RESEARCH ARTICLE

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Awareness of Patients Applying to a Cancer Research Center About Early Diagnosis of Cancer

ABSTRACT

Objective: This study was conducted to investigate the level of knowledge, attitudes and behaviors of patients about cancer types, symptoms, and early diagnosis methods.

Methods: Individuals over the age of 18 who agreed to participate in the study were included in this descriptive study. Those who had any psychiatric disease and treated for cancer were excluded from the study. In order to collect the data, a questionnaire form was applied by face-to-face interview method. SPSS-24 program was used for statistical analysis.

Results: A total of 324 volunteers, 266 women (82.1%) participated in the study. The mean age of the participants was 49.04±6.19, 263 of them were married (81.2%), 71.3% were primary school graduates and 37.3% had cancer in one of their first degree relatives. A statistically significant correlation was found between having cancer in the family and having cancer screening regularly (p=0.038). There was no significant relationship between gender, marital status and regular cancer screening (p>0.05). Of the participants 18.2% thought that cancer screening did not improve health, and 11% thought that we did not need to be screened because we were not at risk.

Conclusions: The level of knowledge and awareness of the participants about cancer types, screening methods and screening programs was found to be low. In order to implement national cancer control programs, public knowledge and awareness of cancer should be increased. Further studies should be carried out so that the importance of early diagnosis can be learned by the society and made it an individual responsibility.

Keywords: Cancer Screening, Early Diagnosis, Mammography, Fecal Occult Blood Test.

Kanser Araştırma Merkezine Başvuran Hastaların Kanserin Erken Tanısı Konusunda Farkındalıkları

ÖZET

Amaç: Kanser, mortalite ve morbiditesinin yüksek olması, tedavi maliyeti, süresi ve yan etkileri nedeniyle önemli halk sağlığı sorunlarından birisidir. Bu nedenle kanserden korunma öncelikli olarak ele alınması gereken bir konudur. Bu çalışma, hastaların kanser türleri, belirtileri, erken tanı yöntemleri hakkındaki bilgi düzeylerini, tutum ve davranışlarını araştırmak amacıyla yapılmıştır.

Gereç ve Yöntem: Tanımlayıcı tipteki bu çalışmaya, Kanser Erken Teşhis, Tarama ve Eğitim Merkezi'ne başvuran ve araştırmaya katılmayı kabul eden 18 yaş üstü bireyler dahil edildi. Herhangi bir psikiyatrik hastalığı olanlar ile kanser tanısıyla tedavi görenler çalışma dışı bırakıldı. Verileri toplamak için ilgili literatüre uygun olarak oluşturulmuş bir anket yüz yüze görüşme yöntemi ile uygulandı. Verilerin istatistiksel analizinde SPSS 24 programı kullanıldı.

Bulgular: Çalışmaya 266 kadın(%82.1), 58 erkek(%17.9) toplam 324 gönüllü katıldı. Katılımcıların yaş ortalaması 49.04±6.19 olup, 263'ü evli(%81.2), %71.3 'ü ilkokul (n=231) mezunu, %37.3 'ünün (n=121) birinci derece akrabalarından birinde kanser hastalığı mevcuttu. Ailede erken yaşta kanser görülmesi ile düzenli olarak kanser taraması yaptırma arasında istatistiksel olarak anlamlı ilişki saptandı (p=0.038). Cinsiyet ve medeni durum ile düzenli kanser taraması yaptırma arasında anlamlı ilişki saptanmadı (p>0.05). Katılımcıların %18.2'si kanser taramalarının sağlığı geliştirmediğini, %11'i risk altında olmadığımız için tarama yaptırmamıza gerek olmadığını düşünmekteydi.

Sonuç: Çalışmamızda katılımcıların, kanser türleri, tarama yöntemleri ve tarama programları hakkında bilgi düzeyi ve farkındalıkları düşük bulunmuştur. Ulusal kanser kontrol programlarının uygulanabilmesi için halkın bilgi düzeyinin ve kanser farkındalığının arttırılması sağlanmalıdır. Erken tanının öneminin toplum tarafından öğrenilerek, bireysel bir sorumluluk haline getirilebilmesi için daha geniş çaplı çalışmalar yapılmalıdır.

