.05).

Conclusions: The level of knowledge about cancer and cancer screenings of male participants was mostly moderate. It might be possible to increase the level of knowledge on cancer and cancer screening of men by preparing educative and informative programs.

Keywords: Awareness, Cancer, Cancer Screening, Level of Knowledge, Male

Erkek Üniversite Personelinin Erişkin Kanserler ve Kanser Taraması Hakkındaki Bilgi ve Farkındalık Düzeyi

ÖZET

Amaç: Kanser insidans oranları her iki cinsiyette de artmaktadır. Bu çalışmanın ilk amacı, erkeklerin erişkinleri etkileyen kanserler hakkındaki bilgi düzeyini belirlemektir. İkinci amacı ise erkeklerin kanser tarama programları hakkındaki bilgi düzeylerini değerlendirmektir.

Gereç ve Yöntem: Kesitsel tipte olan bu araştırma 2020 yılında Karabük Üniversitesinde yapılmış olup, akademik, idari ve sözleşmeli olarak çalışan 312 erkek çalışma kapsamına alındı. Erkek çalışanlar ile üniversite ortamında görüşülerek; sosyo–demografik özellikler, kanser ve kanser taramalarına yönelik bilgi durumlarını sorgulayan anket uygulandı.

Bulgular: Çalışmamıza dahil edilen erkeklerin yaş ortalaması 40±8.81 (min-max; 19-64) yıl idi. Katılımcıların %39.7'si erkeklerde en sık görülen kanser türünün akciğer kanseri, %80.4'ü kadınlardaki en sık kanser türünün meme kanseri olduğunu bilmişlerdi. Katılımcıların %42.9'u Kanser Erken Teşhis ve Eğitim Merkezini (KETEM) duymuş ve sadece %12.5'ı kanser tarama testi yaptırmıştı. ''KETEM' de hangi kanserler taranır?'' sorusuna katılımcıların; %55.8'i meme, %35.6'sı serviks, %31.1'i kolorektal ve %26.0'ı prostat kanseri cevabını vermiştir. Mamografi tarama testleri içerisinde en iyi bilinendi (%51.9). Kolon, serviks ve prostat kanser tarama testleri üzerine bilgi seviyesinin yaşla birlikte arttığı görüldü (p <0.05).

Sonuç: Çalışmamıza katılan erkeklerin kanser ve kanser taramalarına ilişkin bilgi seviyeleri genel olarak orta düzeydedir. Eğitici ve bilgilendirici programlar hazırlanarak kanser ve kanser taraması hakkında erkeklerin bilgi düzeylerinin artırılması mümkün olabilir.

Anahtar Kelimeler: Farkındalık, Kanser, Kanser Taraması, Bilgi Düzeyleri, Erkek

INTRODUCTION

Cancer which is characterized by uncontrolled cell proliferation is among the diseases that can be prevented and treated with early diagnosis and treatment strategies (1,2). The incidence rates of cancer may vary according to countries or even different settlements of countries with the influence of heredity and environmental risk factors. Another risk factor is age and it is predicted that all types of cancer increase as individuals get older (3). Additionally, the other risk factors for cancer are male sex, obesity, insufficient physical activity, smoking and alcohol intake, malnutrition and unbalanced nutrition, exposure to carcinogens, having untreated infections, diseases related to reproductive health, ionized radiation and having a low level of income (4,5,6).

Considering that 18.1 million people were diagnosed with cancer and 9.6 of them lost their lives in 2018, it is concluded that globally, one of approximately six deaths is because of cancer (7). In the same year, 210.537 new cancer cases were reported in Turkey and 116.710 of them lost their lives according to the data. Additionally, 56.5% of new cancer cases and 64% of those who lost their lives were males (8).

The World Health Organization (WHO) has ranked the most common types of cancer among men as lung, prostate and colorectal cancers, and among women as breast, colorectal and lung cancers. Considering the distribution of deaths due to cancer, lung, liver and gastric cancers are among the top three in men while the ranking is breast, lung and colorectal cancers in women. According to the 2018 data of Turkey, the most common three types of cancer among men are lung, prostate and colorectal cancers while the ranking is breast, thyroid and colorectal cancers in women. Lung cancer is in the first place in mortalities due to cancer both among men and women (7,8,9).

