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Research Article

**STUDY ON KNOWLEDGE AND ATTITUDE AND PRACTICE
OF COLORECTAL CANCER AMONG SHAQRA POPULATION
OF SAUDI ARABIA****Ayman algadaa, Mohamed atif, Abdulrahman alhadlaq, Faisal alsaleh,
Abdullah bin sheha, Ahmed alosaimi**

Collage of Medicine, Shaqra University, Shaqra, Saudi Arabia

Article Received: August 2020**Accepted:** September 2020**Published:** October 2020**Abstract:**

Colorectal cancer screening aims at early detection and prevention of colorectal cancer disease. Although numerous efforts have been made in this front, there is still a lot that needs to be done to elevate cancer screening participation. The extent to which knowledge about colorectal cancer contributes to the practice of colorectal cancer screening is yet to be known. This study aims at establishing whether knowledge about colorectal cancer significantly influences population practices towards colorectal cancer screening in Shaqra province of Saudi Arabia.

Methods: *The study was a cross-sectional study, which was conducted among the Shaqra population of Saudi Arabia. The study was approved by the Saudi Arabia ministry of health. The target population was adult people who live in Shaqra province. The random sampling method was applied in choosing the participants. The analysis included descriptive analysis as well as inferential analysis. The Pearson chi-square test was used in testing the hypothesis.*

Results: *A questionnaire was administered to 450 respondents from Shaqra province of Saudi Arabia. Generally, there was a poor understanding of colorectal cancer as evidence by reports of symptoms and risk factors were majority responded saying they did not know (40% and 32.4% respectively). There was a substantial correlation between level of education and screening awareness ($p < 0.05$). Colorectal cancer screening was significantly linked with both colorectal cancers being preventable and the use of colonoscopy during its screening ($p < 0.05$).*

Conclusion: *Lack of information about colorectal cancer is not attributable to the demographic characteristics of the participants but generally due to the lack of easily and efficiently available information by the relevant institutions.*

Keywords: *CRC, Colorectal cancer, screening, colonoscopy, Demographics,*

Corresponding author:**Ayman algadaa,**

Collage of Medicine, Shaqra University, Shaqra, Saudi Arabia

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INTRODUCTION:

Globally, cancer is a life-threatening disease that affects the whole world, especially in developed countries, there are 18.1 million new cancer incidences and 9.6 million deaths due to cancer in 2018 in both sexes. Lung cancer has the highest incidence (11.6 % of all cases), closely followed by female breast cancer (11.6 %), prostate cancer (7.1%), the fourth one is colorectal cancer (6.1%). Colorectal cancer is a very serious disease, which is responsible for about 5.8% of all death cases caused by cancer in 2018 ¹ and is considered the third most common cancer among men and the second in women in 2012. ² It is most common in people over the age of 70, and all people over 50 years should be screened, ³ but several decades ago, the cases of CRC cancer are rising among people who are under 50 years in several countries, which is described as early-onset colorectal cancer. ⁴

The colon is usually defined as a part of the digestive system, which is accountable for processing indigestible food material after most nutrients are absorbed in the small intestine, it consists of 5 parts, which include cecum, ascending colon, transverse colon, descending colon and the sigmoid colon, ⁵ the rectum is the part from large bowel that encompasses 12 – 15 cm. ⁶

In general, cancer is an abnormal growth of cells, it can start in any part of the body ⁷, but when we use the term of colorectal cancer that means cancer which starts in the colon and rectum, we can also define it as an accumulation of the genetic change leading to develop cancer in the rectum and colon. ⁸ There is an abnormal growth in the lining of the colon called polyps, which may almost be the precursor of colorectal cancer. The type of polyps usually is adenomatous polyps, which start as a benign polyp first then after several genetic mutations supported by environmental factors it transforms into malignant polyps; adenomatous polyps can be either tubular or villous. The risk of malignancy transformation depends on the size of the polyps, in 1-cm diameter, there is a projected 10% risk for cancer while about one-third of polyps >3cm will transfer to malignancy, adenoma larger than 5mm in diameter should be excised because it has a chance to be malignant, polypectomy is a modality for removing small polyps, but large polyps may need endoscopic mucosal resection. Recently, in the western countries, there are many people who have been diagnosed with polyps in the colon and rectum, which have been discovered as a result of frequent use of colonoscopy and other screening modalities such as flexible sigmoidoscopy

and stool-blood tests, which indicate a high prevalence of adenomatous polyps ⁹, polyps usually take many years to develop into cancers, but not all polyps become cancerous.

