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ORIGINAL

Colorectal Cancer Screening in Saudi Arabia: Sociodemographic Influences and Beliefs

Detección del cáncer colorrectal en Arabia Saudita: influencias sociodemográficas y creencias

Ahmad Mahmoud Saleh[1]

[1]Prince Sattam bin Abdulaziz University, Nursing College. Al-Kharj 11942, Riyadh, Saudi Arabia.

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Corresponding author: Ahmad Mahmoud Saleh

ABSTRACT

Introduction: colorectal cancer (CRC), the most common cancer among Saudi men, is a significant health concern. This study explored how beliefs and sociodemographic factors influenced screening behaviors in individuals aged 45–74 in Al-Kharj.
Method: this descriptive cross-sectional study, conducted in Al-Kharj in May and June 2024, used a web-based survey to assess cancer awareness and prevention beliefs among men aged 45–74. A purposeful sampling strategy with targeted advertising ensured demographic representation. Data were analyzed using chi-square tests and logistic regression to examine the influence of sociodemographic factors on CRC screening behaviors.
Results: of the 70 participants, 70 % had previously undergone colorectal cancer (CRC) screening, with most expressing positive views about cancer outcomes and care. Those who had never been screened were more likely to believe that screening is only necessary when symptoms are present (X^2 = 16,045, p < 0,01), view screening as having a high risk of leading to unnecessary surgery (X^2 = 12,934, p = 0,024), and feel deterred by concerns about potential findings (X^2 = 14,27, p = 0,014). Regression analysis indicated that men, except those aged 45–54, were significantly more likely to have undergone screening than women (OR = 3,76, 95 % CI = 1,104–12,801). No significant associations were found with other sociodemographic variables.
Conclusion: cancer screening behavior is influenced by beliefs about cancer screening, but the impact is minimal, suggesting a broad reach across various socioeconomic backgrounds.

Keywords: Colorectal Cancer; Cancer Beliefs; Cancer Screening; Screening Behavior.

RESUMEN

Introducción: el cáncer colorrectal (CCR), el cáncer más común entre los hombres saudíes, es un problema de salud importante. Este estudio exploró cómo las creencias y los factores sociodemográficos influyeron en los comportamientos de detección en personas de 45 a 74 años en Al-Kharj.
Método: este estudio transversal descriptivo, realizado en Al-Kharj en mayo y junio de 2024, utilizó una encuesta basada en la web para evaluar la concienciación sobre el cáncer y las creencias de prevención entre los hombres de 45 a 74 años. Una estrategia de muestreo intencionada con publicidad dirigida aseguró la representación demográfica. Los datos se analizaron utilizando pruebas de chi-cuadrado y regresión logística para examinar la influencia de los factores sociodemográficos en los comportamientos de detección del CCR.
Resultados: de los 70 participantes, el 70 % se había sometido previamente a una prueba de detección del cáncer colorrectal (CCR), y la mayoría expresó opiniones positivas sobre los resultados y la atención del cáncer.

Aquellos que nunca se habían sometido a pruebas de detección tenían más probabilidades de creer que las pruebas de detección solo son necesarias cuando hay síntomas (X^2 = 16,045, p < 0,01), consideraban que las pruebas de detección conllevaban un alto riesgo de derivar en una cirugía innecesaria (X^2 = 12,934, p = 0,024) y se sentían disuadidos por las preocupaciones sobre los posibles hallazgos (X^2 = 14,27, p = 0,014). El análisis de regresión indicó que los hombres, excepto aquellos de 45 a 54 años, tenían significativamente más probabilidades de haberse sometido a pruebas de detección que las mujeres (OR = 3,76, IC del 95 % = 1,104–12,801). No se encontraron asociaciones significativas con otras variables sociodemográficas.
Conclusión: la conducta de detección del cáncer está influida por las creencias sobre la detección del cáncer, pero el impacto es mínimo, lo que sugiere un amplio alcance en diversos contextos socioeconómicos.

