



KNOWLEDGE, ATTITUDE TOWARD COLORECTAL CANCER AND ITS SCREENING METHODS IN AL HASA DISTRICT OF SAUDI ARABIA

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ABSTRACT

Introduction: Colorectal cancer is one of the major public health problem throughout the world. However it is a preventable condition and mortality caused by this condition can be prevented by early diagnosis and prompt treatment. A good awareness, knowledge and attitude of the general population towards the colorectal carcinoma play a crucial role in controlling its prevalence. This was a descriptive cross-sectional study to assess the knowledge, attitude toward colorectal cancer and its screening methods in Al Hasa.

Material and methods: The sample size was 450. Every third patient attending the primary health care center was selected for the study, Data were collected by Self-administered questionnaire. All the data were entered to excel sheet and analyzed using SPSS v. 20. The mean was used to estimate the continuous data. In addition, chi-square test was used to assess the associations between categorical outcomes and the variables, and t-test for continuous variables. The statistical significance level was maintained as P less than 0.05 during the entire analysis.

Results: Out of the four hundred and fifty participants, four hundred and three (403) participants completely answered the questionnaires and returned them back. The mean age was 35.50 years \pm 12.5 SD. Majority were married (66.7%). Men outnumbered the women (53.8% vs. 46.2%). The subjects were mostly from university level (56.1%), followed by secondary school level (22.6%). The mean knowledge score was 13.81 \pm 4.93. Slightly more than half (51.7%) had low knowledge level. The mean knowledge score was significant about educational level in favor of the University level (P-value = 0.0001). Females had better knowledge than the males (p value 0.03). Marital status had no influence on the knowledge regarding CRC. The mean attitude score was 13.9057 \pm 3.12. The attitude was significant about educational level in favor of the University level (P-value = 0.001). Furthermore, attitude was significant among marital status groups in favor of married (P-value = 0.002). There was a significant positive relationship between knowledge and attitude ($r = 0.116$, $P = 0.019$)

Conclusion: This study has provided a crucial information on the knowledge and attitude of al hasa population of colorectal carcinoma which will help the ministry of health to formulate effective public awareness programme towards colorectal carcinoma.

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INTRODUCTION

Colorectal cancer (CRC), known as bowel cancer and colon Cancer, is the development of malignancy from the colon or rectum. Colorectal cancer is the third most common cancer worldwide, with nearly 1.4 million new cases diagnosed in 2012^[1]. It represents the second cause of cancer-related death in the United States and most of the western countries^[2]. According to WHO (2012), the prevalence of colorectal cancer in the Arabian Gulf countries ranged between 18.8-46^[3]. In Saudi Arabia Colorectal cancer ranked second among the cancers recorded in Saudi national cancer

registry in 2013. The number of registered cases of colorectal cancer was 1387 with prevalence of 11.9%. The number of cases has increased from 647 in 2004 to 907 in 2007 and 1387 cases in 2013^[4]. Hence the importance of colorectal cancer awareness and screening is proving to be vital in controlling its prevalence. The population with high risk factors are more likely to get the disease, The high risk factors for this condition are increased age, consuming high fat and meat diets with low fibers, obesity, physical inactivity, smoking and family history of colorectal cancer^[5]. The symptoms of (CRC) may come as a changes in bowel habits, alternating diarrhea

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and constipation, rectal bleeding or blood in the stool, abdominal bloating, cramps or discomfort and feeling that the bowel doesn't empty completely. In addition, there may be unexplained weight loss, unexplained loss of appetite, nausea or vomiting, anemia and fatigue. As the symptoms of (CRC) may be minimal or non-existent during the early stages of the disease, screening of asymptomatic individual for colorectal cancer either by colonoscopy or fecal occult blood is advocated by major societies and preventive care organizations under the guidance of American Cancer Society for Colorectal Cancer Screening. Screening has been shown to detect asymptomatic early-stage. Hence the importance of community awareness about recognizing early CRC symptoms and screening modalities will have positive effects not only on the health of the individuals but also on society in general.

