IJCMBS

Original Article

doi.org/ 10.5281/zenodo.17679359 JCMBS 2025; 5(3):142-151

Comparing Knowledge and Attitudes on Cancer Screening with and without Family Cancer History

Ailesinde Kanser Tanısı Olan ve Olmayan Bireylerin Kanser Tarama Programlarına Yönelik Bilgi ve Tutumlarının Karşılaştırılması

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Abstract

Background: This study aims to compare participation rates in cancer screening programs, as well as knowledge and attitudes toward these programs, among individuals with and without a family history of cancer. It also examines sociodemographic factors and explores potential reasons for any observed differences.

Material and Methods: A questionnaire consisting of 52 questions was administered to participants aged 30–70. The questionnaire included sociodemographic data, the Cancer Knowledge Scale, and the Cancer Attitude Scale. A total of 420 participants completed the survey, with 210 individuals having a family history of cancer and 210 without.

Results: The participation rate in cancer screening tests was significantly higher among individuals with a family history of cancer, 34.3% compared with those without 19.5% ($p = 0.001$). The mean score on the knowledge scale was 19.6 ± 4.5 for individuals who participated in screening tests, compared to 16.6 ± 5.7 for those who did not ($p < 0.001$). The mean score on the attitude scale was 69.0 ± 8.3 for individuals who participated in screening tests, compared to 66.8 ± 9.2 for those who did not ($p = 0.025$). A moderate positive correlation was found between knowledge and attitude scale scores for all participants ($r = 0.374$, $p < 0.001$).

Conclusions: Individuals with a personal or family history of cancer exhibit higher participation rates in cancer screening programs. Furthermore, increased knowledge about screenings is associated with more positive attitudes toward them, indicating that targeted public
education initiatives are warranted to bolster screening uptake.

Keywords: 'Health Knowledge, Attitudes, Practice', 'Early Detection of Cancer', 'Colonoscopy', 'Mammography', 'Papanicolaou Test'

ÖZ

Amaç: Ailesinde kanser tanısı olan ve olmayan bireylerin kanser tarama programlarına katılımlarının, kanser tarama programı hakkındaki bilgi ve tutumlarının sosyodemografik veriler ışığında karşılaştırılması ve olası nedenlerinin irdelenmesi amaçlanmaktadır.

Gereç ve Yöntem: Sosyodemografik veriler, Kanser Taramalarına Yönelik Bilgi Ölçeği ve Kanser Taramalarına Yönelik Tutum Ölçeğinden oluşan toplamda 52 soruluk anket 30–70 yaş katılımcılara yapılmıştır. Ailesinde kanser öyküsü olan 210 ve ailesinde kanser öyküsü olmayan 210 kişiye ulaşılarak toplamda 420 anket verisi ile çalışma sonlandırılmıştır.

Bulgular: Tarama testlerine katılım oranı ailede kanser öyküsü olanlarda %34,3 iken, ailede kanser öyküsü olmayanlarda %19,5'tir ($p = 0,001$). Tarama testi yaptıranlarda bilgi ölçeği puan ortalaması 19,6 ± 4,5 iken yaptırmayanlarda 16,6 ± 5,7'dir ($p < 0,001$). Tarama testi yaptıranlarda tutum ölçeği puan ortalaması 69,0 ± 8,3, yaptırmayanlarda ise 66,8 ± 9,2'dir ($p = 0,025$). Bilgi ve tutum ölçek puanları arasında tüm bireylerde anlamlı orta düzeyde pozitif korelasyon bulunmuştur ($r = 0,374$, $p < 0,001$).

Sonuç: Ailesinde ya da kendisinde kanser tanısı olan bireylerin kanser taramalarına katılım oranlarının da daha yüksek olduğu gözlemlenmiştir. Bireylerde taramalara yönelik bilgi düzeyi arttıkça tutumunda aynı şekilde iyileştiği istatiksel olarak ortaya konulmuştur. Bu durum taramaya yönelik tutumunun iyileşmesinin bilgi düzeyinin artırılmasıyla mümkün olduğunu bizlere göstermektedir. Bilgi düzeyinin artırılması içinse toplumun eğitilmesi esastır.