Palabras clave: Cáncer Colorrectal; Creencias sobre el Cáncer; Detección del Cáncer; Comportamiento de Detección.

INTRODUCTION

With an incidence rate of 13,9/100,000 people, colorectal cancer (CRC) is the second most frequent cancer overall in Saudi Arabia, only exceeded by breast cancer.[1] CRC ranks first among cancers that most commonly affect men. Additionally, Saudi Arabia is seeing a rise in the prevalence of CRC, especially in the younger population.[2]

Despite a gradual increase, the projected five-year survival rate for colorectal cancer in Saudi Arabia is 44,6 %. This incidence may be influenced by a number of factors, including dietary and lifestyle choices in Saudi Arabia that may impact the risk and prognosis of colorectal cancer.[3] A diet heavy in red meat, processed meats, and unhealthy fats and deficient in fibre may be associated with a higher incidence of colorectal cancer as well as worse results. Furthermore, elements like smoking and inactivity may also be relevant.[4,5,6]

Thankfully, there are reliable screening techniques that can identify pre-malignant adenomas early on and so lower the risk of colorectal cancer.[7] Screening procedures for people 45–75 years of age suggest a sigmoidoscopy every 10 years and a faecal immunochemical testing (FIT) or faecal occult blood test (FOBT) every 2 years.[8,9]

The "Colorectal Cancer Early Detection" initiative is implemented by the Saudi healthcare system and has been phased in. The goals of a screening program would be to identify patients with asymptomatic CRC, inform patients, and expedite the process of screening for persons at medium- and high-risk.[10] The population of Saudi Arabia now knows very little about CRC, the advantages of screening, and the significance of routine screening.[10]

Only 2,8 % of participants in a research by Alghamdi et al. (2022) had previously had a CRC screening, and more than 40 % were unaware that screening was necessary.[10,11]

The intention of individuals to undergo colorectal cancer (CRC) screening has been found to be influenced by a number of factors, including age, knowledge, attitudes, and fears about disease and screening tests.[12,13]

As such, the investigators propose that treatments targeted at improving knowledge, attitudes, and concerns could potentially increase the adoption of colorectal cancer screening.[12] Furthermore, research to far suggests that while personal relationships with cancer patients can boost screening participation, well-being and anxiety about test results are linked to avoidance of CRC screening.[14,15] Furthermore, there are socioeconomic differences in the amount of time people spend screening for cancer; this association is largely mediated by psychosocial factors such cancer fatalism, life stressors, a lack of educational opportunities, resource restrictions, and the belief that screening has little benefit.[16]

As of yet, no research has attempted to assess the general public's knowledge and attitudes about colorectal cancer screening, outcomes, and treatment in the province of Al-Kharj.

Despite a high level of willingness among those asked, only 6,5 % of individuals aged 50-55 had undergone screening, according to a study by Alshaer et al. that revealed a considerable gap between knowledge and practice.[17] This suggests that screening rates in Saudi Arabia may be low, which calls for more research on the precise rates and factors that influence them.[18,19]

In Canada, there was a range of 53,3 % to 89,2 % for never-use faecal occult blood tests (FOBT) and 81,1 % to 94,3 % for endoscopy,[20,21] While colonoscopy (73,2 %) was the most popular screening technique among adults in Saudi Arabia, FOBT came in second (57 %).[22]

Therefore, it is critical for public health promotion initiatives to understand the causes of this inadequate uptake and identify characteristics associated with the adoption of CRC screening.[23] Although in other contexts beliefs have been linked to screening intentions, surveys of Saudi citizens are necessary to measure beliefs and their influence on CRC screening participation in order to explain the low rates of participation.[24]

Furthermore, since FOBT screening kits are now accessible through the new CRC screening program, it's

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critical to poll locals to find any remaining obstacles to participation.[25]

The main goal of the current study is to assess Saudi Arabian people between the ages of 45 and 74's attitudes on cancer screening, treatment, and results, with a particular emphasis on colorectal cancer (CRC) screening behaviour. The study set out three specific goals in order to achieve this: (1) to analyze the relationships between participants' beliefs about cancer screening and their behaviour (i.e., whether they had ever undergone CRC screening or not); (2) to examine and understand the relationships between participants' beliefs about cancer treatment and outcomes; and (3) to look into the independent associations between sociodemographic factors and CRC screening behaviour.