Anahtar Kelimeler: Kanser Tarama, Erken Tanı, Mamografi, Gaitada Gizli Kan.

INTRODUCTION

Cancer is one of today's most important public health problems due to its high mortality and morbidity, cost of treatment, duration, and side effects. One out of every five people in the world gets cancer in their lifetime, and 1 in 8 men and 1 in 11 women die of cancer. Worldwide, the total number of people alive within five years of being diagnosed with cancer, called the 5-year prevalence, is estimated to be 50.6 million (1).

According to the latest estimates of the global cancer burden by the International Agency for Research on Cancer (IARC), a subsidiary of the World Health Organization, 19.3 million new cases and 10 million deaths were reported in 2020. In parallel with the world's increasing population, the number of new cases increased to 19.3 million in 2020, and the number of deaths increased to ten million. Cancer incidence in total is 201 per hundred thousand (1).

The top 5 most common cancers in men are lung, prostate, colorectal, bladder, and stomach cancer, respectively. It is estimated that at least 40% of cancers in men are associated with smoking. The top 5 most common cancers in women are breast, thyroid, colorectal, lung, and uterine cancer, respectively. Breast cancer continues to be one of every four women's cancers and is responsible for 1 in 6 cancer-related deaths. Approximately 2.3 million new cases of breast cancer will be reported in 2020. It is seen that 1 out of every eight cancers diagnosed is breast cancer.

For this reason, the prevention of cancer is an issue that should be handled with priority. Risk factors should be evaluated for primary prevention. The five main behavioral risk factors that cause one-third of deaths from cancer are; high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use. Obesity increases the risk of stomach, colon, kidney, gall bladder, breast, endometrium, ovarian and cervical cancers. It increases the risk of men's colon, rectum, pancreas, stomach, kidney, gall bladder, and prostate cancers. The total number of cancer cases attributed to obesity is estimated to be around 5,896. Cancers caused by obesity primarily affect women. If cancer is detected early, the chance of treatment increases, and its progression can be prevented with simple precautions. Life expectancy and quality of life are higher in early diagnosed cancers. Treatment and maintenance costs of the disease are less than late-diagnosed cancers (2). Secondary prevention is achieved especially by screening the groups that are at risk (3). Cancer Early Diagnosis, Screening and Training Centers (CEDSTC) have been established in our country to detect cancer cases early and reduce cancer deaths. For this purpose, breast, cervical, and colorectal cancers are screened at CEDSCs.

Unless the public is aware of the importance of early diagnosis, screening programs can't be successful. Adult individuals are more open to learning and applying what they have learned when they feel ready and aware of what and why they need to know. Healthcare workers play an essential role in the early diagnosis and prevention of cancer by increasing society's awareness with community-based screening and effective training methods.

This study was conducted to investigate individuals' knowledge levels, attitudes, and behaviors about cancer types, symptoms, and early diagnosis methods. We aimed to evaluate the awareness of cancer screening of the participants.

MATERIAL AND METHODS

Study Design and Sample Selection: Approval of the local noninvasive research ethics committee was obtained before starting the study and informed consents of the participants who agreed to participate were obtained after being given brief information about the purpose of the study.

Individuals over 18 years old who were registered to Cancer Early Diagnosis, Screening and Training Center (CEDSTC) and who agreed to participate in the study between June 2019 and February 2020 were included in this cross-sectional descriptive study. Those with any psychiatric disease and those diagnosed with cancer and treated were excluded from the study. In order to collect the data, a questionnaire created following the relevant literature is used. The questionnaires were applied to the participants by face-to-face interview method. Filling the questionnaire took approximately ten minutes for each participant. Twentyeight participants were excluded because they refused to answer some questions.

Socio-demographic Characteristics Questionnaire: The survey consisted of four functional domains: socio-demographic characteristics, knowledge, attitude, and practice related questions. The demographic characteristics form included questions regarding age, gender, marital status, education level, economical situation, chronic illness, whether they have any relatives with cancer, whether they have cancer screening at regular intervals. They were asked which types of cancer they have information about and which types of cancer can be diagnosed early with screening tests. The knowledge level of cancer symptoms, risk factors, and screening methods were questioned. It was also questioned whether they received doctor's advice on cancer screening and whether they followed it if they did.

