

Prevalent practice and attitude toward Cancer Screening among Saudi population in Eastern Region

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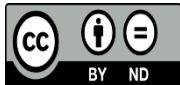


Keywords:

Cancer screening, Knowledge, Attitude, Barriers, Saudi Arabia

ABSTRACT

Globally, cancer is acknowledged as a serious health problem. Breast cancer is the most prevalent type of cancer, followed by colorectal and cervical cancers. Early identification can enhance patients' quality of life, and screening tests are crucial in lowering morbidity and mortality. The purpose of this study is to identify the obstacles to and attitudes toward cancer screening in Saudi Arabia's eastern province. Between August and November 2022, a cross-sectional survey was carried out among residents of Saudi Arabia's eastern province. A self-administered questionnaire that was distributed online was used to gather the data. There were a total of 761 respondents to the study. 75% of the participants were aware of the screening tests for early cancer detection. About 39.9% of respondents guessed correctly that breast cancer screening should occur between the ages of 40 and 54, but few knew how to retest. More over half, 60.9%, were unaware of the early identification of cervical cancer, while 68.2% were unaware of the early detection of colon cancer. 30% of respondents understood there were no impediments to screening, whereas 18.2% were worried about the findings. Our findings revealed that the majority of the public had limited knowledge and attitudes towards cancer screening, but that no substantial impediments or difficulties existed. Providers of healthcare should spotlight their patients, particularly those at the greatest risk. More initiatives to educate the public about screening testing are required.



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1. INTRODUCTION

On a global scale, cancer is the second leading cause of mortality. It is responsible for around 9.6 million fatalities in 185 countries [1]. Several forms of cancer are associated with smoking, alcohol use, a poor diet, inactivity, viral and bacterial infections, urban air pollution, ionizing radiation, and indoor smoke [1], [2]. In Saudi Arabia, 10,518 people died from cancer in 2018, while 24,485 new cases were diagnosed [3]. In Saudi Arabia, breast cancer is the most prevalent kind of cancer, followed by colon cancer and prostate cancer [4]. Cancer screening has a crucial role in lowering morbidity and mortality, and early identification may enhance the quality of life for cancer patients [5]. In Saudi Arabia, screening for cancer is not well known [6]. Dread of cancer complications, such as fear of the test and hospitals, is the primary reason lowering screening in the general population [4].

The second most frequent cancer in women globally and the fifth most common cause of cancer mortality is breast cancer [7]. Since the 1970s, there have been fewer deaths from breast cancer because to advancements in screening methods and adjuvant medication [8- 10]. Saudi Arabia has seen a rise in breast cancer cases recently [10], [11]. The delay in cancer diagnosis and identification via screening is the root of this rise in the number of instances of breast cancer [12]. An essential component of early detection is raising knowledge of the cancer's early warning signals among medical professionals, such as nurses, physicians, and other healthcare professionals, as well as the general public. Mammography, clinical breast examinations, and breast self-exams are examples of secondary preventative strategies for early detection of breast cancer [13].

Colon cancer, which differs from breast cancer, is the fourth-leading cause of cancer-related mortality globally [14]. In the United States, colon cancer is ranked as the third most prevalent cancer in both men and women [15]. Today, it is more often diagnosed since screening tests for colonoscopy are widely available. Recent research from Saudi Arabia revealed a consistent rise in colon cancer incidences, with males experiencing the disease at a greater rate than women [16]. Colorectal cancer screening tests are not well known in Saudi Arabia, and there are no structured screening programs or resources to encourage the adoption of screening practices by the general public [17- 19]. The best methods for colorectal screening are colonoscopy every 10 years, flexible sigmoidoscopy every 10 years with an annual FIT test, and fecal immunochemical testing (FIT) every year [20].

After breast and colon cancer, cervical cancer is the third most frequent malignancy among women globally. 569,000 new cases are diagnosed annually [21], [22]. The reported incidence of cervical cancer in Saudi women is low as a result of the absence of national screening programs. According to the Saudi National Cancer Registry, cervical cancer affected 1.5% of women who received a cancer diagnosis in 2015. Due to extensive cervical cancer screening, the number of instances of cervical cancer in the United States has dropped by more than 50% over the previous 30 years [23]. The screening of women for cervical cancer using a papanicolaou (Pap) smear at age 21 significantly lowers the incidence of cervical cancer death [24].

