



Knowledge, Attitude, And Practice Towards Colorectal Cancer Screening Among Primary Health Care Physicians In Buraydah, Qassim, Saudi Arabia.

Anas Wael Altwijri^{1*} and Unaib Rabbani¹

¹Family Medicine Academy, Qassim Health Cluster, Saudi Arabia

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Abstract

Colorectal cancer is one of the common cancers globally. The knowledge of primary health care physicians (PHPs) regarding screening of colorectal cancer is important in the early identification of cancer and prompt treatment. Therefore, this study aimed to assess the attitude, practices, and knowledge of PHPs working at primary health care centers in Buraydah, Qassim, Saudi Arabia. This was a cross-sectional study conducted among PHPs in Buraydah, Saudi Arabia. Data was collected using a self-administrated validated questionnaire adapted from the National Cancer Institute in the United States of America (USA). Data was analyzed using SPSS version 21.0. Descriptive analysis was carried out to assess knowledge, attitude and practices. A total of 110 primary care physicians participated in the study. Two-thirds (67%) of the participants were Saudi nationals, and a similar proportion (66%) were male. The mean knowledge score was 6.93 ± 3.39 . The mean score in the attitude domain was 10.58 ± 4.02 . Around three fourth 75% of the physicians would start screening at the age of 45 years. We found a lower level of knowledge but a reasonable degree of attitude. This is an important finding that despite having a better attitude towards CRC screening, the physicians working in primary health care centers of Buraydah were deficient in knowledge which may have adverse impact on their practices. Further large-scale studies are recommended to generate robust evidence on the topic.

Keywords Colorectal screening, primary care, physicians, qassim, knowledge, attitude and practices survey

1. Introduction

Colorectal cancer (CRC) is one of the most common cancers globally and in Saudi Arabia with relatively a high mortality due to late diagnoses (1). Screening is essential for the early discovery of the disease, which will help to decrease mortality and morbidity and improve treatment response.

CRC which arises from the colon or rectum has late clinical manifestations as its symptoms result from tumor growth into the lumen or adjacent structures, resulting in hematochezia, melena, unexplained anemia, abdominal pain, and weight loss. At the time of presentation, about 20% of patients in the USA already have metastatic lesions (2).

Since the symptoms are a sign of the advanced stage of cancer, thus a poor prognosis. Screening tools that detect asymptomatic patients are most desirable because patients will have a considerably better survival rate (3).

In one study, there was a significant difference in five-year survival rate between symptomatic and asymptomatic patients; 49% and 71% respectively. The percentage of United States (U.S.) adults aged 50 to 75 who were up-to-date with CRC screening was 68.8% in 2018. However, the lowest rate was 48%, among 50-54 years (4).

One Saudi study with 5720 participants found that only 15.24% of the participants had undergone CRC screening (5). According to WHO and the Pan American Health Organization reports on screening

Corresponding author at: Anas Wael Altwijri
Email address: at7117@hotmail.com



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practices in the U.S. and Canada, coverage of CRC screening programs is approximately 43% in Canada and 58.2% of the U.S. population (6). On the other hand, a review of studies done in Saudi Arabia has shown low-level implementations of CRC's, with less than 7% of participants screened (7).

The national guideline recommends starting screening for asymptomatic persons at average risk from 45 years until 70 years. The recommended modality of screening is a colonoscopy every ten years. If unavailable flexible sigmoidoscopy every five years with either fecal immunochemical test (FIT) or fecal occult blood test (FOBT), and the least recommended modality is CTC (8).

A study from Riyadh, Saudi Arabia, found that 82.9% of the participants would do colorectal screening if their doctor advised them (9). Physician recommendation is an important factor in facilitating CRC screening. In a study, the most common barrier to CRC screening was no recommendation from a physician. Furthermore, fear of painful procedures was another common barrier to colonoscopy (10). A study of 127 Primary Health Physicians (PHPs) found that although 95% of them believe in the effectiveness of CRC screening, only 45% practice CRC screening (11).