Anahtar kelimeler: 'Sağlık Bilgisi, Tutum, Uygulama', 'Kanserin Erken Teşhisi', 'Kolonoskopi', 'Mamografi', 'Papanicolaou Testi'

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***Cite as*:** Adiyaman Yildirim. U et al. Comparing Knowledge and Attitudes on Cancer Screening with and without Family Cancer History. JCMBS 2025; 5(3):142-151 doi.org/ 10.5281/zenodo.17679359

Highlights

- Cancer incidence was higher among individuals with a family cancer history.
- Female participants demonstrated higher knowledge and screening engagement.
- A positive association was observed between knowledge and screening behavior.

Introduction

Cancer is the second leading cause of death worldwide and in Turkey, following cardiovascular diseases. In 2022, approximately 9.7 million people died from cancer globally, and cancer accounted for one in every six deaths (1,2). Increasing awareness of cancer screening programs is one of the most effective strategies in the fight against cancer (3). In Turkey, screening programs for breast, cervical, and colorectal cancer are provided free of charge (4). To ensure the success of these programs, it is essential to screen 70% of the targeted population. According to data from the Ministry of Health of the Republic of Turkey, while 3.5 million cancer screenings were performed in 2020, 4.5 million individuals were included in the screening program in 2021 (3).

Family medicine serves as the primary point of contact within preventive health services and plays a vital role in the implementation of cancer screening programs. Educating the public about screening programs based on age groups and guiding them to the appropriate screenings are essential responsibilities. Specifically, closely monitoring individuals with a family history of cancer and including them in screening programs is of great importance (5,6).

This study aims to compare the knowledge and attitudes toward cancer screening in individuals with first, second and third degree relatives diagnosed with cancer, with those without a family history. Additionally, the study seeks to investigate the reasons behind these differences. With the understanding that increasing cancer screening rates will reduce late-stage cancer cases and related deaths, the goal is to raise awareness among the public about the importance of screening programs (7).

Material and Methods

Study design

This cross-sectional study was conducted with volunteer participants aged 30–70 year who sought care at the units under the Department of Family Medicine, Samsun University Faculty of Medicine (including the Family Medicine Outpatient Clinic, Complementary and Integrative Medicine Outpatient Clinic, Training Family Health Center, Home Healthcare Unit, Obesity Outpatient Clinic, Smoking Cessation Outpatient Clinic, and Palliative Care Service) between May 15 and October 15, 2024. This age range was selected because the cancer screening programs of the General Directorate of Public Health of the Ministry of Health of Turkey begin at age 30 and end at age 70 (4).

To determine the required size, data from the previous year was considered. The total number of individuals who applied to the units between May 15 and October 15, 2023, was 7.963. Based on sample size calculations, it was determined that a minimum of 367 participants would be needed to achieve a 95% confidence level with a 5% acceptable margin of error. To account for a potential 10% missing data (n = 37), the minimum target was set at 404 participants, divided equally into a study group (n = 202) and a control group (n = 202). Ultimately, 210 participants with a family history of cancer and 210 without a family history were included, resulting in a total of 420 participants. All eligible participants were enrolled in the study and successfully completed the survey. Those with a family history of cancer were also considered according to their first-degree (mother, father, child), second-degree (sibling, grandfather, grandmother, grandchild), and third-degree (uncle, aunt, nephew, niece) relatives.

The questionnaire consisted of 12 sociodemographic questions and two standardized scales: the Cancer Screening Knowledge Scale (CKS) and the short form of the Cancer Screening Attitude Scale (CAS). The sociodemographic variables were determined in accordance with findings from previous studies and models used in national demographic surveys. The CKS, a 25-item scale with a 3-point Likert-type response format (1 = True, 2 = False, and 3 = I do not know), was validated by Yıldırım Öztürk et al. (Cronbach's α = 0.89). Correct answers were scored as 1, while incorrect and "I do not know" answers were scored as 0. Three items with a negative meaning (A2, A10, A22) were reverse-coded. The total score ranged from 0 to 25 (8). The CAS, a 15-item Likert-type scale validated by Yıldırım Öztürk et al. (Cronbach's α = 0.95), assesses attitudes toward cancer screening. Responses

were scored on a scale from 1 to 5, with negative items (B10, B11, B12, B13, B14, B15) reverse coded. The total score ranged from 15 to 75 (9).