Various studies have been done in various parts of the world to assess the knowledge and attitude of the general population. In one study in Europe the researchers have found a low level of awareness in the study population regarding the colorectal cancer [5]. A similar study in Jamaica (2017) had found that 14% of the study population never heard of CRC screening, 31.8% did not know about any tests used for CRC screening and 28.4% did not know about the risk factors of CRC [6]. However a Malaysians study (2015) has shown that less than 70% of the respondents acknowledged common risk factors such as positive family history, obesity and old age [7]. Similarly the Lebanon study has shown alack of knowledge toward CRC [8]. Another study conducted in United Arab Emirates (2013) showed that 64% of participants were thinking that CRC is not common, and did not hear of the screening test for CRC (67%) [9]. In addition, study conducted in the Kingdom of Bahrain (2018) has found a poor knowledge among people living in Bahrain regarding CRC symptoms and risk factors [10]. In Saudi study conducted in the city of Riyadh (2015) has shown that 42.9% of respondents believed that screening for colon cancer should begin at symptom onset [11]. A cross-sectional study conducted in Asir region (2018) has found that only 22.1% of the respondents knew the correct time of screening for CRC. Very few respondents knew the symptoms, risks, and screening modalities of CRC [12]. The present study aimed to examine the knowledge and awareness of the population about colorectal cancer and its screening in Al Hasa district of Saudi Arabia. To our best of knowledge, no such type of study has been done in past in this region of Saudi Arabia.

MATERIALS AND METHODS

This was a descriptive cross-sectional study to assess the knowledge, attitude toward colorectal cancer and its screening methods in Al Hasa. All the Patients from 18 to 80 years of age, attending the different primary health care centers of AlHasaregion were the study population. The study included all the primary health care centers belonging to Ministry of health situated in Al Hasa region. These Centers distributed on three public health sectors: Alomran, Alhofuf and Almubaraz. The total number of eligible patients was 200000. The sample size was calculated using the Epi info with 5% margin of error and 95% confidence level and (50%) response distribution. The sample size was found to be 450. Every third patient attending the clinic was selected for the study; Data were collected by Self-administered questionnaire. It was distributed to all participate who meet inclusion criteria. The questionnaires consisted of three pages, the first page

contained a short paragraph about the aim and objective of the study and how they had to fill the questionnaire with consent statement to participate voluntary in the research. The second page consisted of demographic information about the participants while the third page consisted of the questions about knowledge of the colorectal cancer screening modalities which included the knowledge about the prevalence of colorectal cancer in Saudi Arabia, knowledge about the MOH screening recommendations, questions about colon cancer symptoms, risk factors and screening modalities. In addition, there were questions about relation of irritable bowel syndrome and colon cancer and prognosis of disease. There were eight questions in the knowledge section. Finally, there was a question about attitude of patient to do different screening modalities. Four items were included in the questionnaire to assess the attitude towards CRC. Five options were provided for each question, the correct answer was given one mark and incorrect zero. The questionnaire took around 15 minutes to complete.

The investigators went to random primary health care center in different sector in AlHasa and met the patient at nurse station during working hours .investigators explained the aim and objective of studies and took consent from patient to participate in this study. After that, they collected the questionnaire from them after completion. All the data were entered to excel sheet and analyzed using SPSS v. 20. The prevalence and other descriptive analysis for outcome variables were calculated with 95% confidence interval. The mean was used to estimate the continuous data. In addition, chi-square test was used to assess the associations between categorical outcomes and the variables, and t-test for continuous variables. The statistical significance level was maintained as P less than 0.05 during the entire analysis.

A pilot study was conducted on a sample of 46 volunteers from clinics in Al Hasa by non-random convenient sampling methods and the questionnaire was tested on the field to find if there are any difficulties to fill the questionnaire and questions were modified accordingly for comprehension and clarity. Ethical approval by Institutional board review (IRB) in AlHasa health MOH and program director of family medicine in PCFCM was taken before proceeding this study.

RESULT

Out of the four hundred and fifty participants four hundred and three (403) participants completely answered the questionnaires and returned them back. The mean age was 35.50 years \pm 12.5 SD. The subjects comprised participants with varied backgrounds. Majority were married (66.7%). Men outnumbered the women (53.8% vs. 46.2%). The subjects were mostly from university level (56.1%), followed by secondary school level (22.6%). The rest were illiterate, primary school, intermediate, and post-graduate. Sociodemographic variables of the study sample are shown in Table 1.