Public awareness of cancer screening initiatives has a big influence on lowering cancer-related morbidity and death as well as disease prevention. In the eastern part of Saudi Arabia, this research intends to assess the amount of community awareness of cancer screening, community attitudes about screening, and obstacles to cancer screening among Saudi people.

2. Material and Methodology

2.1 Study Design and Study design and population:

A cross-sectional study was conducted among citizen in the eastern region of Saudi Arabia over the period August- November 2022.

2.1 Data collection:

A standardized, self-administered questionnaire was issued online between August and November of 2022 to gather the data. The questionnaire has 25 questions organized into 4 sections. The first section consisted of nine sociodemographic questions. The second section examined knowledge with eight questions, the third section measured attitude with seven questions, and the fourth section rated perceived obstacles to cancer screening.

2.3 Data analysis:

Utilizing the Statistical Package for the Social Sciences, the data were examined (SPSS). At P values 0.05, the mean and standard deviation used to derive continuous data, frequencies and percentages for categorical data, and Chi-square were deemed statistically significant.

Scoring ranges from 0 to 10 show that the higher the score, the greater the understanding about cancer screening. Using 60% of the total score, individuals were classed as having inadequate knowledge if their score ranged from 0 to 6 points, while 7 to 10 points indicated acceptable knowledge. Scoring ranges from 0 to 7 indicate that the higher the score, the more positive the attitude toward cancer screening. Using 60% of the total score, participants were classified as having a negative attitude if their score fell between 0 and 4 points, whereas 5 to 7 points indicated a positive attitude.

3. Results

Table 1 shows the knowledge, attitude, and perceived obstacles of 761 participants in relation to cancer screening. The majority of participants (43.6%) are female (70%), and the majority of them are between the ages of 21 and 30. In terms of employment, 34.6% were jobless. In addition, 24.8%, 8.7%, and 43.2% of respondents, respectively, reported having chronic illnesses, receiving a cancer diagnosis, and having a family history of the disease.

Table 1: sociodemographic data	
Variables	N 761 (100%)
Age group	
• ≤20 years	113 (14.8%)
• 21 – 30 years	332 (43.6%)
• 31 – 45 years	157 (20.6%)
• 46 – 60 years	139 (18.3%)
• >60 years	20 (2.6%)
Gender	
• Male	228 (30%)
• Female	533 (70%)
Educational level	
• Intermediate or less	24 (3.2%)
• Secondary level	208 (27.3%)

• Diploma holder	80 (10.5%)
• Bachelor degree	384 (50.5%)
• Master degree	52 (6.8%)
• PhD degree	13 (1.7%)
Employment status	
• Unemployed	263 (34.6%)
• Student in the health field	146 (19.2%)
• Student in the non-health field	90 (11.8%)
• Employed in the health field	54 (7.1%)
• Employed in the non-health field	208 (27.3%)
Suffering from any chronic diseases	
• Yes	189 (24.8%)
• No	572 (75.2%)
Diagnosed with any type of tumor (benign/malignant)	
• Yes	66 (8.7%)
• No	695 (91.3%)
Family history of any type of tumor	
• Yes	329 (43.2%)
• No	432 (56.8%)

Figure 1 revealed that benign breast cancer was the most often diagnosed kind of cancer (30.3%), followed by malignant colorectal cancer (22.7%) and benign cervical cancer (12.7%). In contrast, malignant breast cancer (20.7%) was the most common kind of cancer detected in the participant's family, followed by benign breast cancer (15.7%).