There are no specific causes for CRC except the gene mutation and familial syndromes. Mutations of the adenomatous polyposis coli (APC) gene transpire in two-thirds of colonic adenomas. They are alleged to develop early in the carcinogenesis passageway, but there are many risk factors associated with colorectal cancer such as smoking, inflammatory bowel disease, high fat diet, Alcohol, cholecystectomy, and Ulcerative colitis (UC). ¹⁰ Also, there is a relationship between weight status and colorectal cancer among women. ¹¹ There are some predictive signs and symptoms for colorectal cancer that entail: rectal bleeding, alteration in bowel habit ¹², and the proximal lesion may come later with iron deficiency anemia or mass. CRC, in general, have a worse prognosis, but we can identify the specific treatment and prognosis for the case depending on staging, there are two classifications: Dukes classification and the TNM system which is more detailed. CRC can be spread locally by lymphatics or bloodstream, most commonly, it affects the liver via the portal vein, and 50% of CRC individuals will develop liver metastasis at some point, and one-third of them will have developed liver metastasis during the time of diagnosis by CRC.

There is no proven way to prevent colorectal cancer except screening ¹³, the screening program plays a substantial role in reducing the incidence of the disease that involves colonoscopy, polypectomy, and CT scan, which is considered the less invasive way. Believing by this concept and increase the social awareness that the adenomatous polyps consider as a colorectal cancer precursor and removing them help to prevent the disease will encourage people to do the screening. ¹⁴

Screening of CRC is divided into invasive and non-invasive tests. The non-invasive tests encompass blood, stool, and radiological tests; the invasive tests include colonoscopy and flexible sigmoidoscopy (FS). Colonoscopy is the gold standard test that allows direct visualization to detect neoplasia and colonic polyps in the entire colon, also offers excision of the polyps and getting a specimen of the neoplasia. Guaiac-based fecal occult blood test (gFOBT) reveal the presence of blood in the stool. It is simple, cheap, and available in most hospitals. CT colonography is considered less invasive and offers rapid results, it has

similar sensitivity in detecting large polyps, but less sensitivity in detecting polyps <8 mm. There are other screening options which also helpful for CRC detection, such as fecal immunochemical test (FIT), stool DNA testing, methylated SEPT9, barium enema, and sigmoidoscopy.¹⁵

Fecal occult blood testing for the people of ages 60–69 years, followed by colonoscopy for those who test positive, Flexible sigmoidoscopy may also be used as the primary screening tool, with a similar reduction in colorectal cancer, specific mortality, and radiology based on Double-contrast barium enema and CT scan. Screening individuals for 25 years, commencing at the age of 50 to the age of 75 years, ought to decline the chance of developing or dying from colorectal cancer by around 10% to 75%, which depends on the screening tests being used and how frequently screening is done. Screening for colorectal cancer is non-compulsory. A potential recommendation will entail annual fecal occult blood tests and 65-cm flexible sigmoidoscopy every 3 to 5 years be done for men and women of average-risk who are between 50 and 75 years of age. Besides having annual fecal occult blood tests, individuals with first-degree relatives with colorectal cancer can be provided with barium enemas instead of sigmoidoscopies every 3 to 5 years.¹⁶

Several decades ago, the incidence of CRC was low, but in the current time, it has advanced to a prevalent cancer and accounts for an estimated 10% of cancer-associated mortality in western countries, and the screening rate is very low.¹⁷ Increasing the awareness of screening for CRC with sigmoidoscopy, colonoscopy, fecal occult, and blood test can help enhance early discovery and treatment of the lesion, which will decrease the mortality rate.¹⁸ The high mortality rates of colorectal cancer could be referred to as advanced-stage diagnosis because of the low level of awareness regarding its risk factors, symptoms, and screening.¹⁹

In this study, we aim to evaluate the level of awareness of CRC symptoms, risk factors, and the importance of screening in Shaqra, which is a small province that has a poor social awareness concerning colorectal cancer and other diseases due to poor education levels, especially among the older people.