Table 1 sociodemographic variables frequencies and percentages

		Frequency	Percent
Gender	male	217	53.8
	female	186	46.2
	Total	403	100.0
Marital Status	married	269	66.7
	single	115	28.5
	divorced	14	3.5

	widow	5	1.2
	Total	403	100.0
	illiterate	6	1.5
Educational Level	primary	27	6.7
	intermediate	32	7.9
	secondary	91	22.6
	university	226	56.1
	post graduate	21	5.2
	Total	403	100.0
Age	Mean		35.50
	Std. Deviation		12.500

Knowledge about CRC

Assessment of the knowledge regarding CRC was done through 8 questions, each having at least three options. A predominant number (70.2%) knew that it is possible to protect against CRC. However, merely more than one-third of the participant (37.7%) knew what is the incidence of CRC in kingdom of Saudi Arabia. the possibility to be cured from colorectal cancer known by slightly two-thirds (63.8%) of the participants. One-half (52.1%) also knew what the screening modality for colon cancer is. More than half of the participants (59.83%) were also aware about the symptoms of CRC. In addition, (56.3%) of participants knew the risk factors of CRC (Inflammatory bowel disease was the most common syndrome; 70.5%). Less than one –half (47.9%) of the participants knew that the screen for colorectal cancer according to Saudi ministry of health guideline is at age 45. The details on the response of the knowledge questions is shown in table 2.

Table 2 Knowledge items responses regarding CRC

		Frequency	Percent	correct answers
What is the incidence of colon cancer in kingdom of Saudi Arabia?	widespread	98	24.3	152(37.7%)
	Average spread	152	37.7	
	rare	55	13.6	
	I don't know	98	24.3	
When do you screen for colorectal cancer according to Saudi ministry of health guideline?	When symptoms appear	76	18.9	193(47.9%)
	at age 20	21	5.2	
	at age 45	193	47.9	
	at age 65	37	9.2	
	I don't know	76	18.9	
Symptoms				
What are the symptoms of colon cancer?(Nausea and vomiting)	true	175	43.4	175(43.4%)
	False	92	22.8	
	I don't know	136	33.7	
Yellow discoloration of the eyes and skin	True	108	26.8	108(26.8%)
	False	119	29.5	
	I don't know	176	43.7	
abdominal pain and discomfort for long time	True	306	75.9	306(75.9%)
	False	32	7.9	
	I don't know	65	16.1	
Presence of blood in stool	True	301	74.7	301(74.7%)
	False	30	7.4	
	I don't know	72	17.9	
Change in the bowel habits	True	284	70.5	284(70.5%)
	False	36	8.9	
	I don't know	83	20.6	
unintentional Weight loss	True	260	64.5	260(64.5%)
	False	50	12.4	
	I don't know	93	23.1	
there is no symptoms	True	44	10.9	254(63%)
	False	254	63.0	
	I don't know	105	26.1	
Risk Factors				
What are the risk factors for colon cancer?(Smoking)	risk factor	257	63.8	257(63.8%)
	not risk factor	64	15.9	
	I don't know	82	20.3	
Inflammatory bowel disease	risk factor	284	70.5	284(70.5%)
	not risk factor	41	10.2	

Lack of exercise	I don't know	78	19.4	187(46.4%)
	risk factor	187	46.4	
	not risk factor	137	34.0	
Family history of colon cancer	I don't know	79	19.6	248(61.5%)
	risk factor	248	61.5	
	not risk factor	86	21.3	
Fatty food	I don't know	69	17.1	237(58.8%)
	risk factor	237	58.8	
	not risk factor	82	20.3	
Colon polyps	I don't know	84	20.8	220(54.6%)
	risk factor	220	54.6	
	not risk factor	70	17.4	
Irritable bowel syndrome	I don't know	113	28.0	155(38.5%)
	risk factor	147	36.5	
	not risk factor	155	38.5	
	I don't know	101	25.1	