According to the study's hypothesis, people who had more positive views about cancer and cancer screening and fewer negative thoughts about the disease would be more likely to get a CRC screening. It was also predicted that individuals with greater levels of education, those who were older, and those who had a family history of cancer would participate in CRC screening at higher rates. This study was carried out as part of a larger investigation on cancer awareness and prevention in people in the province of Al-Kharj who are 45 to 74 years old.

Significance of the study

The present study is noteworthy due to its capacity to tackle a crucial public health concern in Saudi Arabia, which is the inadequate adoption of colorectal cancer (CRC) screening. Although colorectal cancer (CRC) is becoming more common in the nation, screening rates are still low, which emphasizes the critical need for focused interventions to raise awareness, change attitudes, and increase screening program participation.

In Saudi Arabia, colorectal cancer is the most prevalent cancer in men and the second most common cancer overall.[1] Raising CRC screening rates can help identify pre-malignant adenomas early on, which lowers the incidence and death rates associated with the disease. This study can assist in the creation of efficient public health initiatives to lessen the prevalence of colorectal cancer (CRC) in the community by clarifying the variables impacting screening behaviour.

While earlier studies has examined CRC screening behaviour in a variety of settings, little is known about the people of Saudi Arabia, especially in the Al-Kharj area. By shedding light on this demographic group's awareness, attitudes, and beliefs about cancer treatment, results, and screening, this study closes a significant gap in the literature.

The results of this study can help guide policy choices that aim to maximize CRC screening initiatives in Saudi Arabia. Through the identification of participation obstacles and factors linked to screening uptake, policymakers can customize interventions to target particular needs and foster fair access to screening services for diverse sociodemographic groups.

It is crucial to comprehend people's attitudes and ideas about cancer and screening in order to encourage preventative healthcare practices. Healthcare practitioners can motivate people to prioritize their health to undergo CRC screening as part of normal preventive care by addressing concerns, dispelling myths, and promoting good attitudes towards screening.

In conclusion, this study has important ramifications for Saudi Arabia's community involvement, promotion of preventive healthcare, and public health policies. The results of this study can help develop focused interventions to increase screening uptake and eventually lower the population's burden of colorectal cancer by examining the factors influencing CRC screening behaviour.

METHOD

The current investigation used a descriptive cross-sectional study design. In May and June of 2024, people of Al-Kharj between the ages of 45 and 74 were chosen via a web-based poll regarding cancer awareness and prevention.

Targeted advertising was used in conjunction with the purposeful sampling strategy to increase the sample's representativeness. In order to identify under-represented samples during the recruiting process, the author frequently assessed the demographic distribution of respondents. To increase representation, tailored ads based on region, age, gender, and education were then used. Participants who fell within the 45–74 age range, as this is the age range covered by CRC screening programs. Numerous considerations were considered when determining the sample size. Initially, the power level was 0,80, which is frequently regarded as a suitable lowest value.[26] Secondly, the application of the traditional two-tailed significance criterion, $\alpha = 0,05$. Third, the sample size was determined using paired t-tests with a medium population effect size (0,35).[26]

The G*Power program was used to calculate the sample size.[27] A power level of 0,80, a medium effect size (0,35), and a traditional significance criteria of $\alpha = 0,05$, two-tailed, were the goals for this investigation. A minimum of 59 participants was determined to be required for the sample size. An projected attrition rate of 20 % was taken into consideration in order to take into account potential attrition and reduce the possibility of bias.[26] To guarantee a sample size of 70 people overall, an extra 11 participants were included. All men in

Saudi Arabia were the study's target population. The men of Saudi Arabia were considered the approachable people.