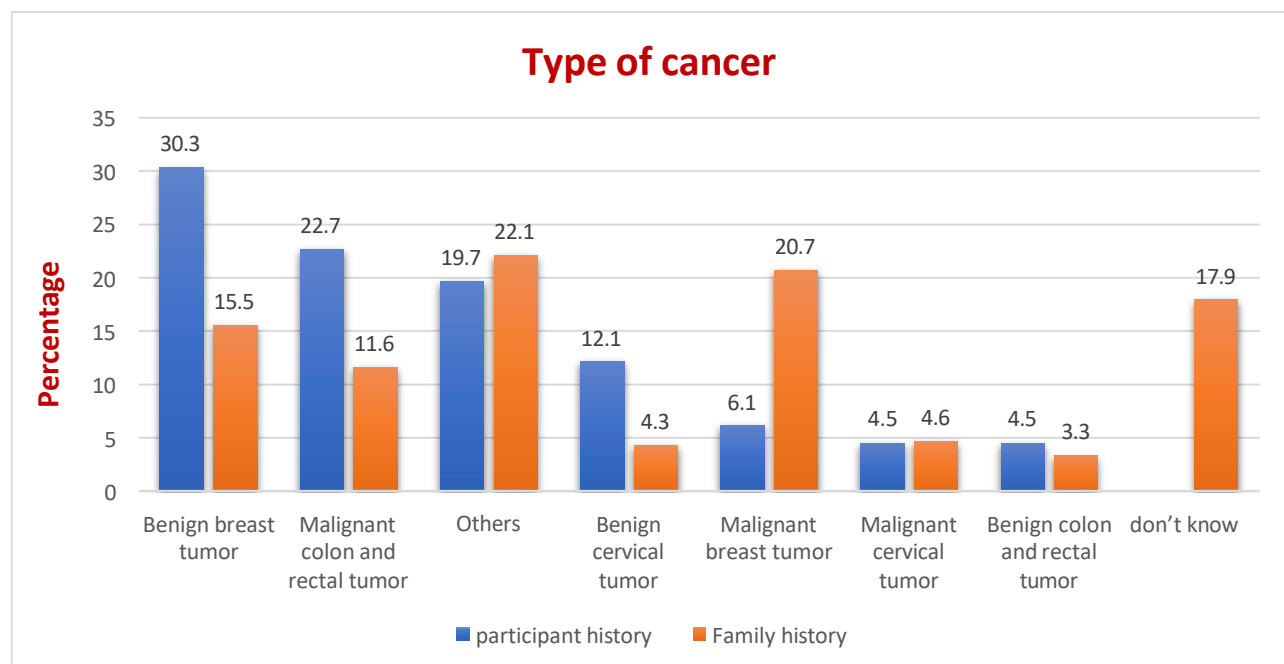


Figure 1: Types of cancer that diagnosed from participants and their family

Only 18.3% of people were aware that early colorectal cancer screening should start when a person is older than 50 years old, and awareness on when to repeat the screening was much worse, with 68.2% of people not knowing anything about it.

Table 2: Assessment of Knowledge

Statement	N 761 (100%)
1. Do you know that there is screening test for early detection of cancer of all kinds?	
• Yes *	571 (75%)
• No	190 (25%)
2. The tests available in the Kingdom of Saudi Arabia for early detection of cancer [†]	
• Breast cancer *	572 (75.2%)
• Cervical cancer *	257 (33.8%)
• Colon and rectal cancer *	183 (24%)
• I don't know	183 (24%)
3. Early screening for breast cancer begins at any age	
• <40 years old	203 (26.7%)
• 40 – 54 years *	304 (39.9%)
• 55 – 74 years	17 (2.2%)
• I don't know	237 (31.1%)
4. When it's repeated again (breast cancer screening)	
• Annually	304 (39.9%)
• Every two years *	103 (13.5%)
• Every three years	33 (4.3%)
• Every five years	29 (3.8%)
• No need to be repeated	3 (0.4%)
• I don't know	289 (38%)
5. Early screening for cervical cancer begins at any age	
• 21 – 29 years or after 3 years of marriage *	158 (20.8%)
• 30 – 39 years	51 (6.7%)
• 40 – 49 years	54 (7.1%)
• ≥50 years	34 (4.5%)
• I don't know	464 (60.9%)
6. When it's repeated again (cervical cancer screening)	
• Annually	112 (14.7%)
• Every two years	50 (6.6%)
• Every three years *	60 (7.9%)
• Every five years	28 (3.7%)
• No need to be repeated	8 (1.1%)
• I don't know	503 (66.1%)
7. Early screening for colorectal cancer begins at any age	
• <50 years	78 (10.2%)
• 50 - 59 years *	139 (18.3%)
• 60 - 69 years	20 (2.6%)
• ≥70 years	5 (0.7%)
• I don't know	519 (68.2%)
8. When it's repeated again (colorectal cancer screening)	
• Annually	85 (11.2%)
• Every two years	40 (5.3%)
• Every five years	41 (5.4%)
• Every ten years *	33 (4.3%)
• No need to be repeated	5 (0.7%)
• I don't know	557 (73.2%)