Participants completed a 52-question questionnaire using the face-to-face interview method, which took an average of 20 minutes. Each participant was enrolled only once to prevent data duplication. Identity information was not requested to ensure anonymity. Participants were informed that the data would be used solely for scientific purposes and provided their consent. No benefits were provided to participating physicians.

Statistical analysis

Data analysis was performed using SPSS version 28, with R Studio used for verification and Z-diff correlation analysis. The Kolmogorov–Smirnov test and Skewness–Kurtosis values were used to assess normality. Descriptive statistics (mean and standard deviation) were calculated for continuous variables that followed a normal distribution. Age groups were classified as 30–39, 40–49, 50–59, and 60–69 year, due to differences in the types of cancer screening offered at each age. The Student's t test was used to compare parametric differences between two independent groups, while the one-way ANOVA test was used for comparisons involving more than two groups. The Tukey test was employed for post hoc analyses, as the variances were homogeneous. The Bonferroni correction was applied to p values. The illiterate group was excluded from the one-way ANOVA test for education level. The Pearson correlation test was used to assess the correlation between two parametric variables, and Fisher's Z transformation was used to evaluate differences in correlations between groups. Categorical data were presented as frequency distributions, and the chi-square test was applied. p values <0.05 were considered statistically significant.

Ethical Approval

For this study was granted by the Samsun University Non-Interventional Clinical Research Ethics Committee on May 8, 2024 (decision number 2024/9/2). The study title was revised and re-approved by the committee on October 9, 2024 (decision number 2024/18/12). Informed consent was obtained from all participants.

Results

A total of 420 participants, 210 with a family history of cancer and 210 without, were included in the study. The average age of individuals with a family history of cancer was 45.8 ± 10.0 year while the average age of individuals without a family history of cancer was 46.8 ± 10.4 year (p = 0.304). The most frequent age group among those with a family history of cancer was 40–49 year (31.9%), while 33.8% of individuals without a family history of cancer were also in the 40–49 age range (p = 0.697). Regarding participation in screening tests, 34.3% (n = 72) of individuals with a family history of cancer underwent screening, compared to 19.5% (n = 41) of individuals without a family history of cancer (p = 0.001). The distribution of sociodemographic characteristics and responses to the screening program based on family history of cancer is shown in **(Table 1).**

Table 1. Sociodemographic by Family History

Characteristic	**Those with a family history of cancer, *n(%)***		**Those without a family history of cancer, *n(%)***		***p/x2* value**
Sex					
Male	77	(36.7)	103	(49.1)	0.010/6.572
Female	133	(63.3)	107	(50.9)	
Age (year)					
30–39	66	(31.4)	56	(26.7)	
40–49	67	(31.9)	71	(33.8)	0.697/1.435
50–59	54	(25.7)	55	(26.2)	
60–69	23	(11.0)	28	(13.3)	
Marital status					
Married	160	(76.2)	169	(80.5)	0.567/1.136
Single	28	(13.3)	23	(11.0)	
Widowed	22	(10.5)	18	(8.6)	

Educational status					
Primary education and below	41	(24.3)	56	(26.7)	0.008/9.636
High school	40	(19.0)	61	(29.0)	
Higher education	119	(56.7)	93	(44.3)	
Income status					
Less than minimum wage Minimum	53	(25.2)	73	(34.8)	0.009/9.488
wage-poverty line	61	(29.0)	71	(33.8)	
Above the poverty line	96	(45.7)	66	(31.4)	
Cancer history					
None	10	(4.8)	6	(2.9)	0.547/1.206
Past	196	(93.3)	201	(95.7)	
Current	4	(1.9)	3	(1.4)	
Screening participation					
Yes	72	(34.3)	41	(19.5)	0.001/11.63
No	138	(65.7)	169	(80.5)	5
Who suggested the screening test?					
Family physician	61	(29.0)	66	(31.4)	
Another doctor	33	(15.7)	25	(11.9)	0.878/1.785
Non-physician health professional	7	(3.3)	9	(4.3)	
Friend/Family	17	(8.1)	18	(8.6)	
Not recommended	55	(26.2)	58	(27.6)	
Other	37	(17.6)	34	(16.2)	