The Standing Committee of Bioethics Research of the Deanship of Scientific Research, Prince Sattam Bin Abdulaziz University, provided ethical approval (SCBR-251/2024). Consent to participate in the study, including agreement on the time and place of interviews, was requested from participants. Every individual who agreed to participate in the study provided written informed consent. All information regarding the goal, scope, and content of the study was provided to participants, both verbally and in writing. During the data collecting and analysis process, a unique code number was provided to each participant to safeguard their confidentiality. To protect participant privacy and confidentiality, completed surveys were kept in a secure location. Participants can be reassured that their answers were kept private and that their participation was fully voluntary. The participants were advised that the healthcare providers would only receive aggregated data. Participants were made aware of their freedom to leave the study at any moment. They were informed about the gathering of demographic information as well as specifics of their background, worldview, and plans to be screened. All participants were also given an explanation of the procedure for gathering data and implementing the prostate education program. Details were given regarding the number of encounters and the approximate length of engagement with the participants. All participants received transparent information about the selection procedure and the overall number of participants. Participants are not subjected to any risk or injury, whether it be physical, psychological, social, or economic, because the primary method of data collection is a noninvasive, descriptive questionnaire. Finally, all participants were given the researcher's contact details.

Data Collection and Procedure

Participant Information

Ten questions on sociodemographic factors, including gender, age group, income, location, education, and whether or not they were living with a partner, were included in the questionnaire. The surveys underwent modifications and were translated into Arabic as part of the study's execution.[28]

Assessing Health and Health Care

In order to evaluate the participants' self-rated health, the number of chronic illnesses, their self-rated life stress, and their own and others' cancer histories, tools for evaluating health and healthcare were devised. In order to evaluate the screening behaviour for colorectal cancer, the participants were asked if they had ever undergone a colonoscopy, sigmoidoscopy, FIT or FOBT test, or any combination of these as a screening procedure. For every test, the scores were reported as follows: 0 = Never had screening; 1 = Ever had screening. A person was considered to have had CRC screening if they had either or both of the two screening tests. Those who answered "Never had one" on one question and left the other blank, or who answered "Never had one" on both questions, were categorized as having "never had any CRC screening." "System missing" was the code assigned to those who did not answer to either screening question.

Assessing Beliefs about Cancer Treatment, Outcomes, and Screening

The participants' opinions regarding cancer screening as well as treatment and results were evaluated. The Awareness and Beliefs about Cancer (ABC) instrument was one of the several sources from which the questions were modified.[18,20,22] Six items from the ABC instrument used a four-point Likert-type scale to evaluate respondents' views towards cancer treatment and outcomes. Of these, three were favorable and three were negative. The positive beliefs were ranked from 1 to 2 (1 being strongly disagree or disagree, and 2 being agree or strongly agree); the negative views were ranked from 2 to 1 (2 being disagree or strongly disagree, and 1 being agree or strongly agree). In addition, Participants were asked to respond to items on a five-point Likert-type scale, scored from 1 to 3. For the positive domain, the items were: 1 = strongly disagree or disagree, 2 = neither agree nor disagree, and 3 = agree or strongly agree; for the negative domain, the items were: 1 = strongly agree or agree, 2 = neither agree nor disagree, and 3 = disagree or strongly disagree. The purpose of the scale was to measure attitudes towards cancer screening (four questions in the positive domain and four in the negative domain).

Data Analysis

To report the participants' social, health, and demographic characteristics, a descriptive analysis was carried out. To assess how perceptions about cancer and cancer screening differed from CRC screening behaviour, chi-square tests were used to compare various categorical variables. Using a logistic regression model, independent variables influencing CRC screening behaviour were found. A significance threshold of 0,05 was used. Version 22.0 of the SPSS statistical program was used to analyze the data.[29]

RESULTS

Participant Characteristics

77 out of the 70 distinct surveys that were submitted satisfied the inclusion requirements.

