INTERNATIONAL DEVELOPMENT PLANNING REVIEW
ISSN:1474-6743 | E-ISSN:1478-3401

ASSESS KNOWLEDGE, EXPERIENCES, AND BARRIERS TO COLORECTAL CANCER SCREENING IN SAUDI ARABIA

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Abstract

Background: The related morbidity and death rates can be considerably decreased with early identification and screening for colorectal cancer (CRC). In primary care settings, healthcare professionals (HCPs) are essential to cancer prevention and early identification via screening.

Aim: This study looked into HCPs' perceptions, experiences, and awareness of the obstacles that CRC screening faces in primary care settings.

Methods: Data from 236 health center employees were gathered using a SAQ that is self-administered and uses a cross-sectional approach. Nurses (45.8%), doctors (45.3%), and other professions (7.2%) made up the participants.

Results: The recommended age for individuals with average risk to start CRC screening was not well understood by medical professionals (30%). On knowledge questions about CRC screening, doctors performed better than nurses. 75.8% of HCPs thought that CRC could be avoided. Healthcare providers found out that many patients are afraid to find out if they have cancer because it makes getting checked for colorectal cancer more difficult for them. Also, many patients don't know much about the tests used for colorectal cancer screening. There are not enough healthcare providers who are experienced in doing the tests for colorectal cancer. And there is no set policy or way of doing colorectal cancer screening.

Conclusion: Primary care providers lack sufficient understanding regarding colorectal cancer screening. To raise HCPs' awareness and compliance with current screening standards, tailored continuing education programs and other interventions are required. Increased CRC screening in primary care settings may result from this.

Keywords: Medical professionals, Cancer prevention, Colorectal cancer screening venues for primary care, knowledge, and obstacles

Introduction

Around the world, cancer is the leading cause of mortality, accounting for 7.6 million deaths annually or 13% of all deaths. According to the WHO, 70% of these fatalities take place in low- and middle-income nations. Worldwide, 9. 4% of cancer cases are colorectal cancer (CRC). In the Middle East, it ranks fourth among cancers in males and third among cancers in women. Over 18.1% more deaths in the Middle East are predicted to be caused by cancer in the next fifteen years. (WHO et al., 2013)

According to information from the Ministry of Health, the number of people getting cancer is 80. 2 out of every 100,000 people. For men, it is 74 out of 100,000 and for women, it is 86. 9 out of 100,000. In the last ten years, there have been a lot more people getting cancer. According to more recent data, colorectal cancer ranks second in women's cancer incidence and first in men's cancer incidence. It is also the second most common cause of cancer-related mortality. The rate for men is 18.2 per 100,000, and the rate for women is 16.5(Al-Zahrani et al., 2003)

Numerous risk factors, including dietary habits that prioritize red meat and fats over vegetables and fiber, are associated with colorectal cancer (CRC). In addition, there are genetic predispositions (such hereditary polyposis and nonpolyposis syndromes), obesity, smoking, age over 50, inactivity, and long-term alcohol consumption. The risk of colorectal cancer is increased by both diabetes and chronic inflammatory bowel diseases, such as Crohn's disease and ulcerative colitis (CRC). These risk factors are widespread and on the rise in Middle Eastern countries; women experience greater rates of obesity (35-75%) than men (30-60%), with obesity rates hovering around 25%. Therefore, a rise in CRC instances may be caused by these high-risk factors: smoking (29%), obesity or overweight (44.6–64.8%), and diabetes (16%). (Jemal et al., 2007)

In the Middle East, many people are getting very sick with a type of cancer called colorectal cancer. This is a big problem because there are already a lot of people with cancer in this area, and there are things that make them more likely to get colorectal cancer. Good plans like checking, finding

problems early, and getting help can stop this from happening. Research shows that finding and screening for colorectal cancer early can greatly reduce the number of people who get sick and die from it. The World Health Organization (WHO), American Cancer Society, US Multi-Society Task Force on Colorectal Cancer, American College of Radiology, and US Preventive Services Task Force (USPSTF) are groups that looked at these studies to make rules for checking for colon cancer that are based on evidence. When checking for colorectal cancer, doctors often use the National Comprehensive Cancer Network (NCCN) guidelines. (Vir et al., 2010)