Screening Modalities

What is the screening modality for colon cancer?(fecal occult blood test)	yes	285	70.7	285(70.7%)
	no	36	8.9	
Colonoscopy	I don't know	82	20.3	355(88.1%)
	yes	355	88.1	
	no	20	5.0	
X-ray	I don't know	28	6.9	129(32%)
	yes	175	43.4	
	no	129	32.0	
Ultrasound	I don't know	99	24.6	129(32%)
	yes	165	40.9	
	no	129	32.0	
CT scan	I don't know	109	27.0	102(25.3%)
	yes	195	48.4	
	no	102	25.3	
there is no screening modality	I don't know	106	26.3	259(64.3%)
	yes	35	8.7	
	no	259	64.3	
	I don't know	109	27.0	

Other Knowledge Questions On CRC

Is it possible to protect against colorectal cancer?	yes	283	70.2	283(70.2%)
	no	57	14.1	
Is it possible to be cured from colorectal cancer?	I don't know	63	15.6	257(63.8%)
	yes	257	63.8	
	no	72	17.9	
Is there a relationship between colorectal cancer and irritable bowel syndrome?	I don't know	74	18.4	146(36.2%)
	yes	116	28.8	
	no	146	36.2	
	I don't know	141	35.0	

The mean knowledge score was 13.81±4.93. Slightly more than half (51.7%) had low knowledge level. The remaining knew well about the different aspects of CRC.

Attitude towards CRC

Four items were included in the questionnaire to assess the attitude towards CRC. Five options were provided. Nearly half of the respondents (40%) perceive rare risk of contracting CRC. A further 82.4% rated the utility of screening tests for colorectal cancer as useful. A considerable number either agreed (79.8%) that to do fecal occult blood test for CRC. Similarly, a large number of participants (76%) were also confident to do colonoscopy for CRC screening. The details of the attitude result are shown in table 3.

Table 3 means and standard deviations of the attitudes toward CRC.

Attitudes items	mean	SD	rank	degree
How do you perceive your risk of contracting colorectal cancer on a 1 to 5 (scale with 1 meaning no risk and 5 high risk?)	2.00	1.13	4	Rare risk
How would you rate the utility of screening tests for colorectal cancer (prevention on a 1 to 5 scale with 1 meaning useless and 5 very useful?)	4.12	1.21	1	Useful
How do you perceive to do fecal occult blood test for colorectal cancer (screening on a 1 to 5 scale with 1 meaning no risk and 5 high risk?)	3.99	1.18	2	Agree

5 scale with 1 meaning disagree and 5 strongly agree?)
 How do you perceive to do colonoscopy for colorectal cancer screening on (a 1 to 5 scale with 1 meaning disagree and 5 strongly agree?) 3.80 1.29 3 Agree

To compare the mean knowledge score of more than two independent variables, ANOVA test was used. The mean knowledge score was significant about educational level in favor of the University level (P-value = 0.0001). Females had better knowledge than the males (p value 0.03). Marital status had no influence on the knowledge regarding CRC. However, the married subjects were expected to have a better idea about management of CRC.

Table 4 independent-samples T test results for gender educational level and marital status comparison for knowledge about CRC

		N	Mean	Std. Deviation	P value
Gender	Male	217	13.33	5.371	.035
	Female	186	14.37	4.297	
Education	illiterate	6	7.33	2.58	0.000
	primary	27	12.33	4.74	
	Secondary	123	14.75	3.38	
	Graduate	226	16.62	4.52	
	Post graduate	21	13.19	5.05	
Marital Status	Single	115	13.38	3.11	0.232
	Married	269	14.23	3.04	
	Divorced	14	13.28	2.86	
	Widow	5	13.00	3.93	

The mean attitude score was 13.9057 ± 3.12 standard deviation. The attitude was significant about educational level in favor of the University level (P-value = 0.001). Furthermore, attitude was significant among marital status groups in favor of married (P-value = 0.002) Table 5.