After questionnaire administration to the participants, verbal information about cancer types, risk factors, prevention methods, and breast self-examination (BSE) were given.

Statistical analysis was performed using the Statistical Package for Social Sciences version 24 (IBM, Armonk, NY) software to evaluate the data. Descriptive statistics were expressed as mean, standard deviation, minimum-maximum values, frequency, and percentile. Kolmogorow-Smirnow test was used to determine the normal distrubution of the data set. Chi-square test was used to compare the knowledge of cancer types, which types of cancer can be diagnosed early by screening and gender, marital status, whether they have any relatives with cancer. A p value of less than 0.05 was considered statistically significant with a 95% confidence level.

RESULTS

A total of 324 volunteers, 266 women (82.1%), 58 men (17.9%), participated in the study. The mean age of the participants was 49.04 ± 6.19 (min: 30-max: 67) years old and 263 participants were married (81.2%). Of the participants, 71.3% were primary school (n = 231), 7.7% secondary school (n = 25), 11.4% high school (n = 37), 9.6% were university (n = 31) graduates. One of the first-degree relatives of 37.3% (n = 121) participants had cancer or died at an early age due to cancer.

The types of cancer that the participants had information about are summarized in Table 1. Breast cancer was the most known type of cancer and uterine and cervical cancers followed this. The most widely known types of cancer were female cancers. Although prostate and skin cancers are quite common, they were the least known types of cancer. Awareness of cancer types and awareness of whether early detection is possible with screening are shown in Figure 1.

Table 1. Awareness of cancer types

Cancer Type	Aware		Not aware	
	Number	%	Number	%
Breast cancer	293	90.4	31	9.6
Uterine and cervical cancer	217	67.0	107	33.0
Colorectal cancer	113	34.9	211	65.1
Lung cancer	187	57.7	137	42.3
Leukemia	124	38.3	200	61.7
Brain cancer	112	34.6	212	65.4
Thyroid cancer	88	27.2	236	72.8
Prostate cancer	107	33.0	217	67.0
Skin cancer	37	11.4	287	88.6