* Signifies correct answer.
 † Multiple response variable.

Table 3: According to this table, (21%) of participants have had cancer screening tests in order to identify cancer at an early stage. Nearly all of the participants had a positive attitude toward screening and (82.4%) said that early identification of cancer may boost the patient's chance of being cured and length of life. If cancer screening was free and risk-free, more people would participate (80.9%). Additionally, 89.6% and 9.1% of respondents agreed that screening plays no part in the treatment plan and causes no damage.

<u>Table 3: Assessment of Attitude</u>			
Attitude	Answer		
	Yes	No	Don't know
1. Undergone tests for early detection of cancer	160 (21%)	601 (79%)	
2. Effectiveness of early cancer screening	642 (84.4%)	19 (2.5%)	100 (13.1%)
3. Early cancer screening has no effect on the treatment plan	682 (89.6%)	14 (1.8%)	65 (8.5%)
4. If cancer is diagnosed early, cure rate increase and the patient's age increases	627 (82.4%)	34 (4.5%)	100 (13.1%)
5. If the early cancer screening was free and do not cause any harm, would you do it	616 (80.9%)	32 (4.2%)	113 (14.8%)
6. Early cancer screening does not cause any harm	69 (9.1%)	507 (66.6%)	185 (24.3%)
7. Early cancer screening helps in cancer prevention	555 (72.9%)	103 (13.5%)	103 (13.5%)

Figure 2 illustrates the obstacles to cancer screening. Fear of screening findings (18.2%) and feeling ashamed to get a cancer screening (10.5%) were the two obstacles that were most often reported.