It is possible that there are people with inaccurate beliefs, perceptions and fears about cancer in the society, and the number of these individuals varies based on their education levels. Cancer Screening Centers have been established all around the world to educate people about the types of cancer and screening programs for raising the awareness level of society about cancer. The early diagnosis and screening methods for breast, colon, cervical cancers and prostate have been provided free of charge by Center of Early Detection and Screening of Cancer (CEDSC) since 1996 in Turkey (10,11).

Although many studies on the types of cancer have been conducted with women, the studies that included men mostly focused on colorectal and prostate cancers. There was no comprehensive study that measured the level of knowledge of male individuals on the types of cancer affecting both men and women and cancer screening methods and simultaneously assessed these, in the literature. Thus, the aim of this study was to determine the level of knowledge of men who worked at a university about the types of cancer affecting both men and women and screening programs..

MATERIAL AND METHODS

This cross-sectional study was conducted on male employees who worked as academicians, administrative personnel and contract laborers of Karabuk University between June-August 2020. There are 1272 male employees of whom 735 are academicians, 331 are administrative personnel and 206 are contract laborers, at Karabuk University. The minimum number of people who we must reach was calculated as 296 in the sample size analysis at the confidence interval of 95% and power of 80%. In total, 338 individuals were reached, but 26 individuals who left the questionnaire incomplete were excluded from the study, and the data of 312 participants were analyzed.

Data Collection: Data were collected using a questionnaire of 31 questions that was prepared by the researchers. The first section of the questionnaire consisted of 12 questions about the sociodemographic variables of the individuals such as age, sex, marital status and economic status. The second section of the questionnaire consisted of 23 questions that aimed to assess the knowledge attitudes and behaviors about cancers such as the most common types of cancer among men and women, what to do for early diagnosis, what is done to prevent cancer and screening methods. While there were yes/no questions and multiple-choice questions, there was one matching question. The researcher visited all institutions in the university and informed the personnel about the study, and the verbal consent of the participants was obtained. The questionnaire was implemented on men who agreed to participate in the study through the face-to-face interview method following the social distancing rule. Necessary approvals were obtained from the Karabuk University deanships, and the ethical approval (2020/215) was obtained from the clinical research ethics committee for the study.

Statistical Analyses: The data were analyzed on computer using the SPSS 22.0 package program. Categorical data were presented as frequency and percentage distribution. The following classifications were made for the participants; being aged 40 years old and older, being married or single, having an educational level of 12 years and more, having a family history of cancer or not. The Pearson chi-square test and multiple logistic regression analysis were compared with various dependent variables. The significance level was $p < 0.05$.

RESULTS

The study included 312 men including 26.9 % academicians, 50.0 % administrative personnel, and 23.1% contract laborers. The mean age of the participants was found to be 40±8.81 (min-max; 19-64) years. Of them, 73.4% were married, 68.9% were university graduates, 22.4% had a good financial status, and 59.9% lived in the city center. Of them, 34% still smoked cigarettes. Of the participants, 4.2% stated that they were diagnosed with cancer and 27.6% stated that one of their relatives was diagnosed with cancer. The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic characteristics of the participants

Characteristics	n	%
Age(years)		
40 years old and younger	168	53.8
Older than 40 years	144	46.2
Marital status		
Married	229	73.4
Single	69	22.1
Divorced	14	4.5
Economic status		
Good	77	22.4
Moderate	205	65.7
Poor	37	11.9
Educational level		
Primary-middle school	35	11.2
High School	62	19.9
University	215	68.9
Your duty at the university		
Academician	84	26.9
Administrative personnel	156	50.0
Contract labor	72	23.1
Employment status of your spouse		
Yes	110	35.3
No	202	64.7
Place of residence		
City	187	59.9
District	103	33.0
Village/town	22	7.1
State of smoking		
Yes	106	34.0
No	107	34.3
Quitted	99	31.7
Have you been diagnosed with cancer?		
Yes	13	4.2
No	299	95.8
Family history of cancer		
Yes	86	27.6
No	226	72.4

