

Knowledge, attitude and practice towards early screening of colorectal cancer in Riyadh

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ABSTRACT

Background and Aims: Colorectal cancer (CRC) is a common cause of mortality worldwide. It is preventable, treatable when detected early. The aim of this study is to assess knowledge, attitude and practice (KAP) of the participants toward CRC and its early screening, and identify the sources of information on the subjects. **Methods:** We conducted a cross-sectional study on the people 40y old and above at the primary care clinics at King Saud university medical city (KSUMC) in Riyadh. The estimated sample size was 245 subjects whom we requested to complete a self-administered Arabic questionnaire, which consisted of three parts. These were: 1. Demographic data, 2. KAP toward CRC, its early detection. 3 sources of information of the public about colorectal cancer. **Results:** A total of 231 subjects participated; (54.5%) were male (mean age = 50.7 ± 9.8). About 47% of the participants heard about cancer screening, and 45% knew that colonoscopy is used for such purposes. Another 24.2% were aware that occult blood in the stool test is a method of early detection of colon cancer. About 40% to 50% of the subjects were knowledgeable about hazardous factors and cautioning symptoms for CRC. Only 6.5% of the subjects did an early screening for CRC, but 82.9% would do it if their doctor advised them to do so. **Conclusion:** The participant's knowledge and early checkups of CRC are inadequate. They would undergo early screening if their doctors advised them to do so. It is time to develop a national policy for CRC screening involving primary care doctors and utilizing social media to improve people's information.

Keywords: Attitude, colorectal cancer, knowledge, practice, screening

Introduction

Colorectal cancer (CRC) is the third most prevalent cancer and the fourth most common cause of death worldwide. It would increase by 60% by the year 2030. Researchers from developed countries observed high rates. Furthermore, the magnitude of the condition increase quickly in third world nations which may be due to the selection of western ways of life by their people^[1] In Saudi Arabia, colorectal cancer is the second most

common cancer. It ranked as first cancer in men 9.9% and third in women 6.4%.^[2]

In 2015, the rate was 9.6 per 100,000 individuals, which was almost double the rate of 2001 as illustrated by the age-standardized rate of CRC in the Saudi population.^[3,4] Moreover, the Saudi survival rate (44.6%) is worse than that reported worldwide.^[5] This could be attributed to patients presented late with their symptoms^[6] In Australia, however, the subjects had significant exposure to media their knowledge about screening was insufficient^[7] Researchers from West part of Saudi Arabia reported that the individual's level of education and the endoscopic modality chosen influenced the people's awareness of CRC and readiness for screening. Another Saudi study showed that most of the participants were having the desire to undergo CRC screening. Nevertheless, barriers such as inadequate knowledge, embarrassment, and fear prevent them

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from doing so.^[8] Several modalities of screening are available to identify CRC, which improved the survival rate of CRC patients. These tests can be performed routinely before the age of 50 years, especially in high-risk people such as the past history of CRC and polyps.^[8,9] Patients with CRC can experience certain complaints or ambiguous systemic symptoms such as loss of weight or appetite and fatigue. Furthermore, patients may misinterpret these complaints as benign conditions such as Irritable Bowel Syndrome.^[10-12] Early detection is thus fundamental for decreasing mortality since CRC is a treatable condition. This is only possible by screening or incidentally. Saudi individuals are more likely to attend to their doctors at a late stage of the disease that carries a poor prognosis.^[3,13,14] Also, screening is ideal for CRC since it has a long duration between early and advanced stages of the disease.^[15,16] The evidence recommended the combination of these health professional efforts with counseling people who may benefit from lifestyle modification to improve survival and quality of life. Furthermore, this is a critical role for healthcare professionals. (Saudi Patients' Knowledge, Behavior, Beliefs, Self-Efficacy, and Barriers Regarding Colorectal Cancer Screening)^[17] Recently, Saudi Arabia issued its strategy for health promotion and disease prevention, including colorectal cancer as part of Saud vision 2030. We are aiming to find out the knowledge, attitude, and practice (KAP) of the participants toward colorectal cancer and the early detection screening for it and identify the sources of information on the subjects about colorectal cancer.

Method

We conducted this descriptive cross-sectional study from September 2017 to February 2018 at the primary care clinics at KSUMC. The inclusion criteria for the subjects were 40 year old and above Arabic speaker resident in Riyadh of both sex. We estimated the sample size according to the following formula:

$$N = Z^2 \times p \times (1 - p) / C^2,$$

where N = sample size, Z = 1.96 at 95% level of significance, P = prevalence of low awareness (20%), and C = degree of precision (0.05). The estimated sample size was 245. We excluded people with a history of cancer. We randomly selected attendants of KSUMC outpatient clinics who fulfilled the inclusion criteria to complete the questionnaire.