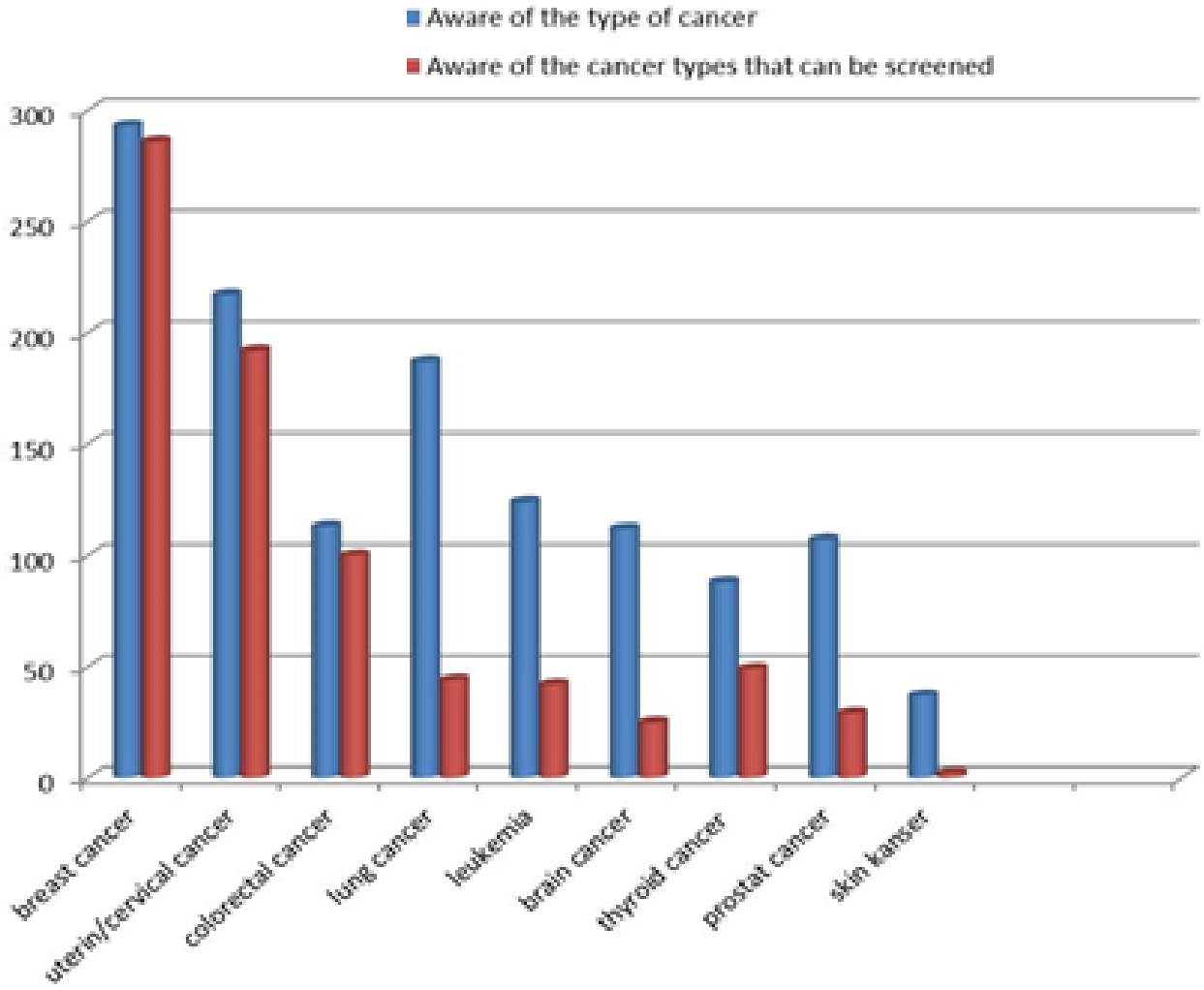

Figure 1. Awareness of cancer types and awareness of whether early detection is possible with screening are shown. Breast cancer was the most known type of cancer and uterine and cervical cancers followed this.

The knowledge of participant about which types of cancer could be diagnosed early with screening tests is summarized in Table 2. Breast cancer was in the first place in knowing the types of cancer that can be detected early by screening. Awareness of cancer screening methods is shown in Figure 2. Mammography was the most known cancer screening method.

Table 2. Awareness of cancer types that can be screened

Cancer type that can be screened	Aware		Not aware	
	Number	%	Number	%
Breast cancer	286	88.3	38	11.7
Uterine and cervical cancer	192	59.3	132	40.7
Colorectal cancer	100	30,8	224	69,2
Lung cancer	44	13.6	280	86.4
Leukemia	42	13.0	282	87.0
Brain cancer	25	7.7	299	92.3
Thyroid cancer	49	15.1	275	84.9
Prostate cancer	29	9.0	295	91.0
Skin cancer	2	0.6	322	99.4