Participation in specific cancer screenings revealed that 13.7% (n = 22) of individuals over 50 year of age underwent fecal occult blood testing (FOBT) or colonoscopy, 35.1% (n = 59) of women over 40 year of age had mammography, and 22.9% (n = 55) of women over 30 year of age underwent Pap smear testing. Additionally, 3.3% of participants reported undergoing tests not included in the official screening program, such as computed tomography, hemograms, tumor markers, PSA, and ultrasound, mistakenly believing them to be part of the screening program. The distribution of screening tests performed, based on the target population, is provided in **(Figure 1).**

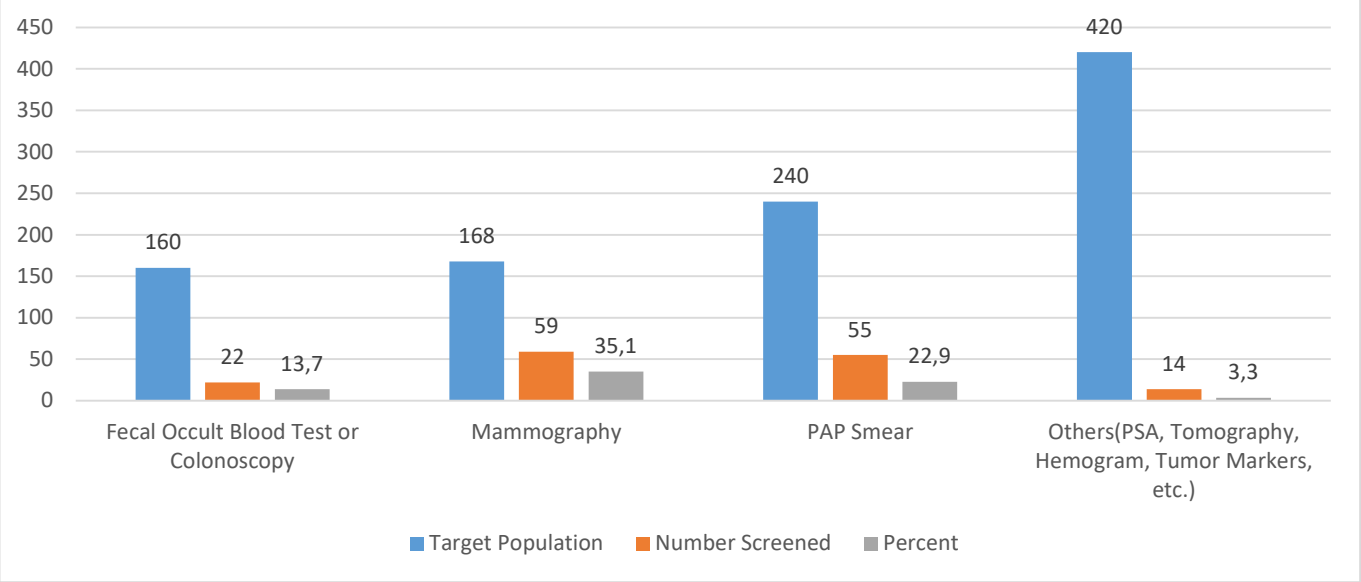

Figure 1. distribution of scans by target population

Among individuals with a current or past cancer diagnosis, the screening rate was 56.5% (n = 13), which was statistically significantly higher than the screening rate among individuals without a cancer diagnosis or history (p = 0.001). Cancer screening rates based on participants' family history are shown in **(Table 2).**

Table 2. Screening participation according to family history

Characteristic	Frequency of screening *n* (%)	*p*/*x2* value
Individuals with no family history of cancer (*n* = 210)	41 (19.5)	0.001/11.635
Individuals with a personal diagnosis or history of cancer (*n* = 23)	13 (56.5)	0.001/10.853
Individuals with a first-degree relative diagnosed with cancer (*n* = 90)	34 (37.8)	0.009/6.886
Individuals with a second-degree relative diagnosed with cancer (*n* = 66)	22 (33.3)	0.200/1.646
Individuals with a third-degree relative diagnosed with cancer (*n* = 76)	27 (35.5)	0.061/3.507

Abbreviations: Because participants may have more than one relative diagnosed with cancer, the total exceeds 420.