Physicians' knowledge, attitude, and practices regarding CRC screening may vary from region to region due to various factors such as availability of resources, continuous medical education, and population perceptions about CRC screening. Therefore, this study aims to assess the knowledge, attitude, and practices of PHPs working at PHCs in Buraydah, Qassim, Saudi Arabia, regarding screening for CRC. The results of this study would help find solutions to the identified contributing factors, therefore, improving the overall screening rates.

2. Methodology

2.1. Study design and setting

We conducted a cross-sectional study among PHPs working in PHCs in Buraydah, Qassim, Saudi Arabia. Data was collected through a self-administrated questionnaire adapted from the National Cancer Institute in the USA and has been validated by Demyati (12). This questionnaire would take about 10 minutes to complete.

2.2. Study population

PHPs working in PHCs in Buraydah, Qassim; including all nationalities, age groups, and sexes.

2.3. Sample size and sampling procedure

Since the population of PHPs was finite, therefore, we invited all those meeting our eligibility criteria. All PHPs working in PHCs in Buraydah, Qassim, for at least the last 12 months were eligible to participate. We excluded medical students, interns, and other specialties as they might have affected the accuracy and validity of the results.

2.4. Data collection tool and procedure

We collected the data using a validated questionnaire. The questionnaire contains demographic characteristics (age, gender, nationality, titles (resident specialist, consultant). The second section has questions to evaluate the knowledge, attitude, practice, and barriers to CRC screening. We handed over the questionnaires to the physicians during working hours and collected them the next day.

Knowledge score: correct answers marked with one and wrong answers with zero. A total of all knowledge questions was calculated for each participant. Knowledge scores were computed based on 11 items. The answers were scored as per recommendations (13).

2.5. Attitude score

Answers with a positive attitude marked with one and a negative attitude marked with zero. A sum of all attitude questions was calculated for each participant. The attitude score was computed based on eight questionnaire items.

2.6. Statistical analysis

We analyzed the data using the Statistical Package of Social Science (SPSS 21 for Windows). Descriptive analysis was done, and means with standard deviation for continuous variables and frequencies with percentages were calculated for categorical variables.

2.7. Ethical considerations

Qassim Regional Bioethics Committee reviewed and approved the study proposal. Furthermore, we also took approval for conducting the research from the PHC administration in Buraydah. The confidentiality of the participants was maintained at all stages of the research.

3. Results

Our study included 110 physicians; most of the participants were Saudi, 67.3%, while others were non-Saudi, 32.7%. The ages of the participant ranged from 27 to 58. A little more than half of the

participants (58.2%) were 30 years and below. 66.4%, and females 33.6%. Two-thirds (67%) were Saudi nationals (Table 1). Additionally, most of them were male,

Table 1: Social-demographic characteristics of participants

Parameter		Frequency (n)	Percentage (%)
Age	Below 30	64	58.2
	Between 30 and 40	22	20.0
	Between 40 and 50	15	13.6
	Above 50	9	8.2
Gender	Male	73	66.4
	Female	37	33.6
Nationality	Saudi	74	67.3
	Non-Saudi	36	32.7
Job title of the participants	Consultant	14	12.7
	FM Trainee	37	33.6
	Resident	43	39.1
	Specialist	16	14.5
Work experience	Mean (\pm SD)	8.54	\pm 8.08

Of the 105 participants, 72.7% preferred to start the screening of the average-risk patient at the age of 45. At the same time, 5.5% of the physicians preferred the screening to start at age 40 and 21.8% preferred it to start at age 50. For healthy patients, 86 physicians preferred the screening not to be of much keenness at the age of 75, it was 78.2%. Three of the participants, which is 2.7% preferred the age of 65 to be the

appropriate age for not taking much consideration about screening. While 21 (19.1%) said that there is no age at which screening is not important. Most participants were aware of the screening-stopping age, which is 89 (80.9%). But also, 21 (19.1%) were unaware of the age to stop screening. The mean score of knowledge was 6.93 ± 3.389 (Table 2).