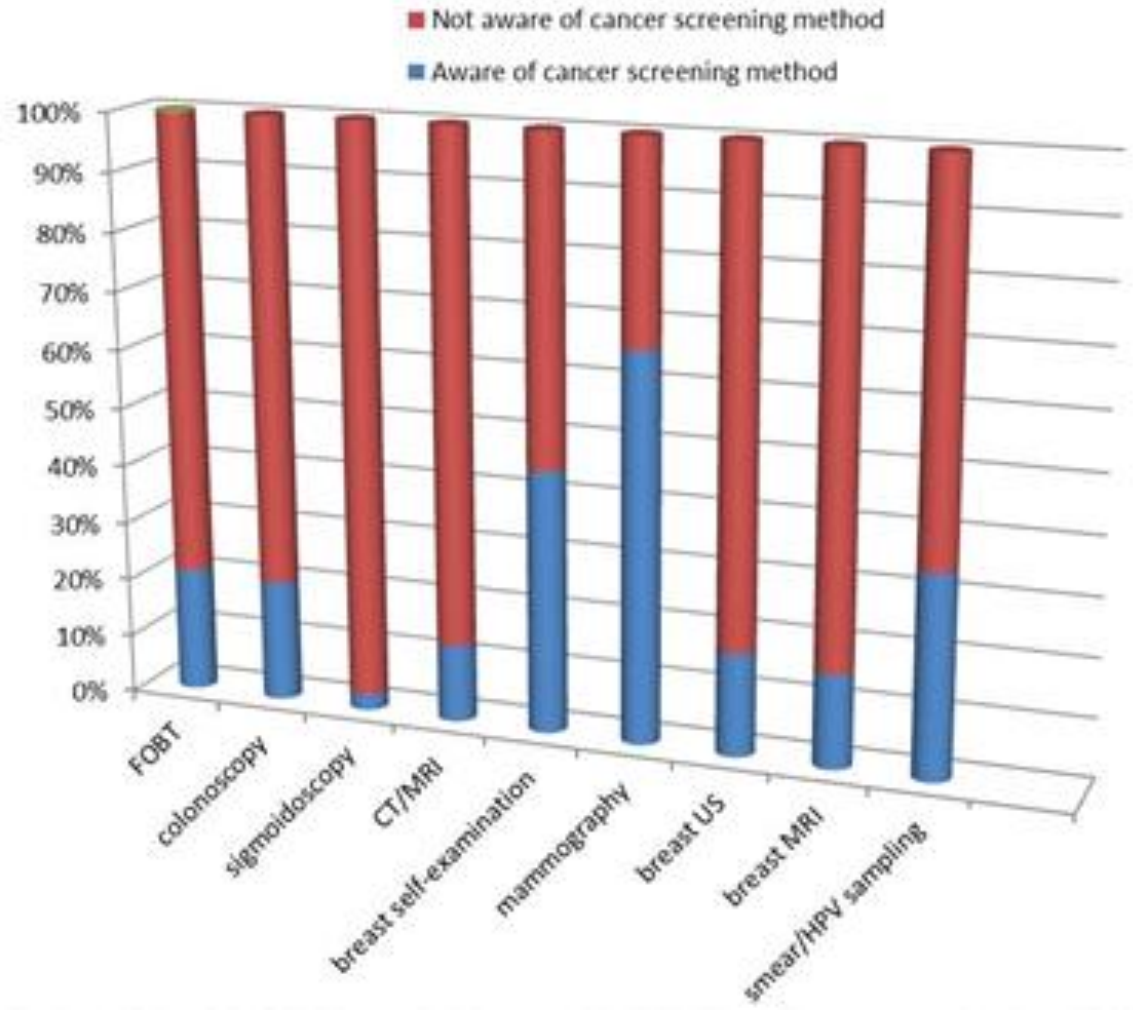

Figure 2. Awareness of cancer screening methods is shown. Mammography was the most known cancer screening method. This was followed by breast self-exam and HPV sampling.

When the symptoms of cancer disease were questioned, palpable mass was 78.7% (n = 255), unusual bleeding 37.7% (n = 122), weakness 37% (n = 120), constipation 29.3% (n = 95) and cough was given 21.3% (n = 69) as an answer. Only 2.5% (n=8) believed there was not any symptom suggesting cancer. Of the participants 32.4% (n = 105) stated that they had periodic cancer screening, 84% (n = 272) received a physician's advice on this issue, and 75.9% (n = 246) followed this recommendation. The answers of participants about cancer screening methods are listed in Table 3. The most known cancer screening method was mammography (66.0%).

Table 3. Awareness of cancer screening methods

Cancer Screening method	Aware		Not aware	
	Number	%	Number	%
FOBT	69	21.3	255	78.7
Colonoscopy	67	20.7	257	79.3
Sigmoidoscopy	9	2.8	315	97.2
CT/MR	43	13.3	281	86.7
Breast Self-Examination	145	44.5	179	55.2
Mammography	214	66.0	110	34
Breast US	57	17.6	267	82.4
Breast MR	52	16.0	272	84
Smear / HPV sampling	112	34.6	212	65.4

FOBT:Fekal occult blood test, CT: Computed tomography, MR: Magnetic resonance, US: Ultrasonography, HPV: Human papilloma virus

Smoking 83.3% (n = 270), alcohol 59.9% (n = 194), fiber-free food 20.1% (n = 65), obesity 34% (n = 110), chemicals 36.7% (n = 119) were specified as cancer-causing factors. Of the participants, 13.6% (n = 44) stated that they smoke, 38.6% (n = 125) of them had a chronic disease, 41% (n = 133) of them stated that they regularly use some drugs.