The mean Cancer Screening Knowledge Scale (CKS) score for individuals without a family history of cancer was 17.0 ± 5.8. No statistically significant difference was found in the average CKS scores between those with and without a family history of cancer (p = 0.120). The Cancer Attitude Scale (CAS) score for individuals with a third-degree relative diagnosed with cancer was 69.0 ± 7.6, and a statistically significant difference was observed based on whether there was a cancer diagnosis in a third-degree relative (p = 0.047). The mean CKS and CAS scores based on family history are presented in **(Table 3).**

Table 3. Mean CKS and CAS scores according to family history

Characteristic	CKS score mean ± *SD*	*p*/*x2* value	CAS score mean ± *SD*	*p*/*x2* value
Individuals with no family history of cancer (***n*** = 210)	17.0 ± 5.8	0.120/1.558	66.8 ± 9.6	0.170/1.374
Individuals with a personal diagnosis or history of cancer (*n* = 23)	18.0 ± 4.2	0.563/0.579	69.3 ± 7.2	0.311/1.015
Individuals with a first-degree relative diagnosed with cancer (*n* = 90)	17.9 ± 5.2	0.332/0.972	67.9 ± 9.5	0.534/0.622
Individuals with a second-degree relative diagnosed with cancer (*n* = 66)	17.3 ± 5.0	0.926/−0.093	67.6 ± 6.7	0.878/0.153
Individuals with a third-degree relative diagnosed with cancer (*n* = 76)	18.2 ± 5.3	0.152/1.434	69.0 ± 7.6	0.047/2.002

Abbreviations: Because participants may have more than one relative diagnosed with cancer, the total exceeds 420.

A significant positive correlation was found between the CKS and CAS scores in all participants (n = 420; r = 0.374, p < 0.001). This positive correlation was also significant among individuals with a family history of cancer (n = 210; r = 0.429, p < 0.001) and among those without a family history of cancer (n = 210; r = 0.429, p < 0.001). The difference in correlation coefficients between individuals with and without a family history of cancer was not statistically significant (Z diff = 1.260, p = 0.208). The correlation between CKS and CAS scores, based on the presence or absence of a family history of cancer, is shown in **(Table 4).**

Table 4. Correlation of CKS and CAS Scores According to Family History

Characteristic	r	p	Z diff / p value
All individuals (*n* = 420)	0.374	<0.001	
Those with a family history of cancer (*n* = 210)	0.429	<0.001	1.260/0.208
Those without a family history of cancer (*n* = 210)	0.323	<0.001	

The mean CKS score for individuals who had undergone a screening test was 19.6 ± 4.5, compared with 16.6 ± 5.7 for those who did not undergo screening. This difference was statistically significant (p < 0.001). Similarly, the mean CAS score for individuals who had undergone screening was 69.0 ± 8.3, whereas those who did not undergo

screening had a mean score of 66.8 ± 9.2 (p = 0.025). The average CKS and CAS scores based on participant characteristics are shown in **(Table 5).**

Table 5. Mean CKS and CAS scores by sociodemographic

Characteristic	CKS score	p /t-F value	CAS score	p /t-F value
Sex				
Male	15.6 ± 6.2	<0.001/5.804	67.1 ± 9.8	0.503/0.670
Female	18.7 ± 4.5		67.7 ± 8.4	
Age (year)				
30–39	16.7 ± 6.2	0.145/1.806	67.8 ± 8.4	0.830/0.294
40–49	17.1 ± 5.4		67.4 ± 8.7	
50–59	18.3 ± 5.1		67.4 ± 9.5	
60–69	17.9 ± 4.9		66.4 ± 10.5	
Marital status				
Married	17.4 ± 5.4	0.205/1.588	67.8 ± 8.8	0.213/1.554
Single	16.3 ± 6.5		65.5 ± 10.0	
Widowed	18.3 ± 4.7		66.9 ± 9.9	
Educational status				
Primary education and below	16.5 ± 5.7	0.021/7.727	65.5 ± 11.3	0.476/1.486
High school	16.8 ± 5.3		67.7 ± 9.1	
Higher education	18.7 ± 4.9		69.2 ± 6.4	
Income status				
Less than minimum wage	16.8 ± 5.4	0.066/2.730	66.9 ± 9.7	0.082/2.511
Minimum wage-poverty line	16.9 ± 5.6		66.4 ± 9.9	
Above the poverty line	18.2 ± 5.4		68.6 ± 7.5	
Family history of cancer				
Yes	17.0 ± 5.8	0.120/1.558	68.0 ± 8.5	0.170/1.374
No	17.8 ± 5.3		66.8 ± 9.6	
Screening participation				
Yes	19.6 ± 4.5	<0.001/5.826	69.0 ± 8.3	0.025/2.248
No	16.6 ± 5.7		66.8 ± 9.2	