Table 2: Assessment of knowledge among participants

Knowledge item		Frequency (n)	Percentage (%)
Starting screening at age 45		80	72.7
Age at terminating screening		86	78.2
Stopping screening at 75 years		89	80.9
FIT awareness	Giving patients FIT kits to complete at home	88	80.0
	Not sure	16	14.5
	The FIT card in the office during a digital rectal exam	6	5.5
The interval between each screening modality	Annual FIT	48	43.6
	Ordering every 2 years, a flexible sigmoidoscopy	9	8.2
	Ordering every 3 years, a colonoscopy	44	40.0
	Not sure	8.2	8.2
Mean knowledge score (mean \pm SD)		6.93 ± 3.389	

Regarding the attitude toward the screening procedure at 45 years and above, 94.5% believed that FIT was

effective, and 97.3 believed that colonoscopy is an effective procedure. Forty-five percent believed

flexible sigmoidoscopy is effective. About 22% believed a double-contrast barium enema is effective. And lastly, 52.7% believed CT colonography is effective. More than half (55.5%) preferred opportunistic screening for CRC. Regarding the knowledge and attitude of PHPs toward CRC screening about interval for performing screening for

individual screening, 48 (43.6%) were aware of the annual year screening of FIT, 8.2% knew the two-year screening interval, 40% knew about the three-year interval for screening FIT, and lastly, 8.2% were not sure about the screening interval. The mean attitude score was 10.58 ± 4.021 (Table 3)

Table 3: Assessment of attitude among participants

Item	Frequency (n)	Percentage (%)
CRC screening is effective for asymptomatic average-risk patient	107	97.3
FIT is effective	104	94.5
Flexible sigmoidoscopy is effective	50	45.5
Colonoscopy is effective	107	97.3
A double-contrast barium enema is effective	24	21.8
CT-colonography is effective	58	52.7
Opportunistic over structured screening program preference	61	55.5
Mean attitude score (mean \pm SD)	10.58 ± 4.021	

For the majority of the asymptomatic average-risk patients, most physicians would start screening for CRC at 45 years. This shows that most physicians

correlate advanced age with the development of CRC. However, no participant suggested that screening should be started at above 55 years.

Table 4: Practices of primary health care physicians related to colorectal cancer screening

Variable	Frequency (n)	Percentage (%)	
Do you perform Colorectal Cancer screening for asymptomatic average-risk patients aged 45 years and older? Yes	100	90.9	
Factors influencing recommendation of colorectal screening; (Yes)	Clinical evidence in the published literature	103	93.6
	U.S. Preventive Services Task Force recommendations	98	89.1
	Ministry of Health recommendations	104	94.5
	Practice of colleagues	59	53.6
	Patients' preferences for colorectal cancer screening	72	65.5
Screening tests you discuss with your patients	FIT	62	56.4
	FIT & Colonoscopy	34	30.9
	FIT, Sigmoidoscopy & Colonoscopy	8	7.3
	Sigmoidoscopy, Colonoscopy	3	2.7
	Colonoscopy only	3	2.7
Frequency of ordering FIT test in a typical month	0	4	3.6
	1-10	78	70.9
	>10	28	25.5
Which test do you recommend as a follow-up after a positive FIT test	Coloscopy	60	54.5
	Repeat FIT & Coloscopy	19	17.3
	Repeat FIT	15	13.6

	Combination of two or more among; colonoscopy, Sigmoidoscopy, CT Colonography	16	14.5
Is there a reminder system for positive FIT test patients for follow-up Yes		45	40.9%
Frequency of referring asymptomatic average-risk patients in a typical month	0	57	51.8
	1-5	49	44.5
	11-20	1	0.9
	6-10	3	2.7
To whom do you refer?	Gastroenterologist	81	73.6
	Internist	3	2.7
	Refer directly to the colonoscopy center	3	2.7
	Surgeon	23	20.9