In the USA, the USPSTF guidelines from 2008 are commonly used. It is recommended that those with an average risk of colorectal cancer, both males and females, begin screening at age 50 and continue screening until they reach the age of 75. We should use tests like FOBT, sigmoidoscopy, colonoscopy, and DCBE to check for blood in the stool and other problems in the colon. People who are 76 to 85 years old should not regularly get screened. Adults over 85 years old should not undergo screening. These recommendations place a strong emphasis on accessible methods, early detection in at-risk persons, and prevention. The advantages of using these guidelines in the detection of cancer and adenomatous polyps outweigh any possible risks or problems. (Dey & Soliman, 2010)

Despite the high prevalence of CRC, national health authorities have not yet implemented particular screening procedures or guidelines. The main obstacle to CRC screening is the absence of guidelines. Financial difficulties, insurance issues, test anxiety and discomfort, and ignorance are some other obstacles. It's important for patients and healthcare professionals to be aware. When it comes to providing CRC screening and other preventive treatments, healthcare professionals (HCPs) in primary care settings are essential because they conduct screening tests, give education, advise, referrals, and follow-up care. The acceptance of screening by patients is greatly influenced by HCP recommendations. HCPs, however, need to be informed on the methods, eligibility requirements, and suggested timeframes for CRC screening tests and procedures. (Umar & Greenwald, 2009)

Obstacles pertaining to HCPs' expertise, patient characteristics, and the healthcare system might also impact CRC screening. Research indicates that health care professionals who have personally witnessed colorectal cancer in patients or family members are more inclined to advocate for screening. The purpose of this study is to investigate healthcare professionals' viewpoints, experiences, and knowledge on barriers to colorectal cancer screening in primary care settings. Primary care HCPs are the target because they often work with patients who meet the criteria for colorectal cancer screening, which provides them with knowledge of the challenges. The results have importance in terms of introducing easily accessible CRC screening programs, improving healthcare capabilities for cancer prevention and follow-up treatment, and increasing public knowledge of CRC and screening. (Huxley et al., 2009)

Methods

Obstacles pertaining to HCPs' expertise, patient characteristics, and the healthcare system might also impact CRC screening. Research indicates that health care professionals who have personally witnessed colorectal cancer in patients or family members are more inclined to advocate for screening. This study aims to explore the perspectives, experiences, and knowledge of healthcare professionals about obstacles to colorectal cancer screening in primary care settings. Primary care HCPs are the target because they frequently engage with clients who qualify for CRC screening, which gives them insight into the obstacles. The results have importance in terms of introducing easily accessible CRC screening programs, improving healthcare capabilities for cancer prevention and follow-up treatment, and increasing public knowledge of CRC and screening.

236 HCPs provided data for this study, with the data being gathered using convenience sampling. If they fulfilled the requirements for inclusion, HCPs working at the health centers were invited to take part. Participants who could read and write, were directly involved in patient care, and were formally employed were eligible. The study excluded health care professionals who only worked with clients who were pregnant or had children.

Data Collection Instrument

Data was gathered by a self-administered questionnaire (SAQ). The SAQ was composed in both Arabic and English. Ten specialists in the fields of gastroenterology, nursing, and research/statistics evaluated the SAQ for face and content validity as well as accuracy after study approval was obtained. Based on their feedback, changes were made. Thirty medical professionals from university hospital outpatient and family medicine departments pretested the SAQ to ensure that it was clear, logical, and had a reasonable completion time. The main criticism was made over response coding and completion time.

The 48 items in total across five sections of the SAQ were created using international CRC screening recommendations and relevant research. The screening interval questions complied with average-risk adults over 50 guidelines from the American Cancer Society (ACS) and the US Preventive Services Task Force (USPSTF). The first component collected information on age, gender, education level, work experience, and marital status. In the second phase, information was gathered about clinical practice settings, including patient load, out-of-pocket patient volume, and frequency of patients 50 years of age and older. The final section covered HCPs' experiences with CRC screening on a personal and professional level. These experiences encompassed getting the test, caring for CRC patients, participating in cancer prevention education, and prescribing or ordering CRC screening for patients.