Discussion

Our study found that participants with a family history of cancer had a statistically significantly higher rate of having undergone at least one screening test compared with those without a family history of cancer. This finding is consistent with the results of Baycelebi et al. and Discigil et al., who also reported higher rates of screening test utilization among individuals with a family history of cancer (10,11). In contrast, two studies by Maras et al. and Achat et al. found no association between a family history of breast cancer and mammography use (12,13). This may be explained by the fact that the study conducted by Maras et al. in 2001 is relatively outdated, and approximately one-third of its participants were either illiterate or had only completed primary education (12). Similarly, the findings of the study by Achat et al., also conducted in 2001 in Australia, may have been influenced by its temporal context, cultural differences, and the age distribution of the participants, who were between 50 and 69 years of age (13). Although some studies show no association, our data support existing literature suggesting that a family history of cancer leads to increased utilization of preventive healthcare services.

In our study, the screening rate was found to be significantly higher, particularly among individuals with a personal cancer diagnosis or a first-degree relative diagnosed with cancer. This finding aligns with several studies indicating that individuals with a personal or family history of cancer are more likely to undergo screening tests (14,15,16). This is likely because individuals with prior cancer diagnoses or those with first-degree relatives diagnosed with cancer are more aware of the issue and more vigilant about their health check-ups due to concerns about cancer recurrence.

When asked about who recommended the screening test, the most common response was “family physician,” followed by “not recommended.” In contrast, the study by Ozsoyler et al. found that the most frequent source of information about cancer screenings was television, followed by family physicians and the Internet (17). Other studies have similarly identified television as the primary source of information, followed by healthcare professionals (11,18,19). While our study shows that the family physician is the most important source of advice, the fact that "not recommended" is the second most frequent answer may indicate a deficiency in informing the public and inviting them to screening programs.

In our study, a quarter of participants reported having undergone at least one cancer screening test. By comparison, Karakoyunlu Sen et al. and Uysal et al. found screening rates of 39.4% and 37.9%, respectively (20,21). Screening rates in our study were lower than those reported in these studies. Notably, our survey asked this question in an open-ended manner, and no responses indicating breast self-examination or clinical breast examination were provided. This suggests that when participants think of cancer screening, tests such as FOBT, colonoscopy, mammography, and Pap smear are the first to come to mind.

When examining screening rates by target population, it was found that 13.7% of individuals over 50 year of age had undergone FOBT or colonoscopy. In comparison, Bekdemir Ak et al. reported that 1.0% of participants had undergone FOBT and 2.1% had undergone colonoscopy; Ozsoyler found that 10.0% underwent FOBT and 4.3% underwent colonoscopy; Baycelebi et al. reported 10.8% for FOBT and 14.5% for colonoscopy; and Tas et al. found that 17% of participants had undergone one of the colorectal cancer screening tests (10,15,17,22). Colorectal cancer screening programs start at age 50, and the relatively low rates in the study by Bekdemir Ak et al. are attributed to the fact that only one-tenth of the participants were over 50 years old (4,15). In our study, 35.1% of women over 40 year of age had participated in mammography screening at least once. The literature shows a wide range of mammography participation rates, including 9.4%, 19.8%, 62.2%, and 23.9% (15,17,23,24). The high rate in Sahin et al.’s study is attributed to the fact that the study was conducted on healthcare professionals (23). In our study, the rate of Pap smear testing in women over 30 year of age was found to be 22.9%. In the literature, these rates vary, with reported values of 24.9%, 19.4%, and 51.3% (10,18,25). Akyuz et al.’s study, which focused on individuals aged 19–61, reported a higher Pap smear rate, likely because it was conducted in an obstetrics and gynecology outpatient clinic (25). According to 2022 data from the Turkish Statistical Institute, the mammography screening rate was 34.4%, while the Pap smear rate was 35.6% (26). It is noteworthy that the 2024 data did not show higher rates than those reported in 2022, indicating the need for increased focus on these areas.