METHODOLOGY:

Research Design

Since this research entailed the examination of the relationship between diseases, colorectal cancer, with some other defined variables among the population, Shaqra, at a point in time, then a cross-sectional study

was conducted.²⁰ The cross-sectional study was both descriptive and analytical as it involved assessing the awareness of colorectal cancer among the target population, as well as assessing the association between its knowledge and attitudes with the practices of the people of Shaqra. Further, the study conducted a random sample of the target populace. A random sample aimed at providing everyone within the target populace with an equal opportunity of participating in the research.²¹ The independent variable was the knowledge about colorectal cancer, while the dependent variable was the practice of the population towards it. Being a quantitative study, a 5-point Likert Scale (those who strongly agree, those who agree, those with no opinion, disagree, and those who strongly disagree) will be used to assess the people's knowledge about colorectal cancer. A similar study by Arafa, Farhat, & Rabah (2015), assessing people's knowledge and attitude toward prostate cancer, used a 3-point Likert Scale (agree, do not agree, and undetermined) in 14 questions. The questions assessed the knowledge and attitudes of participants towards the significance of diverse diagnostic and therapeutic techniques, cure rate, and the significance of early diagnosis and discovery of prostate cancer. Based on the success of that study, the current research will develop or model Arafa, Farhat, & Rabah's (2015), survey questions to assess the knowledge and attitude of CRC.

Participants, Sample Size, Selection

This research targeted people living in Shaqra who are over 18 years, to identify the general awareness. Specifically, those who are over 40 years based on the research Crosbie, Roche, Johnson, Pawlish, Paddock, & Stroup (2018).²³ According to the research, the rates of colorectal have been higher for those with ages that exceed 40 years as compared to those with lower years for the period between 1979 and 2014. Further, it is assumed that people above 40 years have lower education levels as compared to younger people. The sample size used depended on the supposition of the predominance of reduced knowledge, attitudes, and screening practices in Shaqra. Given that Shaqra has a population of about 43,300 people, according to a 2010 census, then using the 95% confidence interval and a degree of accuracy of 5%, and assuming a 50 percent assumption of knowledge, the sample size was taken to be 381 subjects, which was calculated using OpenEpi software version.²⁴ Since colorectal cancer is prevalent in both genders, the participants included both men and women that met the entry criteria. The population-based sample was selected from Shaqra streets, shopping malls, Administration of educations, and teachers in the school. Further,

participants were only recruited into the study after written informed consent was obtained from each one of them.

Statistical Analysis

Inferential and descriptive statistical methods were used to analyze the findings using the Statistical Package of the Social Sciences (SPSS) version 17. The null hypothesis, which is mentioned in the introduction section, was tested using the Pearson Chi-square analysis. Further, the level of significance was reported at 5 percent probability level. Each of the five points of the Likert Scale were to be assigned a point with the highest point given to “strongly agree.”

Results and Analysis

The sample was made up of 450 respondents from Shaqra province of Saudi Arabia. Out of the 450 respondents, 49.8% were female, while 50.2% were male. The respondents were fairly represented across all age groups, as shown in table 1. The largest age groups were 41-50 years accounting for 36%. Most of the participants had a high school diploma or a higher level. Those participants with a bachelor's degree accounted for the biggest proportion at 45.1%, followed closely by a high school diploma at 38.9%. A large proportion of the participants were married, accounting for 78.2%, while only 15.1% were not married.

Table 1: Demographic variables frequencies

Variable	Frequency
Age	
< 30	73(16.2)
31 - 40	104(23.1)
41 - 50	162(36.0)
51 - 60	54(12.0)
> 60	57(12.7)
Marital Status	
Single	68(15.1)
Married	352(78.2)
Gender	
Female	224(49.8)
Male	226(50.2)
Highest Education Level	
No qualification	6(1.3)
Below High School	33(7.3)
High School Diploma	175(38.9)
Bachelor's Degree	203(45.1)
Master's Degree	33(7.3)

Among all the 450 respondents, 16.4% were aware of the colorectal cancer screening, 56.9% were not aware, and 26.7% were not sure. When asked if they agree to the use of colonoscopy in the colorectal cancer screening, 34.9% were not sure, 4.9% said no, and 60.2% said yes, they would use. 66.9% of the respondents felt that colorectal cancer was preventable, 31.3% were not sure, and 1.8% felt was not.

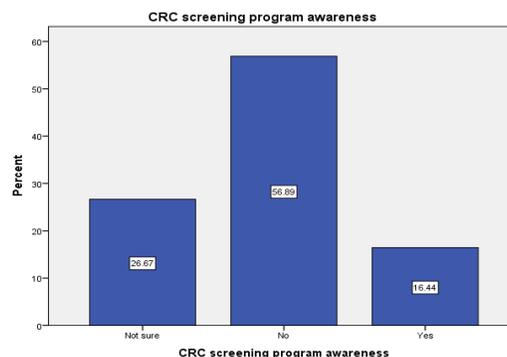


Figure 1: CRC screening awareness

When asked if the participant had a colorectal cancer family history, 82.9% said no, and 17.1% said yes. While the main modalities of screening were reported, the majority of the respondents (31.3%) reported colonoscopy as the modality used in screening. 36.9% reported that they did not know what modality was used.