The fourth section consisted of thirteen items; the first eight created a scale to assess knowledge about colorectal cancer screening. Protocols, recommended intervals, and eligibility for CRC screening were covered in six questions. One point was awarded for flawless answers, and zero for incorrect ones. In two more questions, participants had to list four risk factors and common indications of colorectal cancer. Correct answers were worth 0.25 points. Eight was the maximum

possible score. The knowledge scores fell into three categories: very good (6.00–8.00), good (4.00–5.75), and bad (0.00–3.75). The knowledge scale's reliability was 0.79. In the fifth segment, participants evaluated the fourteen patient and system-related hurdles to CRC screening, classifying them as either not a barrier, mild barrier, or significant barrier. Participants may also bring up other obstacles not on the list.

Data Collection and Analysis

The Institutional Review Board gave their approval to the project. Recruitment and training of eight research assistants (RAs) on the goals, protocols, SAQ, research ethics, and consent process took place. RAs visited particular health centers on data collecting days, introduced themselves to the center director, and gave introductory letters. They then explained the trial to any available HCPs. The SAQ and a consent form were provided to HCPs who agreed to participate. A convenient time was set for the same day if an HCP was busy. Prior to data collection, participants signed and read the consent form. Participants' personal information was not gathered. To avoid conversations over the SAQ topic, data collecting at each center was finished in a single day. Consent was expressed by completing and returning the SAQ. The data were assessed using chi-square tests and descriptive statistics, with a significance level of $p \leq 0.05$ applied to each test.

Results

Features of the Medical Professionals in the Sample

Table 1 details the characteristics of the 236 participants, nearly equalizing the presence of nurses (45.8%) and physicians (45.3%). The HCPs' average age was 35.37 years, and they had worked in healthcare facilities for 9.39 years on average. The majority of doctors (93.1%) were general practitioners, while only 7.6% had a focus on family medicine. 10.6% of HCPs reported having assisted in the instruction of medical students from nearby medical schools who were interested in becoming health professionals. About one-third of the physicians (31%) and nurses (29.3%) said they saw a minimum of 100 patients in a typical workweek.

Experiences of Health Care Providers with CRC Screening

Table 2 shows that a relatively small percentage of HCPs had knowledge of colorectal cancer (CRC) or CRC screening, either personally or professionally. Few HCPs had firsthand knowledge of family members who had received a CRC diagnosis or who had undergone screening for the disease. HCPs have little professional experience with colorectal cancer (CRC) or CRC screening. Few had experience treating patients who had colorectal cancer (CRC) or frequently saw CRC patients in their clinical settings. Few have participated in CRC screening or ongoing education on cancer prevention. Regarding their limited experience with patients who need a CRC screening, a significant portion of HCPs self-reported.

Views regarding CRC Screening

All HCPs (Table 3) expressed a favorable opinion of CRC screening. The majority of respondents believed that CRC is preventable (75.8%), helpful to patients (85.6%), and significant (55.5%). However, half of the HCPs felt that their professional education and training had not prepared them well enough to provide cancer screening and preventive services.

Healthcare Professionals' Awareness of CRC Screening

Table 4 presents a summary of the information that medical professionals know about colorectal cancer (CRC) screening. It includes the recommended age to start CRC screening for people at average risk (33.2%), the age at which it is not advised (12.5%), and the fact that ultrasound is not recommended for CRC screening (25%). A significant proportion of physicians (49%) and nurses (40%) were not aware of the recommendations for CRC screening. Although there was no significant difference in the overall knowledge ratings between nurses and physicians, physicians possessed much better knowledge about CRC symptoms and screening procedures. In response to a question regarding high-risk groups for colorectal cancer screening, participants listed the following: a history of ulcerative colitis (18.6%); a family history of adenomatous polyps unrelated to a genetic condition (16.1%); a minimum of one first-degree relative (24.6%) and a minimum of two first-degree relatives (19.6%) each having a diagnosis of colorectal cancer before the age of 50. The barriers that health professionals reported having an impact on their CRC screening practices included the scarcity of cancer specialists (65.3%), cancer-related policies at healthcare facilities (61.9%), opportunities for continuing education on cancer-related topics (59.7%), the regular availability of patients in need of cancer screening services (55.5%), and the availability of clinical evidence in peer-reviewed journals (48.3%).