Unfortunately, 18.2% (n = 59) thought that cancer screening does not improve health and quality of life, and 11.1% (n = 36) thought that they do not need screening because they were not at risk of cancer.

The vast majority of the participants (96.0%) (n = 311) believed that the life expectancy of cancer patients who were diagnosed and treated early will be prolonged and (99.1%) (n = 321) their quality of life is better than delayed diagnosed patients.

There was no statistically significant relationship between gender and their knowledge about cancer types and which types of cancer can be diagnosed early by screening ($p>0.05$). There was no statistically significant relationship between marital status and knowledge of cancer types and screening tests ($p>0.05$). A statistically significant relationship was found between having a cancer patient at an early age in the family and regular cancer screening ($p = 0.038$). There was no statistically significant relationship between gender, education level, marital status and getting regular cancer screening ($p>0.05$).

DISCUSSION

In the fight against cancer, which is accepted as the disease of the age and is a global problem, the United Nations called on all countries to prepare and implement their own national cancer control programs in 2011 (4). With the effective implementation of well-structured screening programs that can reach the target audience, prevention and early diagnosis of cancers are aimed. Social beliefs, values and insufficient information are among the important factors affecting screening for early cancer detection. Better communication with healthcare professionals and facilitating access to healthcare services will support to increase cancer screening rates (5).

In a study conducted in cancer early diagnosis and screening center, 55.2% of the participants think that cancer is a fatal disease, and 80.9% are afraid of getting cancer. However, 61.3% of the participants do not do anything to prevent cancer, 81.4% have never had a cancer screening before. Scan rates are well below target (6). Contrary to our study, it was found that women were more likely to have information about cancer, concern about cancer, and take precautions and screening for cancer than men.

In a cervical cancer screening study conducted with 409 women, 34.2% of the participants had no idea about cervix cancer, and 96% of them never had screening. Of the participants, 70.8% did not get information about breast and cervix cancer in the last 1 year; 68.6% of them stated that cervix cancer could be a type of cancer that can be diagnosed early with screening. Awareness of breast and cervix cancer is low and there is a lack of supplementary information (7).

In addition to these low awareness rates, the health literacy levels of individuals should also be raised. Individuals with high self-risk perception, who know their health responsibilities, will be more willing to screen for cancer. In addition, it is necessary to increase the delivery capacities of cancer screening services in local health institutions. Just giving the information that cancer can be cured by early diagnosis motivates people to have screening.

In a study conducted with 500 female patients, 90% of the participants knew how to perform breast self-examination (BSE) and 35% applied it. 15% of the participant accept mammography, 19.8% accept clinical breast examination as a screening method. Of the participants 20.6% did not do BSE because they did not know how to do it. The most common obstacle to breast cancer screening is that patients were unaware of screening methods (8).

As a result of the lack of information about the scanning method, the target audience for scans cannot be reached. Social media is considered the main source of information. The rate of reaching healthcare professionals as a source of information is low. The importance of primary health care for

early diagnosis of cancer should be emphasized more intensely. Every patient, applying to the outpatient clinic for any reason, should be evaluated as an opportunity and informed about cancer screenings at regular intervals.

With a group of 600 people over 50 years old, a colorectal cancer screening study was conducted. Of the participants, 65% stated that they had information about colorectal cancer, 40% knew the fecal occult blood test (FOBT) as a screening method, and 95% did not receive medical advice on this issue. It was found that there was a lack of information about the risk factors of colorectal cancer and the importance of early diagnosis. Therefore participation in the screening program was limited. Most of the participants thought that the incidence of this cancer was very low, so that screening could be neglected (9). Good training opportunities should be provided for both physicians and patients, and proper doctor-patient communication should be established to increase awareness of this issue.