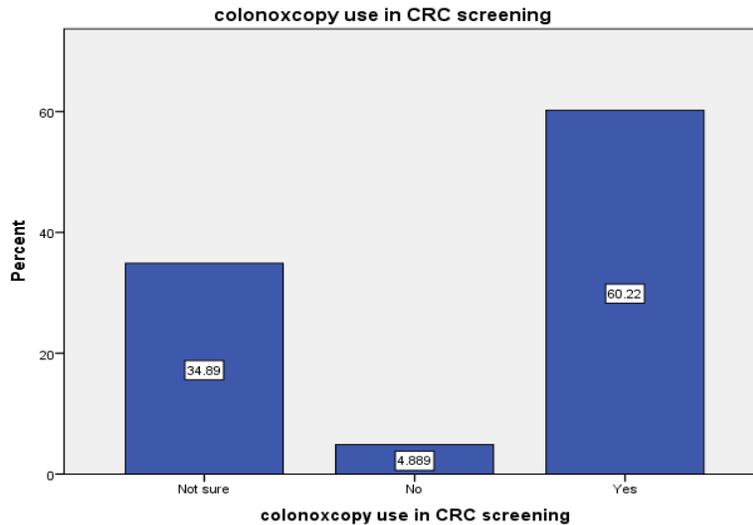


Figure 2: Colonoscopy use in CRC screening

92.2% of the respondents had not done screening before, while only 7.8% had done screening before. When asked why they had not done screening, 15.6% said they did not know it was free, 47.8% did not know it was important, 9.3% did not know the specific age for screening, and 8.7% did not know about its availability in Saudi Arabia.

Table 2: Sample characteristics

	Variable	Freq(%)
CRC screening	Not Sure	120(26.7)
	No	256(56.9)
	Yes	74(16.4)
colonoscopy use	Not Sure	157(34.9)
	No	22(4.9)
	Yes	271(60.2)
Screening Before	No	415(92.2)
	Yes	35(7.8)
CRC family history	No	373(82.9)
	Yes	77(17.1)
CRC preventable	Not Sure	141(31.3)
	No	8(1.3)
	Yes	301(66.9)

Age, marital status and gender had no significant association with CRC screening awareness ($p=0.131$, $p=0.232$ and $p=0.407$). However, education had a significant association in CRC screening awareness ($p=0.021$). The majority of the participants had a high school diploma (38.9%) or a bachelor's degree (45.1%).

Table 3: Association between CRC screening awareness and demographic variables

Variable	Freq. (%)	p-value
Age		
		0.131
< 30	73(16.2)	
31 - 40	104(23.1)	
41 - 50	162(36.0)	
51 - 60	54(12.0)	
> 60	57(12.7)	
Marital Status		
		0.232
Single	68(15.1)	
Married	352(78.2)	
Gender		
		0.407
Female	224(49.8)	
Male	226(50.2)	
Highest Education Level		
		0.021
No qualification	6(1.3)	
Below High School	33(7.3)	
High School Diploma	175(38.9)	
Bachelor's Degree	203(45.1)	
Master's Degree	33(7.3)	

The use of colonoscopy in screening had no association with the demographic variables, namely age, marital status, gender, and highest education level, as all the p-values were greater than 0.05.

Table 4: Association between colonoscopy use and demographic variables

Variable	Freq. (%)	p-value
Age		
		0.3
< 30	73(16.2)	
31 - 40	104(23.1)	
41 - 50	162(36.0)	
51 - 60	54(12.0)	
> 60	57(12.7)	
Marital Status		
		0.132
Single	68(15.1)	
Married	352(78.2)	
Gender		
		0.209
Female	224(49.8)	
Male	226(50.2)	
Highest Education Level		
		0.878
No qualification	6(1.3)	
Below High School	33(7.3)	
High School Diploma	175(38.9)	
Bachelor's Degree	203(45.1)	
Master's Degree	33(7.3)	

There was no association between Age and Gender, with CRC being preventable ($p = 0.464$, $p = 0.616$). However, the study established a significant association between CRC being preventable when compared to marital status and education level ($p = 0.021$, $p = 0.034$).