Seven surveys with significant missing data were eliminated, leaving 70 people between the ages of 45 and 74 in the final sample. Table 1 displays the attributes of these participants. 80 % (56) of the participants in this study were overweight or obese. Approximately 38,6 % of the participants said they were in very good or excellent health. About 42,9 % (30) said that their lives were either very stressful or quite a bit difficult. One third percent had 'poor' education, defined as having completed high school or less 35,7 % (25) and 47,1 % (33) had a household income of at least $40 000.

In terms of age, income, the percentage of people with a regular healthcare provider, and the number of people who have had a colonoscopy or sigmoidoscopy, the sample was somewhat representative of the general community (30).

Table 1. Attributes of study participants aged 45-75

Characteristics		Participants (n = 70)	
		n	%
Gender	Male	27	38,6
	Female	43	61,4
Age	45-54	10	14,3
	55-64	20	28,6
	65-74	40	57,1
Education	High	45	64,3
	Low	25	35,7
Living with a partner	No	23	32,9
	Yes	47	67,1
Household Income	$40 000+	33	47,1
	$20 000-$39 999	26	37,1
	<$20,000	11	15,7
Health	Poor	18	25,7
	Good	25	35,7
	Very Good or Excellent	27	38,6
Stress	Extremely stressful	13	18,6
	Quite a bit stressful	17	24,3
	A bit stressful	25	35,7
	Not very stressful	10	14,3
	Not at all stressful	5	7,1
BMI	Underweight or Normal weight	14	20,0
	Overweight	22	31,4
	Obese	34	48,6
Chronic Conditions	0	31	44,3
	1-2	35	50,0
	3+	4	5,7
Has a Regular Health Care Provider	No	26	37,1
	Yes	44	62,9
CRC Screening Behaviour	Has Ever Had	49	70
	Has Never Had	21	30
History of Cancer Diagnosis	No	56	80,0
	Yes	14	20
History of Cancer Diagnosis in First Degree Relative	No	29	41,4
	Yes	41	58,6

Associations between CRC Screening and Beliefs about Cancer Treatment and Outcomes

The majority of participants had optimistic, non-fatalistic views on the course of cancer treatment and its results. Regarding the six views regarding cancer treatment and outcomes that were examined, there were no statistically significant differences found between individuals who have never had CRC screening and those who have ever had CRC screening (table 2).

Table 2. Relationships among Adults in Alkharj, Saudi Arabia, Ages 45–74 About Beliefs, Cancer Treatment and Outcomes and CRC Screening

Beliefs about Cancer Treatment and Outcomes	CRC Screening (n(%))				$X^2(1)$	p
	Never 21(30)		Ever 49(70)			
	Disagree	Agree	Disagree	Agree		
These days, many people with cancer can expect to live normal lives.	11 (15,7)	10 (14,3)	23 (32,9)	26 (37,1)	1,59	0,66
Cancer can often be cured.	11 (15,7)	10 (14,3)	27 (38,6)	22 (31,4)	2,857	0,414
Going to the doctor as quickly as possible after noticing a symptom of cancer could increase chances of surviving.	13 (18,6)	8 (11,4)	25 (35,7)	24 (34,3)	7,123	0,068
Most cancer treatment is worse than the cancer itself.	8 (11,4)	13 (18,6)	27 (38,6)	22 (31,4)	4,383	0,223
I would not want to know if I have cancer.	12 (17,1)	9 (12,9)	26 (37,1)	23 (32,9)	1,712	0,634
A diagnosis of cancer is a death sentence.	11 (15,7)	10 (14,3)	16 (22,9)	33 (47,1)	1,91	0,589

It's interesting to note that 50 % (35) of respondents aged 45 to 74 agreed or strongly agreed that receiving treatment for cancer is worse than having the disease itself, and 61,4 % (43) agreed or strongly agreed that receiving cancer is a death sentence. Forty five percent of the participants 45,7 % (32) said that seeing a doctor as soon as feasible after recognizing a cancer symptom could improve survival rates.