Table 5 independent-samples T test results for gender educational level and marital status comparison for attitude towards CRC

		N	Mean	Std. Deviation	P value
Gender	Male	217	14.1290	3.116	0.120
	Female	186	13.6452	3.104	
Education	illiterate	6	10.16	3.18	0.001
	primary	27	12.51	3.94	
	Secondary	124	13.18	2.83	
	Graduate	226	14.85	2.28	
	Post graduate	21	14.19	3.23	
Marital Status	Married	269	14.23	3.04	0.002
	single	115	13.38	3.11	
	Divorced	14	13.28	2.86	
	Widow	5	13.0	3.93	

Knowledge and attitude

There was a significant positive relationship between knowledge and attitude (r = 0.116, P = 0.019) as shown in table 6.

Table 6 Pearson Correlation Coefficient between knowledge and attitude

	Attitude	
Knowledge	Pearson Correlation	0.116
	P value	0.019
	N	403

DISCUSSION

Colorectal cancer is one of the major public health problems. However it is a preventable condition and mortality caused by this condition can be prevented by early diagnosis and prompt treatment. A good awareness, knowledge and attitude of the general population towards the colorectal carcinoma play a crucial role in controlling its prevalence. This study has shown a poor awareness about the colorectal carcinoma among the population of Al Hasa region. This result is similar to another study done in EAU (2013), which indicated that almost 63% of the population didn't know that the CRC is a common problem. The Lebanese study (2015) has also shown a low knowledge of the CRC in general population. In another study done in KSA (2018) also showed that Very few respondents knew the symptoms, risks, and screening modalities of CRC. This study results showed that the problem with low knowledge of the CRC is still a problem in the Arabic world. However the Jamaican, Malaysian and European study have shown a better awareness among the general population for colorectal cancer.

One-half (52.1%) of the participants in our study knew about the screening modality for colon cancer, which is higher than other study done in Jamaica (2017), which showed that 14% of the respondents had never heard of CRC screening. The symptoms of the CRC were well known among only 59.8% of the participants in this study, and (56.3%) of participants knew the risk factors of CRC (Inflammatory bowel disease was the most common syndrome; 70.5%). This is similar to another study done in Bahrain which showed low knowledge of the CRC symptoms in general. The same goes for another study in Saudi Arabia (2018), which showed that, very few respondents knew the symptoms, risks, and screening modalities of CRC. The results showed low knowledge of CRC among general population in the kingdom as well as for other Arabic countries.

With high level of prevalence of CRC in Saudi Arabia, yet half almost half of the participants perceive rare risk of contracting CRC. A considerable number of the participants agreed (79.8%) that to do fecal occult blood test is important method of detecting CRC. Similarly, a large number of participants (76%) were also confident in their knowledge that colonoscopy is necessary for CRC screening. Though the participants in our study had the low knowledge of the CRC, yet they were ready to do the needed tests for the CRC, even with low knowledge of the tests. Regarding the attitude among the participants, results showed that the attitude was significant among two groups, married participants and university students or graduates. This is due to the education factor, as with more exposure of knowledge and education, people tend to understand medical and scientific procedures better than others. Married participants tend to be more mature than unmarried persons, thus show better attitude towards medical measurements. Regarding the knowledge factor in this test, the results show significance among two (university students and graduates, and women) groups on other groups. The results can due to the education factor which provide general knowledge to the students, and push them to acquire knowledge in different subjects in their lives. The same results have been found in Bahrain, Jamaican, European and another Saudi study.

With these results, it is better to understand the relation if any between knowledge and attitude. The results of Pearson

Correlation Coefficient, between knowledge of the participants, and the attitude towards CRC show real significance between the two variables, which could be logical, as significant knowledge of the problem of the CRC, will affect the attitude toward it.

As the CRC is a problem affect the health and lives of many in KSA, the knowledge of this problem will make people take action toward their health. So the correlation between the two (knowledge and attitude) is quite understandable.

As this study results are similar to previous studies done in KSA and other gulf and Arabic countries, this suggest the need for more awareness programs for the problem among people. The results of this study are of one area of the kingdom, and it might vary in other rural areas, and this will need more studies to cover other areas.

As CRC is prevalence in KSA, further research needed to understand the knowledge of the problems among people in different areas to understand the whole image of the problem in the kingdom.

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