No statistically significant differences were found in the total scores for CKS and CAS between individuals with a personal or family history of cancer and those without a family history. Ozsoyler et al. found a significantly higher rate of knowledge about cancer screening in individuals with a family history of cancer compared to those without (17). Supporting this view, another study found that individuals with a family history of breast cancer had better knowledge levels regarding breast cancer (16). Similarly, Yegenler’s research indicated that individuals with a personal history of cancer had more positive attitudes toward cancer screenings (27). In Acıkgoz et al.’s study,

individuals with cancer were found to have a higher level of cancer awareness (28). Our study also found a significant positive correlation between CKS and CAS scores, suggesting that as a person's level of knowledge about cancer screenings increases, their attitude toward cancer screenings also improves.

In our study, CKS scores were significantly higher with increasing education level, though no significant difference was found in CAS scores. Similarly, Bekdemir Ak et al. found that cancer screening knowledge scores increased with higher education levels (15). A study by Chali et al. showed that more positive attitudes toward cervical cancer screening was observed with higher education (29). A systematic review by Wools et al. revealed that lower education levels reduce participation in colorectal cancer screening (30). Individuals with higher levels of education tend to have better health awareness. This study also demonstrates that knowledge about cancer screenings is closely associated with educational level. Therefore, planning stepwise and needs-based educational programs targeting individuals with lower educational backgrounds is important for increasing awareness and participation rates in the general population.

Men utilize preventive healthcare services less than women (31,32). In our study, three-quarters of those who underwent screening tests were women and this difference was statistically significant. Our data support the notion that women benefit more from preventive healthcare services, and the lower utilization of healthcare services by men places them at a disadvantage. Globally, cancer mortality rates are higher in men than in women (33). In a study by Sahin, there were fewer male participants, and their total scores on the attitude scale toward cancer screenings were also lower (34). Our study indicates that women's level of knowledge regarding cancer screenings is statistically significantly higher than that of men. Another study found that men had higher awareness of breast cancer than women (35). The disparity in knowledge may be due to the greater number of screening programs available for women compared to men.

Individuals who undergo screening exhibit significantly higher levels of knowledge and more positive attitudes toward cancer screening compared to those who do not. Bekdemir Ak et al. found higher levels of knowledge among those who underwent screening in their study (15). Increasing public knowledge through education about screening programs can help improve attitudes and participation rates. Oruc et al. found that screening behaviors improved when individuals were informed by family medicine units (36). Primary care physicians play a crucial role in raising awareness and encouraging the public to participate in regular screening programs.

Study limitations

One limitation of our study is the lack of comparable data for the total CKS scores in literature, as this scale is relatively new. Other limitations are include being single-centered and cross-sectional design., and using Turkish language. Multicenter or longitudinal future studies are needed to close the gaps of our study. Additionally, due to the unavailability of individual-level raw data, we were unable to perform and present a scatterplot with a regression line for the correlation between CKS and CAS scores. This limits the visual and statistical exploration of the relationship between these two variables.

The novelty of using the CKS in this study also constitutes one of its strengths. Another strength is that this is one of the few studies to compare and examine knowledge and attitudes toward cancer screening based on whether participants have a family history of cancer.

Conclusion

In our study, we observed that individuals with a family or personal history of cancer had higher rates of participation in cancer screening programs. Similar to prior literature, participation rates in screening programs were found to be below the targeted level in our study. We statistically demonstrated that as individuals' knowledge about screenings increases, their attitudes toward them also improve, with a positive correlation. This suggests that enhancing attitudes toward screening can be achieved by increasing knowledge. To improve knowledge levels, public education is essential, and greater emphasis should be placed on educational initiatives related to preventive healthcare services.

Acknowledgements: *None.*

Ethical Approval: *For this study was granted by the Samsun University Non-Interventional Clinical Research Ethics Committee on May 8, 2024 (decision number 2024/9/2). The study title was revised and re-approved by the committee on October 9, 2024 (decision number 2024/18/12). Informed consent was obtained from all participants.*

Author Contributions: *Concept: UAY, OO. Literature Review: UAY, OO. Design: UAY, OO. Data acquisition: UAY, OO. Analysis and interpretation: UAY, OO. Writing manuscript: UAY, OO. Critical revision of manuscript: UAY, OO.*

Conflict of Interest: *The author(s) do not have any potential conflict of interest regarding the research. authorship and/or publication of this article.*

Data Availability: *The data used to support the findings of this study are available from the corresponding author upon request*

Financial Disclosure: *No financial support was received for this study.*

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