Associations between CRC Screening and Beliefs about Cancer Screening

Table 3 compares the views of people 45 to 74 years old regarding cancer screening in order to determine whether the beliefs of those who participated in CRC screening practices and those who did not differed.

A quarter of the participants, specifically 25,7 % (22) expressed agreement or strong agreement that screening could lower their risk of dying from cancer. It's interesting to note that variations in this mindset did not correlate with variations in CRC screening behaviour (X^2 = 4,404, p = 0,493). Correctly disagreeing or strongly disagreeing with the assertion that cancer screening was only required if a person had symptoms was two thirds of the participants, or 60 % of the sample.

Table 3 demonstrates that individuals without a history of colorectal cancer were twice as likely as those who had to concur that they "would be so worried about what might be found during screening, that I would prefer not to do it." Accordingly, the proportions are 11,4 % and 18,6 % (X^2= 14,27, p = 0,014). The findings imply that one reason preventing consumers from using this screening service is their fear of an unfavorable test result.

Table 3. Displays the associations between adult 45–75-year-olds' perceptions of cancer screening in Alkharj, Saudi Arabia, and CRC screening

Beliefs about Cancer Screening	CRC Screening (n(%))						$X^2(2)$	p
	Never 21 (30)			Ever 49 (70)				
	Disagree	Neutral	Agree	Disagree	Neutral	Agree		
I would be so worried about what might be found during screening, that I would prefer not to do it.	7 (10)	6 (8,6)	8 11,4)	25 (35,7)	11 (15,7)	13 (18,6)	14,27	0,014*
Cancer screening is only necessary if I have symptoms.	5 (7,1)	8 (11,4)	8 11,4)	37 (52,9)	6 (8,6)	6 (8,6)	16,045	0,007**
Cancer screening could reduce my chances of dying from cancer.	8 (11,4)	6 (8,6)	7 (10)	16 (22,9)	22 (31,4)	11 (15,7)	4,404	0,493
If I have a healthy lifestyle, I don't need to worry about having regular cancer screening.	4 (5,7)	9 (12,9)	8 11,4)	21 (30)	16 (22,9)	12 (17,1)	9,914	0,078
Cancer screenings are now very routine tests.	6 (8,6)	8 (11,4)	7 (10)	18 (25,7)	14 (20)	17 (24,3)	2,778	0,734
Cancer screening tests have a high risk of leading to unnecessary surgery.	8 (11,4)	7 (10)	6 (8,6)	32 (45,7)	11 (15,7)	6 (8,6)	12,934	0,024*
Regular cancer screening would give me a feeling of control over my health.	4 (5,7)	9 (12,9)	9 12,9)	6 (8,6)	12 (17,1)	30 (42,9)	13,81	0,017*
I would be more likely to do screening if my doctor told me how important it was	8 (11,4)	6 (8,6)	7 (10)	12 (17,1)	16 (22,9)	21 (30)	7,202	0,206

*: p < 0,05, **: p < 0,01.

Additionally, individuals who had CRC screening varied considerably from those who had not in terms of their agreement with the assertion that screening was only required if a person had symptoms (X^2 =16,045, p < 0,01).

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The likelihood that screening was only required if a person had symptoms was high among those who had never had screening (11,4 % vs. 8,6 % for those who had undergone CRC screening) (X^2 =16,045, p < 0,01). Although this was not the case for 7,1 % of individuals who had never had a CRC test, 52,9 of those who had undergone screening disagreed with this statement.