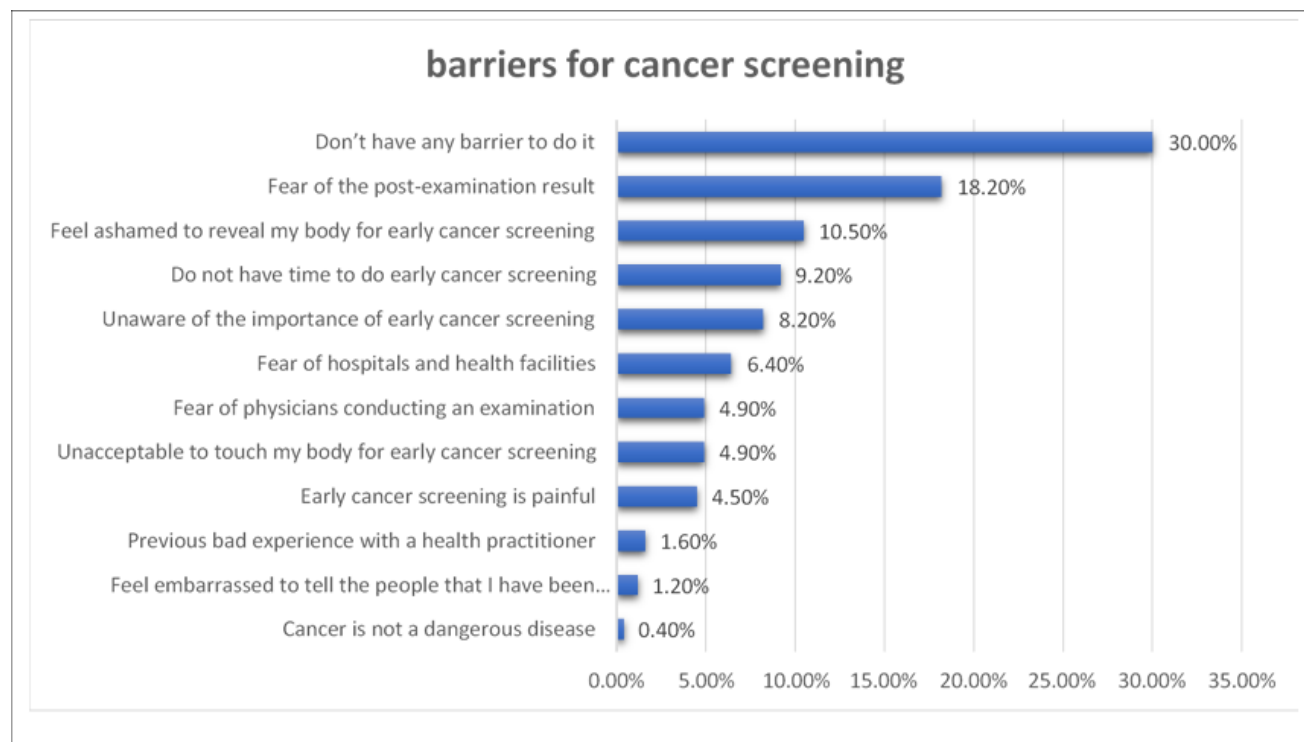


Figure 2: Barriers for undergoing screening:

<i>Table4: relationship between level of knowledge and attitude with sociodemographic data</i>						
Factor	Knowledge Score (8)		P-value	Attitude Score (7)		P-value
	Poor	Good		Negative	Positive	
Age group						
• ≤20 years	107 (14.1%)	6 (0.8%)	P=0.001	40 (5.3%)	73 (9.6%)	P=0.040
• 21 – 30 years	263 (34.6%)	69 (9.1%)		144 (18.9%)	188 (24.7%)	
• 31 – 45 years	150 (19.7%)	7 (0.9%)		54 (7.1%)	103 (13.5%)	
• 46 – 60 years	121 (15.9%)	18 (2.4%)		41 (5.4%)	98 (12.9%)	
• > 60 years	18 (2.4%)	2 (0.3%)		6 (0.8%)	14 (1.8%)	
Gender						
• Male	213 (28%)	15 (2%)	P=0.001	101 (13.3%)	127 (16.7%)	P=0.011
• Female	446 (58.6%)	87 (11.4%)		184 (24.2%)	349 (45.9%)	
Educational level						
• Diploma or below	283 (37.2%)	29 (3.8%)		132 (17.3%)	180 (23.7%)	

• Bachelor or higher	376 (49.4%)	73 (9.6%)	<i>P=0.006</i>	153 (20.1%)	296 (38.9%)	<i>P=0.021</i>
Employment status						
• Unemployed	244 (32.1%)	19 (2.5%)	<i>P=0.001</i>	101 (13.3%)	162 (21.3%)	<i>P=0.721</i>
• Employed	182 (23.9%)	54 (7.1%)		91 (12%)	145 (19.1%)	
• Students	233 (30.6%)	29 (3.8%)		93 (12.2%)	169 (22.2%)	
Suffering from any chronic diseases						
• Yes	171 (22.5%)	18 (2.4%)	<i>P=0.71</i>	57 (7.5%)	132 (17.3%)	<i>P=0.017</i>
• No	488 (64.1%)	84 (11%)		228 (30%)	344 (45.2%)	
Diagnosed with cancer						
• Yes	56 (7.4%)	10 (1.3%)	<i>P=0.663</i>	18 (2.4%)	48 (6.3%)	<i>P=0.074</i>
• No	603 (79.2%)	92 (12.1%)		267 (35.1%)	428 (56.2%)	
Family history of cancer						
• Yes	283 (37.2%)	46 (6%)	<i>P=0.683</i>	113 (14.8%)	216 (28.4%)	<i>P=0.123</i>
• No	376 (49.4%)	56 (7.4%)		172 (22.6%)	260 (34.2%)	