The investigators developed a validated, self-administered questionnaire in the Arabic language according to the findings from three published literature.^[18-20] The questionnaire consisted of three main parts: 1. Socio-demographic variables" age, gender, marital status, level of education, and occupation. 2. KAP of the participants toward CRC and its early detection screening. 3. Sources of information of the public about colorectal cancer such as awareness campaigns, health educational booklets, television, radio, newspaper, doctors, friends, websites, and social media.

A total of 24 knowledge questions aimed at assessing participants' knowledge, plus three attitude and 2 practice questionnaires

towards colorectal cancer and its early screening (see appendix). The possible answers to these questions were "yes," "no," and "I do not know." Correct responses were assigned a score of 1, while incorrect responses or "I do not know" were assigned.

We assessed the three attitude questions using a Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). The authors ask the participants about their sources of information (such as doctors, friends, television, or the internet).

Academic experts (five family physicians, two surgeons, and one preventive medicine professor) reviewed the questionnaire. Before the conduction of the main study, the authors did a pilot study with 20 individuals to test the clarity, difficulties, applicability of the questionnaire, and to identify any difficulties. Also, during the pilot investigation, the instruments were found to conform to the scientific and cultural values for the Saudi community, and the authors estimated the time needed to complete it. We modified the questionnaire according to the results of the pilot study. People who participated in the pilot study spent 10 and 15 minutes to complete it. We excluded them from the main study. Cronbach's alpha for the knowledge items of the modified instrument was 0.88.

Before the conduct of the study, we got approval from the Institutional Review Board, college of medicine, King Saud University on 1-2-2015. Research Project No. E-15-1406. We strictly adhere to ethical codes of conduct at all stages of the project. All of the participants' information remained strictly anonymous and confidential.

We categorized the total score of the 24 knowledge questions into two as good (median score and above) and bad (below median score) knowledge.

We analyzed the data using the Statistical Package for Social Studies (SPSS 22; IBM Corp., New York, NY, USA). The investigators expressed categorical variables as percentages and using Chi-square. A P value < 0.05 was considered statistically significant.

Results

A total of 231 participants completed the study questionnaire, 126 (54.5%) were male. The response rate was 94.3%. Table 1 shows the level of participants' knowledge of colorectal cancer by their characteristics. The total sample means age was 50.7 (± 9.8) years. Approximately 68.0% of the participants were married. The educational level for 90.9% of the participants was university and above. Ninety percent of the participants were working. Forty percent (17.3%) of the participants were having a family history of colorectal cancer.

The knowledge of those 50 years old and above and positive family history of cancer was better than their counterparts. These

Table 1: The level of participants' knowledge of colorectal cancer by their characteristics. (n=231)

Variables	N 231 (100)	Good 122 (52.8)	Poor 109 (47.2)
Age (Mean, SD 50.7+9.8)			
Age < 50	185 (80.1)	87 (47.0)	98 (53.0)
Age ≥ 50	46 (19.9)	35 (76.1)	11 (23.9)
<i>P</i>		0.0001*	
Gender			
Male	126 (54.5)	71 (56.3)	55 (43.7)
Female	105 (45.5)	51 (48.6)	54 (51.4)
<i>P</i>		0.23	
Educational level			
Belowuniversity	21 (9.1)	8 (38.1)	13 (61.9)
University	210 (90.9)	114 (54.3)	96 (45.7)
<i>P</i>		0.17	
Marital status			
Not married	74 (32.0)	36 (48.6)	38 (51.4)
Married	157 (68.0)	86 (54.8)	71 (45.2)
<i>P</i>		0.40	
Occupation			
Not working	23 (10.0)	8 (34.8)	15 (65.2)
Working	208 (90.0)	114 (54.8)	94 (45.2)
<i>P</i>		0.08	
Family history of colorectal cancer			
Yes	40 (17.3)	31 (77.5)	9 (22.5)
No	191 (82.7)	91 (47.6)	100 (52.4)
<i>P</i>		0.001*	

* Significant *P* value

differences were statistically significant (*P*-value < 0.005).

Table 2 shows the knowledge and practice towards colorectal cancer and its early screening. About 47% of the participants heard about cancer screening tests, and 45% knew that colonoscopy is one of the procedures for such purposes. Another 24.2% were aware that blood in stool is one of the methods of early detection of colon cancer.