People who have had CRC cancer screening and those who have not had it differ in their beliefs regarding whether screening carries a high risk of resulting in needless surgery (X^2 =12,934, p = 0,024). In particular, compared to 8,6 % of those who had screening, 8,6 % of those who had not had CRC screening felt that there was a high risk of needless surgery. Overall, it seems that "negative" screening views were more frequently linked to variations in screening behaviour than "positive" beliefs.

Logistic Regression of Associations between CRC Screening Behaviour and Sociodemographic Factors

The author's logistic regression model took into account the following factors: age, gender, BMI class, whether the person was single or living with a partner, income, education level, history of cancer in one's own family, and history of cancer in a first-degree relative. Age-group variations in CRC screening were to be expected. Ages 55–64 and 65–74 all had considerably higher probabilities of having ever undergone a CRC screening than did those 45–54 (table 4).

Table 4. Presents a logistic regression analysis analyzing the relationships between CRC screening behaviours and sociodemographic variables in adults in Alkharj, Saudi Arabia, aged 45-74

Characteristics	Items	OR (95 % CI)
Gender	Female	1
	Male	3,76(1,104-12,801)*
Age	45-54	1
	55-64	63 (6,5-608)**
	65-74	3,76 (1,01-14,0)*
Education	High (post-secondary degree)	1
	Low (No post-secondary degree)	0,646 (0,22-1,84)
Living with a partner	No	1
	Yes	0,753 (0,247-2,295)
Household Income	$40 000+	1
	$20 000–$39 999	2,925 (0,543-15,754)
	<$20 000	1,35 (0,227-8,031)
BMI	Underweight or Normal weight	1
	Overweight	0,57 (0,132-2,468)
	Obese	0,976 (0,309-3,08)
History of Cancer Diagnosis in First Degree Relative	No or Not Sure	1
	Yes	0,528 (0,188-1,486)
History of Cancer Diagnosis	No	1
	Yes	3,081 (0,625-15,198)

*Stands for statistical significance at the 0,05 level.

The author also discovered that men had greater odds than women of having undergone a CRC screening (OR = 3,76, 95 % CI = 1,104–12,801). Based on BMI class, there were no statistically significant changes in CRC screening behaviour whether an individual lived with a spouse, had a regular healthcare provider, was well educated, or had an income (Table 4). Moreover, there were no variations according to the person's own history of cancer diagnosis or if they had a first-degree family who had received a cancer diagnosis.

DISCUSSION

The majority of individuals had favorable opinions on cancer outcomes and treatment. It is crucial for public awareness campaigns to highlight the advantages of screening while avoiding fatalistic beliefs or catastrophizing the disease because positive attitudes towards and awareness of cancer and cancer screening play a role in adopting proactive strategies to prevent cancer. It's interesting to note that there was no correlation found between variations in CRC screening behaviour and beliefs regarding cancer therapy or prognosis. This is positive since it implies that screening may still be done by those who have more fatalistic views.

The majority of participants also had positive attitudes towards cancer screening; few expressed concern about the possibility of false positive results resulting in needless surgery, and even fewer said that their fears

of what may be discovered would keep them from taking part in the screening process.

The study's author discovered that those who were anxious about the results of their screening were less likely to have ever had a colorectal cancer screening, which is consistent with other studies.[31] It's interesting to note that just one of the four beliefs in the "positive domain" and three of the four ideas in the "negative domain" regarding cancer screening were linked to behavioural variations. This shows that rather than only emphasizing the advantages of screening, awareness campaigns might gain more from addressing people' anxieties or false perceptions about it. There may be a role for raising public knowledge of the importance of screening, as individuals who had never had a CRC screening were more likely to think that it was only important if they had symptoms.[31]

Merely 34,3 % of participants in the 45–74 age group in the current study agreed or strongly agreed with the statement that cancer screening is becoming a common practice. Nonetheless, the lack of correlation with prior CRC screening indicates that efforts to alter the public's understanding of cancer screening as a regular procedure could not result in increased screening rates.