For healthcare workers to advise patients about cancer screening, their knowledge and awareness must be high. In a study conducted on this subject, it was found that half of the participants who were healthcare workers had insufficient knowledge about cancer screening methods (50.3% for Pap smear, 57.5% for mammography, 68.4% for colonoscopy, and 54.3% for fecal occult blood). Elderly healthcare workers, those with a family history of cancer, and those with more than 11 years of work experience applied cancer screening tests more frequently than others. Our study found that the rate of participation in cancer screening programs was statistically significantly higher in patients with a family history of cancer. In addition, it was found that there was no statistically significant difference in being a health worker in the case of having a cancer screening test or not (10).

In a study questioning common female cancers, the participants knew 60% cervix, 24% breast, 4% ovarian cancers, and 12% did not know. When the early symptoms of breast cancer are questioned, 66% answered breast mass. Similarly, in our study, the answer was a small palpable mass (78.6%). Based on this awareness, the importance of breast self-examination can be emphasized more clearly (11).

While the majority (60%) answered the question of the causes of cancer as having no idea, the most frequent answers in our study were smoking and alcohol intake (83.7%, 60.4%). The rate of those who did not have any idea about breast cancer screening methods was 72%. A group of 30% was not sure whether it could be early diagnosed by screening. These results show that there is an apparent lack of information. In addition, 40% of the participants stated that they did not receive any doctor's advice about cancer screening. In our study, the rate of those who received physician advice was 84.4% (11).

Participation in breast cancer screening programs and BSE rates were higher among those with a high level of education (12). In another study, the frequency of breast self-examination was higher in women with a family history of breast cancer (13). Family physicians working especially in low socioeconomic regions and lower education levels have to tell the importance of early breast cancer diagnosis and adequately explain breast self-examination and other screening tools.

In the United States, cities, where colorectal cancer screening programs were provided by family physicians and not provided, are compared. The rate of awareness and application was higher in the group receiving service on this subject by family physicians (14).

Cancer screening services are one of the leading service areas in family medicine in our country. Family physicians take the necessary care to carry out our national screening program. In our study, a significant relationship was found between receiving a doctor's advice and having screening, but its effect on regular screening was not found to be statistically significant. To ensure the continuity of cancer screening services, physicians should advise their patients at regular intervals.

In a study conducted with people over the age of 50, it was found that patients preferred to focus on primary prevention methods such as developing a healthy lifestyle rather than screening to prevent colorectal cancer (15). It was found that those who knew that colorectal cancer is one of the most common types of cancer were screened more (16).

The sources of motivation for cancer screening are symptoms, fear of getting cancer, feeling obliged to be healthy for the family, and obtaining a doctor's advice. The barriers to screening are the absence of symptoms, uncomfortable screening test procedures, lack of information, low perceived risk of cancer, insecurity in healthcare providers, fear of being diagnosed with cancer, and embarrassment. Increasing motivation and increasing barriers will only be possible with reaching sufficient awareness and knowledge level. The sense of health promotion leads to the need to take responsibility for one's health. People who have adequate information about scans are aware of their responsibilities and volunteer for scans.

This study has some limitations. It was performed on a limited number of participants who applied to a cancer screening center. Nevertheless, their level of knowledge was found to be relatively low. If this study was done in a rural area, their level of knowledge and awareness would probably be lower. Another limitation was that the study was conducted by focusing only on knowledge levels about common types of cancer. If other rare types

of cancer were included, the knowledge level would probably be much lower. A study involving a more comprehensive patient series and knowledge levels of rare cancer types may be the subject of future research.

In conclusion, the level of knowledge and awareness about cancer types, screening methods and screening programs were found to be quite low in our study. In order for the national cancer control programs to be implemented properly, the public's level of knowledge and cancer awareness should be increased. The role of family physicians, who are the first medical contact point of the individual with the health system, informing and encouraging patients about cancer early diagnosis and screening programs in primary care is very valuable. Identifying target populations and implementing screening methods that can be done in family health centers is a very effective and practical step to increase screening rates. Large-scale studies should be conducted to learn the importance of early diagnosis by society and make it an individual responsibility.

Conflict of Interest: Authors declared no conflict of interest.

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