Out of all men and women, 51.4% thought they are susceptible to colon cancer. About 55% of the study subjects think consumption of food with high-Fat content, and Low Fiber is a risk factor for CRC. Also, 41.6% of them knew that the presence of polyps in the lining of the colon and rectum predispose them to colon cancer. A third 33.8% of respondents thought that physical inactivity is a risk factor for colon cancer. With regards to symptoms, 38.1% of participants thought that the presence of blood in the stool is a warning symptom; others between 38.1-45.5% thought that sudden weight loss and change in the number of bowel motions as symptoms of colon cancer respectively. About a third thought that the feeling of an emptied rectum with defecation and pain and cramps in the stomach was colorectal cancer symptoms. Even though 30.7% of the participants thought about doing a screening for early detection of colon cancer. Only 6.5% of the subjects did early checkups for colon cancer.

Table 2: Knowledge and practice towards colorectal cancer and its early Screening (n=231)

Variables	Frequency of yes	Percentage
Knowledge		
Have you ever heard of early cancer screening tests?	109	47.2
Colon cancer can be prevented	9	3.9
I think colon cancer is fatal	120	51.9
Colon cancer recovery rates are increased when detected in early stages	11	4.8
Methods of early detection of colon cancer		
Colonoscopy	104	45.0
PR speculum	58	25.1
Blood detection in the stool sample	56	24.2
Barium dye for large intestine	37	16.0
Blood tests	34	14.7
Abdominal CT scan	38	16.5
Clinical examination of the rectum	31	13.4
Risk factors for colon cancer		
Men and women are susceptible to colon cancer	119	51.5
Physical inactivity	78	33.8
Overweight	71	30.7
High Fat Low Fiber Diet	128	55.4
The presence of polyps in the lining of the colon and rectum	96	41.6
Increasing age	83	35.9
Smoking	77	33.3
Symptoms of colon cancer		
The presence of blood in the stool	128	38.1
Sudden weight loss	88	38.1
Increase mucus secretions in the stool	55	23.8
Feeling that the rectum was not fully emptied with defecation	75	32.5
Pain and cramps in the stomach	72	31.2
Sudden change in number of bowel motions and Diarrhea	105	45.5
Practice		
Have you done early checkups for colon cancer?	15	6.5
Have you ever thought about undergoing a screening for early detection of colon cancer?	71	30.7

Table 3 shows the attitude towards the early screening of colorectal cancer. The participants who thought they were susceptible to colon cancer account for 25.5%. About 21.1% of the participants thought that their information about colon cancer was adequate. Nevertheless, 75.3% of them would undergo early screening for colon cancer if their doctor advised them to do so.

Table 4 shows the participants' reasons for not doing CRC screening. About a quarter of the subjects attributed the reasons for the absence of symptoms. Furthermore, the lack of awareness of the need for such screening was another reason.

Figure 1 shows the sources of information of the participants about the early screening of colorectal cancer. Awareness

Table 3: Attitude towards early screening of colorectal cancer

	Strongly agree n (%)	agree n (%)	Neutral n (%)	disagree n (%)	Strongly disagree n (%)
I think I'm susceptible to colon cancer	15 (6.5)	44 (19.0)	118 (51.1)	30 (13.0)	24 (10.4)
I will undergo early screening for colon cancer if my doctor advise me to do so	98 (42.4)	76 (32.9)	44 (19.0)	8 (3.5)	5 (2.2)
I think I have adequate information	17 (7.4)	34 (14.7)	61 (26.4)	69 (29.9)	50 (21.6)

Table 4: Reasons for not doing CRC screening

Reasons	Frequency (%)
There are no symptoms	24
I am not aware of the need for CRC screening	23
Not eligible age (<50) for CRC screening	7
Fear or embarrassment of the procedure Others such as lack of time, difficulty of getting appointment	7
	5

campaigns and health educational booklets represent the highest source for information (22.9%, 22.1%), respectively. Doctors and friends account for about 16% of the sources of information. Social media and websites of MOH represent about 10% or less of the sources of information.

Discussion

Colorectal cancer is common in Saudi Arabia.^[21-23] Early diagnosis is essential for reducing mortality since CRC has an excellent prognosis if detected in early stages.^[24,25] This only possible by screening or incidentally.^[15,16,25] Cancer diagnosis delay can occur due to (diseased individual, health professionals, and the healthcare system itself)^[26,27]

However, screening is ideal for CRC since it has a long duration between early and advanced stages. Also, prognosis mainly depends on the stage at diagnosis, even though, so far, there has been no national arrangement for CRC screening despite expanding disease rate.