Although this seems paradoxical, it's possible that there are other elements besides beliefs at work. Another factor linked to CRC screening was the belief that routine screening will provide individuals a sense of control over their health. There was no correlation found between the majority of participants' agreement to engage in screening and their doctor's endorsement of its importance for colorectal cancer screening behaviour.

Finding few or no differences in screening behaviours across views about cancer treatment and outcomes, as well as a modest number of variances across screening beliefs and behaviours, is a promising development. This is due to the possibility that those who hold fatalistic views about cancer may not have been significantly, if at all, less likely to have undergone CRC screening. This is positive since it shows that people are still getting cancer screenings, in spite of their misgivings.

The non-random sampling design has limitations, so the sample size used in this study shouldn't be used to estimate the population as a whole. Furthermore, it does not imply that these individuals are current with screening. Nevertheless, these results provide more evidence to back up our claim that attitudes and behaviour differ. If public health campaigns want to increase screening rates, it may be required to implement interventions beyond health awareness and education, as evidenced by the lack of significant relationships found between beliefs and CRC screening rates.[32]

Few sociodemographic relationships found by the author were not statistically significant; nevertheless, prior studies have shown that rates of being current with CRC screening were correlated with income and BMI class.[33,34] In another study, the correlation between ever-screening rates and income or rural/urban location was not very strong.[33] Furthermore, among participants, men were surprisingly more likely than women to have ever undergone a CRC screening, although Singh et al.[35] discovered that although women's screening rates were marginally higher, their odds were the same. The discrepancy between the literature's findings and the findings of the current study could be explained by the many outcome variables we looked at; that is, these characteristics might not have an impact on whether or not a person has ever had a colorectal cancer screening, but they might have an impact on whether or not they have had a CRC screening in the recent past. As anticipated, the author discovered that screening was lowest among those in the 45–54 age range. In contrast, the odds were more than twice as high among those in the 55–64 age range, and they rose with age, roughly tripling among those in the 65–74 age range.

There are several significant restrictions to be aware of. Because the sample was gathered using Facebook advertising, which is not a random procedure and could introduce bias into the sample, it is not possible to draw broad conclusions regarding prevalence. There was definitely a bias in the author's selection of Facebook users as they were the ones who could use the platform.

Additionally, there was selection bias, as seen by the greater levels of education and health consciousness among the population.[31] This might have resulted in a higher representation of individuals who are more likely to have undergone screening for CRC. Furthermore preventing us from drawing any inferences regarding correlation vs. causation is the study's cross-sectional design. An additional constraint is that the author examined individuals' screening histories rather than their current screening status. The relationship between beliefs and sociodemographic characteristics and having received screening in the recent past may be more or less important than the relationship between having received screening at all and never having done so. An further point to take into account is that while the author evaluated attitudes about cancer in general, this study focused specifically on CRC screening behaviour. Certain cancer types may cause attitudes and behaviours to differ, and broad views about may have varying effects on particular screening behaviours.

CONCLUSIONS

The majority of Al-Kharj residents in the study had positive views on cancer screening and treatment outcomes. However, the findings may not be widely applicable due to the non-randomized sample, which overrepresented males and those with higher education. Given the high CRC burden in Al-Kharj, public health

campaigns should encourage screening uptake. Future research should explore the relationship between beliefs and behaviors, using methods like structural equation modeling. The study suggests that while increasing awareness and attitudes may be important, they alone might not be sufficient to change behavior. System-level changes addressing screening barriers may be necessary for more effective health promotion.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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AUTHORSHIP CONTRIBUTION

Conceptualization: Ahmad Mahmoud Saleh.
Data curation: Ahmad Mahmoud Saleh.
Formal analysis: Ahmad Mahmoud Saleh.
Methodology: Ahmad Mahmoud Saleh.
Validation: Ahmad Mahmoud Saleh.
Drafting - original draft: Ahmad Mahmoud Saleh.
Writing - proofreading and editing: Ahmad Mahmoud Saleh.