4. Discussion

A cross-sectional research was conducted in the eastern part of Saudi Arabia to determine the degree of cancer detection knowledge, attitudes, and impediments among Saudi nationals. There were 761 participants, of whom 86.6% had poor knowledge and 13.4% had strong knowledge (mean 3.13, standard deviation 2.14 out of 10). This conclusion was consistent with previous research indicating that the general public is uninformed about cancer screening [22]. A research done in Singapore revealed that 60% of the people had adequate cancer screening training and awareness [25].

This research revealed a substantial association between education level and the perception that a high school diploma or bachelor's degree indicates a high level of expertise. The research by [26] discovered that students with a high degree of medical education had more understanding. [27] discovered that the degree of education correlates positively with knowledge. According to a research conducted in Bahrain [28], gender inequalities

in knowledge consist of the fact that women are more knowledgeable than males. We also observed that women scored higher than males. Furthermore, work status and monthly income had a substantial impact on cancer screening knowledge [27].

The knowledge levels of individuals with chronic conditions or a family history of cancer were not substantially impacted by our findings. On the other hand, people diagnosed with cancer exhibited superior knowledge compared to those without cancer. [27], as well as [29], revealed that a family history of cancer is a factor associated with increased awareness. The participants' attitudes have produced greater outcomes than their knowledge. About 62.5% of the study population had a positive attitude, whereas 37.5% had a negative attitude (mean 4.40 1.48 out of 7 points). Compared to the research of [26], our findings revealed that medical students had a less favorable attitude, 57.8% positive and 42.2% negative. In our research, we found that female participants exhibited more positive views than their male counterparts.

Similarly, [29], [30] found that various age groups and educational levels had a strong connection with the attitudes confirmed in our research. We also noticed the following noteworthy results: marital status, monthly income, chronic conditions, cancer diagnosis, and cancer family history. In addition, several characteristics were recognized as crucial attitudes. Knowledge and attitude are positively correlated, implying that as knowledge rises, so does attitude. [29] found a similar linear correlation between knowledge and attitudes in the United Arab Emirates. Several variables impact the general population's participation in early detection screenings. As previously said, the degree of knowledge and attitude have a significant effect in the acceptance of the screening. The hurdles or restrictions that hinder the general populace from screening are a further key aspect. The majority of individuals in our research had no obstacles, followed by anxiety of test results and humiliation over cancer screening. Other research suggests screening is commonly ignored owing to lack of time and apprehension about screening findings [25], [26], [31], [32].

In addition, several research imply that ignorance is a significant barrier to early cancer identification [33]. Cancer prevalence in the eastern part of Saudi Arabia was determined to be 8.7%, which is lower than Kuwait's 42% [34]. Family history of cancer was 43.2% higher in Bangladesh than in previous studies [24], [33]. In addition, 21% of respondents have had cancer screenings for early detection. Several studies showed the same prevalence rate, which varied from 14.2% to 24.4%, among those who had had cancer screening [22], [27], [32], [33].

5. Conclusion

As shown in the study report, the majority of individuals have inadequate understanding of cancer kinds; healthcare practitioners should educate patients at the greatest risk about the significance of the screening test. The poll revealed that around 40% of respondents are aware of the breast cancer screening age, whereas their awareness of cervical cancer and colon cancer is little. 30% of respondents were aware that there were no impediments to screening, whereas 18.2% were worried about the findings. According to the research, cancer is the second largest cause of mortality in the globe. Several forms of cancer are associated with smoking, alcohol use, a poor diet, a sedentary lifestyle, viral and bacterial infections, urban air pollution, ionizing radiation, and indoor smoke. Individuals should be aware of the leading causes of cancer and adopt healthy lifestyles. More educational and screening initiatives should be established by the health sector and other connected parties so that malignancies may be detected sooner and treated with greater efficacy.

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Informed consent:

Informed consent: Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

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