The rate of those who knew that lung cancer is the most common among men was 39.7% while the rate of those who knew that breast cancer is the most common among women was 80.4% . When the most common type of cancer that causes death in men and women was questioned, 65.1% answered as lung cancer in men and 53.2% answered as breast cancer in women. Of the participants, 42.9% knew about CEDSC. The most well-known cancer screenings performed in the CEDSC unit were breast cancer (55.8%) followed by cervical cancer (35.6%), colon cancer (31.1%) and prostate cancer (26%). The most well-known screening test by the participants was mammography (51.9%) while the least-known was the prostate-specific antigen (PSA) (22.1%). The rate of those who heard of the Human papillomavirus (HPV) was 13.8%. Of the participants, 12.5% had a cancer screening before and 25.0% had a relative who had a cancer screening before. When the participants were asked about the risk factors for cancer, they answered as stress and sadness (78.5%), cigarette (77.2%), genetic factors (68.9%) and alcohol (61.5%). Of the participants, 67.6% stated that they get information about cancer from the internet and 67.0% stated that they want to be educated in detail. (Table 2).

There were no differences between age groups, marital status, educational level and family history of cancer and having had a cancer screening and having knowledge of mammography (p>0.05). The rates of knowledge of men who were 40 years old and older about fecal occult blood test (FOBT), colonoscopy, papsmear and prostate specific antigen (PSA) was higher (p<0.05). Additionally, there was a significant correlation between the state of knowing FOBT and colonoscopy of the participants who got more than 12 years of education (p<0.05). (Table 3). The rate of knowing mammography, colonoscopy, FOBT and PSA was higher among academic personnels than other employees (p <0.05).

DISCUSSION

In this study, it was found that the level of knowledge of men about cancer and cancer screenings was moderate, but the recognition of cancer screening tests was parallel to age and educational level. Although the demographic distribution of cancer cases, the society's perception of risk, and diversity and availability of screening programs vary according to countries, it has been for a long time that lung cancer is the most common type of cancer among men and breast cancer is the most common type of cancer among women (4,5,7). Therefore, many countries conduct regular studies to determine the knowledge, attitudes and behaviors of individuals about cancer in the early diagnosis of these two types of cancer.

It has been known for a long time that lung cancer is the most common type of cancer in men while breast cancer is the most common type of cancer in women (12). Of men who participated in this study, 39.7% knew that lung cancer is the most common type of cancer among men while 80.4%

Table 2. Knowledge and behavior of participants about cancers and cancer screening

Questions	n	%
What is the most common cancer among men?		
Lung	124	39.7
Prostate	143	45.8
Colon	31	9.9
Gastric	14	4.5
Which cancer is the most common cause of death among men?		
Lung		
Prostate	203	65.1
Colon	45	14.4
Gastric	47	15.1
What is the most common cancer among women?	17	5.4
Lung		
Breast	25	8.0
Cervical	251	80.4
Gastric	31	9.9
Which cancer is the most common cause of death among women?	5	1.6
Lung		
Breast	76	24.4
Cervical	166	53.2
Gastric	50	16.0
	20	6.4
Have you heard of the CEDSC unit?		
Yes	134	42.9
No	178	57.1
Which cancer screenings are performed in CEDSC?		
Breast cancer	174	55.8
Cervical cancer	111	35.6
Colon cancer	97	31.1
Prostate cancer	81	26.0
Which early cancer screening tests do you know?		
Mammography (breast cancer)	162	51.9
Smear test (cervical cancer)	81	26.0
FOBT (colon cancer)	102	32.7
Colonoscopy (colon cancer)	113	36.2
PSA (prostate cancer)	69	22.1
Have you heard of the HPV vaccine?		
Yes	43	13.8
No	269	86.2
What are the risk factors for cancer?		
Cigarette	241	77.2
Alcohol	192	61.5
Stress and sadness	245	78.5
Genetic factors	215	68.9
Nutritional habits	172	55.1
Other	27	8.7
Have you had a cancer screening before?		
Yes	39	12.5
No	273	87.5
Do you have a relative who had a cancer screening?		
Yes	78	25.0
No	234	75.0
Where did you get information about cancer?		
Healthcare personnel	108	34.6
Tv/radio	162	51.9
Internet	211	67.6
Book/newspaper/magazine	106	34.0
Do you want to get detailed information about cancers?		
Yes	209	67.0
No	103	33.0

Table 3. Comparison between some independent variables and knowledge of cancer screening tests