Table 1 demographic data of participants

Characteristic	**Category**	**Frequency (%)**
Gender	Female	119 (50.4%)
	Male	116 (49.2%)
Age (mean=35.37, SD=10.53)	20–40	175 (74.2%)
	41–60	57 (24.2%)
	>60	4 (1.7%)
Job	Nurses	108 (45.8%)
	Physicians	107 (45.3%)
	Other (diagnostic labs, nutritionists)	17 (7.2%)
Education	Doctoral	4 (1.7%)
	Master	12 (5.1%)
	Bachelor	143 (60.9%)
	Diploma	47 (19.9%)
Experience in years	<5 years	88 (37.3%)
	5–10 years	48 (20.3%)
	11–19 years	46 (19.5%)
	>20 years	46 (19.5%)

Characteristic	Category	Frequency (%)
Years in a health center	<1 year	71 (30.1%)
	1–2 years	43 (18.2%)
	3–5 years	47 (19.9%)
	>5 years	72 (30.5%)
Practice setting affiliation	Yes	25 (10.6%)
school	No	208 (88.1%)
Patients per week	20–60	35 (14.8%)
	61–99	53 (22.4%)
	>100	144 (61%)
Percentage above 50 years	Never	6 (2.5%)
	Rarely	41 (17.4%)
	Often	110 (46.6%)
	Very often	76 (32.2%)
Percentage pay for their own health care	1–25 %	150 (63.6%)
	25–50 %	44 (18.6%)
	>51 %	25 (10.6%)

Table 2 The participants' experiences with colorectal cancer and cancer screening.

Experience related to CRC screening	Nurses (N=107)	Physicians (N=108)	Others (N=17)
family member with CRC	Yes: 9 (3.9%)	Yes: 3 (1.3%)	Yes: 3 (1.3%)
	No: 99 (43%)	No: 90 (39.1%)	No: 14 (6.1%)
undergone CRC screening	Yes: 2 (0.9%)	Yes: 20 (8.7%)	Yes: 3 (1.3%)
	No: 104 (45.7%)	No: 86 (37.4%)	No: 14 (6.1%)
Participated in cancer prevention	Yes: 17 (7.6%)	Yes: 30 (13.3%)	Yes: 7 (3.1%)
activities in the past 3 years	No: 87 (38.7%)	No: 74 (32.9%)	No: 10 (4.4%)
Participated in CRC prevention	Yes: 2 (5.6%)	Yes: 6 (16.7%)	Yes: 4 (11.1%)
activities in the past 3 years	No: 10 (27.8%)	No: 9 (25%)	No: 5 (13.9%)
Took care of a patient with CRC	Yes: 21 (9.2%)	Yes: 32 (14%)	Yes: 5 (2.2%)
Comes across patients with CRC			

Experience related to CRC screening	**Nurses (N=107)**	**Physicians (N=108)**	**Others (N=17)**
in current clinical practice	Never: 59 (25.7%)	Never: 31 (13.5%)	Never: 6 (2.6%)
	Rarely: 39 (17%)	Rarely: 69 (30%)	Rarely: 11 (4.8%)
	Regularly: 9 (3.9%)	Regularly: 6 (2.6%)	Regularly: 0 (0%)
professional experience			
in working with patients requiring			
CRC screening	None: 13 (5.6%)	None: 20 (8.7%)	None: 1 (0.4%)
	Little: 52 (22.5%)	Little: 48 (20.8%)	Little: 13 (3.6%)
	Good: 15 (6.5%)	Good: 29 (12.6%)	Good: 1 (0.4%)
	Very good: 28 (12.1%)	Very good: 9 (3.9%)	Very good: 2 (0.9%)
Ordered, referred, educated, or			
recommended a patient for genetic			
testing for CRC susceptibility			
(multiple responses)			
Ordered: 3 (1.3%)	Ordered: 4 (1.7%)	Ordered: 2 (0.9%)	
Referred: 7 (3%)	Referred: 22 (9.6%)	Referred: 0 (0%)	
Recommended: 6 (2.6%)	Recommended: 14 (6.1%)	Recommended: 3 (1.3%)	
Health educated: 7 (3%)	Health educated: 8 (3.5%)	Health educated: 2 (0.9%)	
None: 84 (36.5%)	None: 58 (25.2%)	None: 10 (4.3%)	
Ordered, referred, health educated,			
or recommended for CRC screening			
(multiple responses)			
Ordered: 15 (6.6%)	Ordered: 23 (10%)	Ordered: 3 (1.3%)	
Referred: 8 (3.5%)	Referred: 13 (5.6%)	Referred: 4 (1.7%)	