Our study reported inadequate knowledge among the surveyed participants. A more than three-quarters think that their information about colon cancer was inadequate. About 47% of the participants heard about cancer screening tests, and 45% knew that colonoscopy is one of the procedures for such purposes. Another 24.2% were aware that blood in stool is a test of early detection of colon cancer. Many studies have reported similar results in different countries, including Saudi Arabia.^[28-32] Greece,^[33] , Australia,^[7] and Spain.^[34]

In our study, the knowledge of those 50 years old and above and have a positive family history of cancer was better than their counterparts. These differences were statistically significant (*P*-value < 0.005). We did not find statistically significant differences in knowledge among gender and education level. Similar studies showed that gender was not associated with different knowledge of CRC screening.^[31,35] Several studies

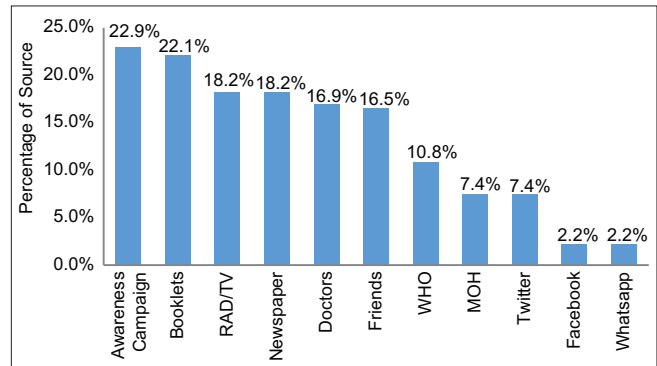


Figure 1: Sources of information of the participants about early screening of colorectal cancer

indicated that older respondent is more knowledgeable regarding CRC symptoms and when to screen.^[29,32]

In contrast to other studies, the female is associated with poor knowledge and longer diagnostic interval and reported more barriers, for example, fear about what the diagnosis might be, and also transportation difficulties.^[29,36] Studies revealed that the higher the educational achievement of the person, probably they will recognize the seriousness of the symptom more and seek help early.^[29,37] which was not the case among our participants.

The participants who thought they were susceptible to colon cancer account for 25.5%. Out of all subjects, 3.9% thought colon cancer is preventable, and 4.8% of them believed that early detection of CRC leads to an excellent prognosis. Further, 51.9% thought colon cancer to be fatal if not treated.

The majority of the subjects 55.4% incriminated imbalanced dietary consumption as a risk factor for CRC. Also, about half 41.6% of them knew that the presence of polyps in the lining of the colon and rectum predispose patients to colon cancer. Only a third of respondents thought that poor lifestyle, such as physical inactivity and tobacco smoking is a risk factor to colon cancer. These findings of risk factors were similar to those reported by other authors.^[4,32,38] The findings emphasize the potential of risk factors modification on prevention and reduction of the burden of CRC in Saudi Arabia. Even though 17.3% of the participants were having a family history of CRC. This risk was not adequately appreciated by our participants to go for screening, which is different from other studies.^[28,31,39] The current study showed that only about 17% of the participants received their information from doctors. This shortcoming draws the attention of health professionals to encourage eligible people,

particularly those at high risk, and with a positive family history to undergo CRC screening. Also, they warned the rest of the family about their higher risk of CRC. This perceived increased risk of the disease or better knowledge about the disease-improved uptake of screening.^[40,41]

Reducing the exposure to these risk factors and following the screening guidelines would make an effect on the prevalence of colorectal cancer.^[44,42] The modern-day refocus of the healthcare system on public health interventions to prevent diseases was awaited for a long time to shift the growing incidence of lifestyle threat factors, which include a sedentary lifestyle, increased body mass index, and tobacco consumption.

Symptoms of CRC can vary from specific to systemic such as loss of weight or appetite and fatigue, which explained why patients may misinterpret them as benign or self-limiting diseases such as IBS. Our participants thought that sudden change in the number of bowel motions, the presence of blood in the stool, sudden weight loss was warning symptoms of colon cancer immediate help-seeking in our study. A third thought that the feeling of the not fully emptied rectum with defecation and pain and cramps in the stomach is colorectal cancer symptoms. These findings are similar to previous studies.^[10-12,43-45] A previous study that what affects the help-seeking is the symptom profile of the late-stage disease.^[31,35,46]