Independent Variables	n	Performing cancer screening		Chi-square test		Multiple Logistic Analysis	
		n	%	χ^2	p	OR 95 % CI	p
Age							
Younger than 40 years old	168	15	8.9			1	
40 years old and older	144	24	16.7	4.25	0.039	1.62 (0.98-2.65)	0.056
Marital status							
Married	229	29	12.7			1	
Single	83	10	12.0	0.02	0.884	1.32 (0.76-2.31)	0.318
Education							
12 years and less	97	10	10.3			1	
12 years and more	215	29	13.5	0.61	0.432	1.03 (0.62-1.70)	0.891
Family history of cancer							
Yes	86	11	12.8			1	
No	226	28	12.4	0.009	0.932	0.80 (0.48-1.33)	0.401
Knowing FOBT							
Age							
Younger than 40 years old	168	40	23.8			1	
40 years old and older	144	62	43.1	13.05	<0.001	2.27 (1.32-3.89)	0.003
Marital status							
Married	229	86	37.6			1	
Single	83	16	19.3	9.24	0.002	0.58 (0.30-1.13)	0.111
Education							
12 years and less	97	24	24.7			1	
12 years and more	215	78	36.3	4.04	0.044	1.97 (1.11-3.49)	0.020
Family history of cancer							
No	226	73	32.3			1	
Yes	86	29	33.7	0.57	0.811	1,162 (0.66-2.02)	0.598
Knowing Colonoscopy							
Age							
Younger than 40 years old	168	47	28.0			1	
40 years old and older	144	66	45.8	10.70	0.001	2.08 (1.23-3.51)	0.006
Marital status							
Married	229	94	41.0			1	
Single	83	19	22.9	8.69	0.003	0.605(0.32-1.13)	0.117
Education							
12 years and less	97	26	26.8			1	
More than 12 years	215	87	40.5	5.40	0.020	2.09 (1.20-3.65)	0.009
Family history of cancer							
No	226	81	35.8			1	
Yes	86	32	37.2	0.05	0.822	1.17(0.68-2.01)	0.57
Knowing Pap smear							
Age							
Younger than 40 years old	168	21	12.5			1	
40 years old and older	144	60	41.7	34.31	<0.001	6.45 (3.32-12.51)	<0.001
Marital status							
Married	229	63	27.5			1	
Single	83	18	21.7	1.07	0.300	1.79 (0.86-3.74)	0.118
Education							
12 years and less	97	27	27.8			1	
More than 12 years	215	54	25.1	0.25	0.612	1.17 (0.65-2.13)	0.586
Family history of cancer							
No	226	60	26.5			1	
Yes	86	21	21.4	0.14	0.701	0.77 (0.2-1.439	0.421
Knowing Mammography							
Age							
Younger than 40 years old	168	80	47.6			1	
40 years old and older	144	82	56.9	2.70	0.100	1.62 (0.98-2.65)	0.056
Marital status							
Married	229	118	51.5			1	
Single	83	44	53.0	0.05	0,817	1.32 (0.76-2.31)	0.318
Education							
12 years and less	97	51	52.6			1	
More than 12 years	215	111	51.6	0.02	0.877	1.03 (0.62-1.70)	0.891
Family history of cancer							
No	226	120	53.1			1	
Yes	86	42	48.8	0.45	0,501	0.80 (0.48-1.33)	0.401
Knowing PSA							
Age							
Younger than 40 years old	168	28	16.7			1	
40 years old and older	144	41	28.5	6.27	0.012	1.87 (1.03-3.39)	0.040
Marital status							
Married	229	57	24.9			1	
Single	83	12	14.5	3.85	0.050	0.69 (0.32-1.45)	0.329
Education							
12 years and less	97	18	18.6			1	
More than 12 years	215	51	23.7	1.03	0.309	1.47 (0.78-2.75)	0.225
Family history of cancer							
No	226	50	22.1			1	
Yes	86	19	22.1	0.001	0.995	1.03 (0.56-1.92)	0.902

stated that breast cancer is the most common type of cancer among women. The reason why men who participated in this study had such a high rate of knowledge about the fact that the most common type of cancer in women is breast cancer might be that awareness studies and public service announcements on cancer in Turkey focus on the type of cancers experienced by women.