Experience related to CRC screening	**Nurses (N=107)**	**Physicians (N=108)**	**Others (N=17)**
Recommended: 4 (1.7%)	Recommended: 18 (8.7%)	Recommended: 1 (0.4%)	
Health educated: 8 (3.5%)	Health educated: 12 (5.2%)	Health educated: 3 (1.3%)	
None: 73 (31.6%)	None: 40 (17.3%)	None: 6 (2.6%)	
Often recommends CRC screening			
to patients aged 50+	Never: 65 (28.1%)	Never: 30 (13%)	Never: 6 (2.6%)
	Rarely: 35 (15.2%)	Rarely: 62 (26.8%)	Rarely: 9 (3.9%)
	Often: 7 (3%)	Often: 11 (4.8%)	Often: 1 (0.4%)
	Very often: 1 (0.4%)	Very often: 3 (1.3%)	Very often: 1 (0.4%)

Table 3 Views of medical personnel regarding CRC screening

Opinion statement	**Response**	**Nurses (N=107)**	**Physicians (N=108)**	**Others (N=17)**
Believes that CRC is a preventable disease	Yes	89 (38.9%)	74 (32.3%)	13 (5.7%)
	No	18 (7.9%)	31 (13.5%)	4 (1.7%)
Believes that CRC screening benefits patients' health	Yes	91 (39.6%)	96 (41.7%)	12 (5.8%)
	No	16 (7%)	10 (4.3%)	5 (2.2%)
Opinion about adequacy of professional training	Not addressed	44 (19.3%)	20 (8.8%)	5 (2.2%)
in preparing for cancer prevention and screening	Inadequate	52 (22.8%)	58 (25.4%)	6 (2.6%)
	Adequate	7 (3.1%)	21 (9.2%)	3 (1.3%)
	Very adequate	3 (1.3%)	6 (2.6%)	3 (1.3%)
Opinion about the importance of CRC screening	Not important	6 (2.7%)	1 (0.4%)	0 (0%)
	Important	47 (20.8%)	39 (17.3%)	4 (1.8%)

Opinion statement	Response	Nurses (N=107)	Physicians (N=108)	Others (N=17)
	Very important	52 (23%)	64 (28.3%)	13 (5.8%)

Table 4 HCPs' level of knowledge regarding CRC screening (knowledge scale)

Aspect of CRC knowledge	Item	Number of HCPs with correct answer	Chi-square and p value	Nurses (N=107)	Physicians (N=108)
Eligible patients	Age to begin CRC screening	Nurses: 21 (9.1%)	$\chi2=18.45$, p=0.00	56 (24.1%)	
	(average risk patients)	Physicians: 56 (24.1%)			
	Individuals not recommended	Nurses: 12 (5.2%)	$\chi2=116.76$, p=0.00	17 (7.3%)	
	for CRC screening (older than 75)	Physicians: 17 (7.3%)			
Screening procedures	Procedures not recommended	Nurses: 19 (8.2%)	$\chi2=53.15$, p=0.00	39 (16.8%)	
	for CRC screening (abdominal	Physicians: 39 (16.8%)			
	ultrasound)				
	Recommended screening frequency	Nurses: 18 (7.8%)	$\chi2=63.06$, p=0.00	35 (15.1%)	
	in eligible patients using FOBT	Physicians: 35 (15.1%)			
	(every 1 year)				
	Recommended screening frequency	Nurses: 7 (3%)	$\chi2=122.45$, p=0.00	24 (10.3%)	
	in eligible patients using sigmoidoscopy	Physicians: 24 (10.3%)			
	(every 5 years)				