Only 30.7% thought about undergoing screening for early detection of colon cancer, and only 6.5% of the subjects did early checkups for colon cancer. This poor uptake is similar to a previous local study that reported a low rate of 5.64% colorectal cancer screening practice among the elderly Saudi population.^[47] Several reasons may explain this low uptake of CRC screening, including low awareness of screening existence and personal fears,^[31,32] low physician adherence to recommend CRC screening or low expectation of help.^[48,49] Moreover, there is a lack of national policy.^[23] Nevertheless, 75.3% of them would undergo early screening for colon cancer if their doctor advised them to do so. One-fourth of the participants attributed the reasons for not undergoing CRC screening to the absence of symptoms or lack of awareness of the need for such screening. While about 7% thought fear or embarrassment of the procedure would be their barrier. Furthermore, lack of time, the difficulty of getting an appointment played a role in a minority of subjects. The previous study stated that misinterpretation of the symptoms, embarrassment, and fear is associated with more endorsed barriers to help-seeking.^[12,46,50-54]

The current evidence recommends screening for colorectal cancer in Saudi people who are at average risk and do not suffer from symptoms. The American Cancer Society recommends colonoscopy in the normal population from age 45 and for at-risk patients, ten years earlier than the age of the affected patient.^[55]

The already conducted health awareness campaign participated in raising the knowledge and awareness of only a quarter of the

subjects (22.9%). Doctors were not actively promoting CRC screening, as reflected by the subjects' responses.

The participants attributed only 17% of their knowledge to doctors. Social media were not adequately utilized in such a vital area, as it only represents 2.2 to 7.4% of the sources of information.

Fortunately, the current strategy of the healthcare system aimed at modifying the risk factors following the Vision 2030 and the National Transformation Program 2020 (NTP).^[4] We expect this step to detect cases at early stages and hence lead to better prognosis than previously reported studies.^[3,13]

The family physician and his team, supported by health decision-makers are the optimal environment for health promotion and disease prevention. Hence, the primary care team should not miss the opportunity to check the colorectal screening records and emphasize the importance of such a procedure for those attending their clinics for whatsoever reasons. They can send a reminder to eligible people and follow-up defaulters, solve barriers, and reduce disparity in health services coverage, towards CRC screening. A previous study showed that high levels of Primary Care Physician interaction result in improvements in CRC screening adherence.^[56]

Fully integrated health education campaigns and awareness programs into the health system can ensure individual use services that are available to prevent CRC cancers. Utilizing paid television advertising and commonly used social media for CRC screening campaigns increase public motivation to participate and in the end prevent a huge number of bowel most cancers deaths.^[57]

Conclusion

The awareness and knowledge of our sample about colorectal cancer were inadequate. Raising the level of knowledge is anticipated to increase the readiness to do the screening. The present data may be useful as fundamental data in making health policy in this area toward the management and prevention of CRC. Such an effort enhanced the recently issued strategy for health promotion and disease prevention, including colorectal cancer as part of Saudi vision 2030. Health professionals should encourage eligible people to go for screening and utilizing social media to improve people's information.

Limitation of the Study

Our study was limited to the primary care clinics of King Saud University Medical City (KSUMC) in Riyadh. We cannot ascertain the generalizability of our findings, as all of the participants come from a single center. So it is advisable to recruit more centers and from all regions of Saudi Arabia. Despite these limitations, we believe that this study can improve awareness, attitude, and practice toward colorectal

screening in Saudi Arabia. The data gathered was self-reported by respondents, not subjected to independent verification, and potentially influenced by recall bias.

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Conflicts of interest

There are no conflicts of interest.

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Appendix: Knowledge, attitude, and practice towards colorectal cancer and its early screening questionnaire items:

General knowledge questions

Have you ever heard of early cancer screening tests?
Colon cancer is a preventable condition
I think colon cancer is fatal
Colon cancer recovery rates increase when detected in the early stages

Risk factors for colon cancer

Men and women are prone to colon cancer
Physical inactivity
Overweight
High Fat Low Fiber Diet
The presence of polyps in the lining of the colon and rectum
Increasing age
Smoking

Symptoms of colon cancer

The presence of blood in the stool
Sudden weight loss
Increase mucus secretions in the stool
Feeling that the rectum was not fully emptied with defecation
Pain and cramps in the stomach
Sudden change in the number of bowel motions and Diarrhea

Methods of early detection of colon cancer

Colonoscopy
PR speculum
Blood detection in the stool sample
Barium dye for the large intestine
Blood tests
Abdominal CT scan
Clinical examination of the rectum

Attitude towards early screening of colorectal cancer

I think I am susceptible to colon cancer
Older adults are more susceptible to colon cancer
I will undergo early screening for colon cancer if my doctor advises me to do so.

Practice

Have you done early checkups for colon cancer?
Have you ever thought about undergoing screening for early detection of colon cancer?

Sources of information of the participants about the early screening of colorectal cancer