Table 4 shows the practices of PHPs related to colorectal cancer screening. The majority (91%) of the participants perform Colorectal Cancer screening for asymptomatic average-risk patients aged 45 years and older. The most common sources of influence on the recommendation of colorectal screening were Ministry of Health guidelines (94.5%), closely followed by evidence in the published literature (93.6%). The most common screening test discussed with patients was the FIT test (56%). Around 71% of physicians would order/perform 1-10 FIT tests each month. More than half (52%) do not refer any asymptomatic average-risk patients in a month while 44.5% of the PHPs would refer 1-5 such patients in a month.

4. Discussion

This study evaluated the attitude and knowledge of physicians on screening for CRC. Many studies have been done in Saudi Arabia regarding CRC. Most of these studies showed the significant importance of screening in preventing cancer. Knowledge concerning screening CRC is very important to distinguish between patients who may need investigation and manage possible cases properly. On the other hand, complementing attitude is a clear indication of willingness to take charge of that available knowledge. This study portrayed little knowledge level (6.93 ± 3.389 out of 10). The attitude was relatively fair (10.58 ± 4.021 out of 7) amongst the 105 participants. In terms of overall understanding, this is lower than Demyati's (12) findings but similar to Mosli et al (11) findings. Practitioners' quality standards were also found to be

low in Saudi Arabia. Due to the differences in methodology and measures utilized, this comparison may not be entirely accurate. The research performed in Saudi Arabia found a knowledge gap impacted by the respondents' schooling degrees(14). This was true even outside of Saudi Arabia. A large research in the US found that the general public has a poor level of understanding (15). According to research done in the Asia-Pacific area, the poorest countries' populations had a poorer level of understanding (16).

About 78 percent of participants in the current research were aware of the age at which monitoring should be discontinued. This is higher than Mosli et al. (32.3%) (11) and Demyati's (39.2%) (12). Variances can explain this disparity in study locations and the prevalence of non-Saudis in this study. This implies that they may have had diverse backgrounds and information sources. Saudis also had better development of awareness than non-Saudis, as seen in the data above; nevertheless, non-Saudis had a more optimistic outlook. This supports the premise that the differences mostly influenced the results provided in locality and environment.

According to CDC (2020), regular screening beginning at 45 years is key to preventing CRC. The United States Preventive Task Force has given recommendations for screening to be done for adults aged between 45 and 75 years (13).

The results revealed that 82.9 % of the participants disagreed with the availability of colonoscopy for moderate-risk patients. This shows the state of health care in Saudi Arabia. On the other hand, this may suggest a lack of knowledge by the participants on the

availability of colonoscopy or alternative screening methods.

The results show that the overall attitude of the participants was fair. This is true according to another study (12) which showed that men have better attitude management compared to women. Also, with the advent of National Guard Hospital Affairs (NGHA), female physicians are mostly attached to and caring for female patients. CRC being more prevalent in males than females may explain the less positive attitude in female physicians toward CRC screening compared to screening for breast cancer.

5. Limitations of the study

The study sample was taken in Buraydah, Al-Qassim. As a result, it may not reflect the population of Saudi Arabia. Secondly, as data was collected at one point, multiple factors may influence the results. Thirdly, the cross-sectional study design is associated with low validity and is greatly sensitive to various biases. Also, the questionnaires were self-administered, which is subject to reporting bias.

6. Conclusion

We found a lower level of knowledge but a reasonable degree of attitude. This is an important finding that despite having a better attitude towards CRC screening, PHPs working in the PHCs of Buraydah were deficient in knowledge which may have a negative impact on their practices. Further large-scale studies are recommended to generate robust evidence on the topic. There is also a need to assess the factors that affect the knowledge, attitude, and practices of PHPs about CRC screening.

Conflict of Interest Authors declare that there is no conflict of interest.

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