Aspect of CRC knowledge	Item	Number of HCPs with correct answer	Chi-square and p value	Nurses (N=107)	Physicians (N=108)
	Recommended screening frequency	Nurses: 2 (0.9%)	$\chi2$=194.05, p=0.00	8 (3.4%)	
	in eligible patients using colonoscopy	Physicians: 8 (3.4%)			
	(every 10 years)				
Common manifestations	Abdominal pain	Nurses: 37 (15.9%)	$\chi2$=137.82	50 (21.6%)	
	Blood in stool	Nurses: 51 (22%)	p=0.00	86 (37.1%)	
	Change in bowel habits (constipation)	Nurses: 52 (22.4%)		68 (29.3%)	
	Weight loss	Nurses: 74 (39.4%)		101 (53.7%)	
Common risk factors	Personal history of CRC	Nurses: 12 (5.2%)	$\chi2$=135.27, p=0.00	33 (14.2%)	
	Strong family history of CRC	Nurses: 23 (9.9%)	p=0.00	60 (25.9%)	
	Genetic syndrome of adenomatous	Nurses: 6 (2.6%)		10 (4.3%)	
	Irritable bowel disease	Nurses: 17 (7.3%)		37 (15.9%)	
Knowledge scale scores (M=1.91, SD=1.06)	Poor knowledge (score=0.0–3.75)	Nurses: 73 (39.7%)	$\chi2$=4.108, p=0.128	90 (48.9%)	
	Good knowledge (score=4.0–5.75)	Nurses: 1 (0.5%)		7 (3.8%)	
	Very good knowledge (score=6.0–8.0)	Nurses: 0 (0%)		0 (0%)	

Discussion

This study provides a new perspective on healthcare professionals' (HCPs) experiences, beliefs, and understanding of colorectal cancer (CRC) screening in primary care settings. The statistics indicate that HCPs commonly lack the requisite knowledge regarding CRC screening, despite their usually positive attitudes regarding cancer prevention and screening. It was discovered that a large number of HCPs lacked current understanding of CRC screening techniques, including FOBT, DCBE, sigmoidoscopy, and colonoscopy. Previous research have noted this lack of knowledge and training, which points to a larger problem with medical education about medical professionals' abilities to prevent and detect cancer. (Musaiger, 2004)

The study indicates that HCPs' insufficient knowledge about CRC screening acts as a significant barrier, affecting their ability to recommend specific screening tests or procedures effectively. This finding is consistent with earlier research that emphasized the critical role of clinician recommendations and knowledge in influencing CRC screening rates. Interestingly, while many HCPs expressed familiarity with guidelines from organizations like the American Cancer Society (ACS) and the US Preventive Services Task Force (USPSTF), their actual adherence to these guidelines in practice was limited. (Motlagh et al., 2009)

Moreover, the study identified a lack of engagement among HCPs in learning activities to improve their knowledge of CRC screening. This is evident from the low participation rates in professional continuing education programs specifically focused on cancer prevention and screening. HCPs also assessed that they had little expertise with CRC screening, which emphasizes the necessity for focused teaching programs. (Klabunde et al., 2003)

The study also identified important variables that affect HCPs' CRC screening practices, such as the presence of cancer screening policies in healthcare facilities and the availability of cancer experts. This points to possible ways to improve CRC screening, such as raising HCPs' level of awareness and putting particular hospital policies and procedures into place. (McFarland et al., 2008)

Multimodal interventions are needed to address the challenges to CRC screening that have been identified. These include creating explicit health facility policies and protocols for CRC screening, revising formal training curriculum to incorporate complete content on cancer prevention and screening, and improving the understanding of health professionals through continuing education programs. These initiatives, which are aimed at doctors, nurses, and other healthcare professionals, have the potential to greatly enhance CRC screening rates as well as general public health results. (Hannon et al., 2008)

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