Considering the studies that assessed the individuals' knowledge level of cancer mortality in the literature, they had similar results. Bray et al., found that lung cancer was a primary cause of death. They also found that the mortality of lung cancer was the highest among men while the mortality of breast cancer was the highest among women (12). In a study conducted in the USA, it was reported that the most common type of cancer among women was breast cancer and the most common cause of death was lung cancer (13). Haydaroğlu et al. examined the records on cancer between 1992 and 2017 and found that the type of cancer with the highest mortality rate was lung cancer in men and breast cancer in women (14). In line with the results of the abovementioned studies, 65.1% of the participants in this study knew that lung cancer has a high mortality rate among men and 53.2% knew that breast cancer has a high mortality rate among women.

According to the 2000 data of the Global Cancer Observatory (GLOBOCAN), 1.2 million people got affected by lung cancer and 1.05 million people got affected by breast cancer while the 2018 data of the same research group showed that the number of people who got affected from lung cancer increased to 2.1 million and the number of people who got affected from breast cancer increased to 2.09 million (15,16). Although the incidence frequency of cancer is increasing day by day both in Turkey and the world, it has been detected that individuals' participation in cancer screening programs is insufficient. In the study by White et al. (17) that examined the cancer screening tendencies between 2000 and 2015, it was found that colorectal cancer screenings increased, breast cancer screening did not change and cervical cancer screening tended to decrease. Tekpınar et al., found that only 23.4% of the participants had a cancer screening in their study on cancer screenings (18). Erdem et al. reported that 60.6% of the participants had never heard of CEDSC while 32.8% knew about the types of cancer screened in CEDSC (19). Thus, it was found that 42.9% of men knew about CEDSC in this study. Additionally, the rates of participating in cancer screening programs of themselves and their relatives were low (12.5% and 25.0%, respectively). The participants' answers to the question "Which cancer screenings are performed in CEDSC?" were breast cancer (55.8%) followed by cervical cancer (35.6%), colon cancer (31.1%) and prostate cancer (26.6%). The results of this study and the abovementioned studies indicate

that the level of awareness of individuals about cancer and cancer screenings is low.

The role of cancer screening tests is undeniably important in the early diagnosis of cancer and decreasing cancer-related morbidity and mortality. Therefore, screening tests specific to types of cancer have been developed. Mammography and breast self-examination are commonly used screening methods in breast examination while the papsmear test is used in cervical cancer, PSA is used in prostate cancer, and FOBT and colonoscopy are used in colorectal cancers. It was determined that the participants in this study had knowledge of mammography the most among the cancer screening tests (51.9%). On the other hand, it was observed that the participants did not have sufficient knowledge of tests used as screening methods such as smear test, colonoscopy and PSA. These results have shown that the level of knowledge of the participants in this study on breast cancer is high while their level of knowledge on colon, cervical and prostate cancers is relatively low. On the other hand, it was revealed in this study that assessed the effect of age on the level of knowledge on cancer that the level of knowledge on colon, cervical and prostate cancer screening tests was higher in older ages. Considering that the frequency to apply to a health institution increases with age, it can be concluded that aging might affect the level of knowledge of individuals about cancer. Moreover, the present study revealed that academic personnels know better about cancer screening tests. Thereby it can be thought that studying as academician and following current innovations may increase awareness about cancers and its screening tests.

Tobacco, overweight, UV radiation, alcohol, insufficient physical activity and infections are the main preventable risk factors for cancer (4,6,20). Thus, public knowledge of risk factors may play an important role in preventing cancer. In the study by Poudel et al. (21) conducted in Nepal, it was found that the participants knew that cigarettes, alcohol intake, obesity and physical inactivity are the main risk factors for cancer (92%, 82.3%, 58.6% and 51.3%, respectively). In the study by Erdem et al., the participants regarded cigarette (78.5%), anxiety and sadness (71.2%), genetic factors (61.5%), alcohol (58.4%) and diet style (47.2%) as the risk factors for cancer (19). Similar to these studies, 77.2% of men in the present study knew that cigarettes might cause cancer while 61.5% knew that alcohol might cause cancer.

The first limitation of this study is that no study examined the knowledge of men about the types of cancer that affect both men and women and cancer screenings in the literature. Therefore, the results of this study were only be compared to a few studies. Another limitation is that this study included men who only worked at the university; thus, the results cannot be generalized to society.

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