Table 5: Association between CRC being preventable and demographic variables

Variable	Freq. (%)	p-value
Age		
		0.464
< 30	73(16.2)	
31 - 40	104(23.1)	
41 - 50	162(36.0)	
51 - 60	54(12.0)	
> 60	57(12.7)	
Marital Status		
		0.021
Single	68(15.1)	
Married	352(78.2)	
Gender		
		0.616
Female	224(49.8)	
Male	226(50.2)	
Highest Education Level		
		0.034
No qualification	6(1.3)	
Below High School	33(7.3)	
High School Diploma	175(38.9)	
Bachelor's Degree	203(45.1)	
Master's Degree	33(7.3)	

There was no significant association between colorectal cancer screening awareness and patient relation, as well as CRC family history ($p = 0.976$, $p = 0.315$). However, the study established a significant association between colorectal cancer screening and the use of colonoscopy, screening before as well as colorectal cancer being preventable ($p = 0.024$, $p = 0.01$ and $p = 0.041$).

Table 6: Association between CRC awareness and sample characteristics

Variable	Freq. (%)	p-value
Patient Relation		
		0.976
Ist degree relative	37(57.8)	
3rd degree relative	27(42.2)	
colonoscopy use		
		0.024
Not Sure	157(34.9)	
No	22(4.9)	
Yes	271(60.2)	
Screening Before		
		0.01
No	415(92.2)	
Yes	35(7.8)	
CRC family history		
		0.315
No	373(82.9)	
Yes	77(17.1)	
CRC preventable		
		0.041
Not Sure	141(31.3)	
No	8(1.3)	
Yes	301(66.9)	

DISCUSSION:

A cross-sectional descriptive and quantitative design were used in this study to evaluate the link between knowledge about colorectal cancer and how this affects the practice within the Shaqra province. Screening awareness was used as the variable representing knowledge regarding colorectal cancer. All the other variables, including the demographics, were modeled on this basis. The study also checked the association of variables such as colorectal cancer being preventable and the agreeableness on the use of colonoscopy in colorectal cancer screening. The main objective was to assess how knowledge about colorectal cancer and screening and how it affects the population.

Respect to demographics, the study established that many of the demographic variables are not significantly associated with screening awareness apart from education. Interestingly, this echoes the findings by Khayat & Ibrahim (2014).¹³ Where education was seen to play a significant role towards CRC screening awareness. In addition, this study did not find a significant association between Age and Gender. There was no significant association between demographics variables and the use of colonoscopy in colorectal cancer screening.

With 66.9% of the participants reporting that colorectal cancer was preventable, there was a general feeling that with available information, people would easily avoid colorectal cancer. The study established that most of the participants were not aware of free screening or did not feel that it was important. There was a general feeling that although colorectal cancer was preventable, screening information for early detection was not available to the participants. These findings agree with Gede & Kiss's (2018) findings on colorectal cancer and screening awareness, where they found out that the popular number of the respondents did not have adequate information concerning colorectal cancer and screening. The study found a substantial correlation between marital status and colorectal cancer being preventable. In addition, there was a substantial link between education level and colorectal cancer being preventable.

There was a significant association between CRC screening awareness and the use of colonoscopy during screening ($p < 0.05$). 60.2% agreed to the use of colonoscopy during screening. 11.5% of those who were aware of screening were also aware of the use of colonoscopy screening. The study also established a significant association between CRC screening

awareness and colorectal rectal cancer being preventable ($p < 0.05$). 23.3% of the participants who were aware of the screening process also felt that colorectal cancer was also preventable. This agrees with many studies where awareness of the target population about colorectal screening was found to be crucial in increasing screening participation.¹⁵

With 40% of the participants responding that they did not know the symptoms of colorectal cancer, there is still a general feeling that most people in Shaqra province do not really know what the symptoms of colorectal cancer are. The same sentiment was also reflected in risk factors where the majority (32.4%) did not know the risk factors for colorectal cancer.

Broader population. Seeing mixed results from the sample, such as inconsistencies in the length of use of the medication and the differences in nationalities, ought to be further investigated in future studies.

Although this study was statistically sound, it does not fail to have a share of limitations. First, it was challenging to have a consensus on risk factors as well as the symptoms, and the study ended up having a long list of the same, which were quite difficult to tabulate and conduct inferential statistics due to the diverse number of responses. The second limitation entailed the use of medical terms, which were quite intimidating and may have contributed to the polarized responses, where most people were generally not aware of what colorectal cancer was. This study would recommend assisted research where the researcher would be able to explain the medical terms to the respondents.

In conclusion, the results show that there was generally less awareness among the Shaqra population on matters of colorectal screening awareness. This can be attributed to a general lack of information by the relevant institutions, as the study did not find any association of awareness to demographic variables.

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