MEDICAL SCIENCE

Knowledge, attitude, and practice about Colorectal Carcinoma among the general population in Bisha City, Saudi Arabia

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To Cite:
Alhalafi AF, Alkhathami A, Al-Ameer AY, Algamdi MA, Alsulami WJ, Alghamdi MA, Almalhan LA, Senbel AM. Knowledge, attitude, and practice about Colorectal Carcinoma among the general population in Bisha City, Saudi Arabia. *Medical Science* 2023; 27: e336ms3193
doi: https://doi.org/10.54905/disssi/v27i138/e336ms3193

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Peer-Review History
Received: 08 July 2023
Reviewed & Revised: 12/July/2023 to 10/August/2023
Accepted: 14 August 2023
Published: 21 August 2023

Peer-review Method
External peer-review was done through double-blind method.

Medical Science
pISSN 2321–7359; eISSN 2321–7367

ABSTRACT

Background: Colorectal Carcinoma is a cancer of the colon or rectum that is a growth of cells in the lower end of the digestive tract. Healthcare professionals advise screening for high-risk persons or over the age of 45 since removing polyps prevents cancer. The aim is to assess the knowledge, attitude, and practice of colorectal carcinoma among the population in Bisha City. *Methods:* This was a cross-sectional study involving data collection using self-administered online questionnaires on a sample of 909 individuals aged 18 years and above from a population of 414,127 living in Bisha City. *Results:* The survey found that while a sizable portion of participants were aware of colorectal cancer, the majority of them were unaware of the condition. The population had little knowledge about the risk factors, symptoms, cancer screening, and diagnosis. The majority of people were aware of risk factors like smoking, being overweight, and family history, but they were unaware of others, like eating red meat and hemorrhoids. People would only seek medical attention if they experienced cancer-related symptoms. Our study established a statistically significant association between the participant's age, education level, knowledge, practice, and attitude about colorectal cancer. *Conclusion:* The general knowledge of colorectal cancer among the population of Bisha City was low. Finding established that people would only seek medical attention if they experienced cancer-related symptoms. Our study points toward an increased need for spreading public awareness regarding the dangers of colorectal cancers, the importance of regular physical examination and screening, and medical interventions.

Keywords: Colorectal Cancer, knowledge, cross-sectional, Bisha, Saudi Arabia.

1. INTRODUCTION

Adenocarcinoma, a malignant tumor that arises from glandular epithelial cells of the colon and rectum, accounts for the majority (>90%) of colorectal malignancies; other uncommon kinds include squamous cell carcinoma, adenosquamous carcinoma, spindle cell carcinoma, and undifferentiated carcinoma (Keum and Giovannucci, 2019). The third most frequent cancer in the world is colorectal cancer. Numerous studies also show that colon cancer in young people is linked to a more severe illness and a greater fatality rate. Precancerous polyps and early-stage colorectal cancer are becoming more common. The relevance of preventative screening in the Kingdom of Saudi Arabia is highlighted because they are frequently present without symptoms (Zubaidi et al., 2015).

Colorectal cancer is more prevalent in wealthy nations, and as underdeveloped nations become more Westernized, so does its incidence. The increase in colorectal cancer cases among those under 50 is another new trend. Colorectal cancer incidence and death are highly influenced by genetic risk factors, low physical activity, overweight and obesity, poor diet, excessive alcohol consumption, smoking, chronic inflammatory bowel disease, and the gut microbiome. Colorectal cancer is typically asymptomatic. Since colorectal cancer is aggressive, malignant, and metastatic, most individuals are already in the advanced stage when symptoms such as rectal bleeding, anemia, or stomach pain appear (Xi and Xu, 2021). 1659 cases of colorectal cancer were reported by Saudi Cancer Registry in 2016, making up 12.6% of all newly diagnosed cases among Saudi nationals.

The median age at diagnosis was 59 years for men and 57 years for women (National Health Information Center, 2019). With early identification, fewer intrusive treatment options are available for colorectal cancer, reducing morbidity, mortality, and treatment costs. Strategic choices are required for the implementation of a program for colorectal cancer screening. Selecting a screening method, which can be either invasive or non-invasive, is the first step (Schreuders et al., 2015). Fecal occult blood testing is a common non-invasive test for colorectal cancer screening, while sigmoidoscopy and colonoscopy are invasive tests. The accuracy of colorectal cancer screening can be improved by using stool DNA and colonoscopy (Williams et al., 2018).

Globally, the incidence of colorectal cancer has sharply increased in recent years. Estimates predict that in 2020, 1.93 million new cases of colorectal cancer will be diagnosed, and 0.94 million people will pass away from the condition (Xi and Xu, 2021). The second most common cancer among Saudis of all ages was colorectal cancer (10.3%), the most common disease among men (11.8%). In Saudi Arabia, the mortality rate from cancer has also climbed during the past ten years (Imran et al., 2016). Obesity and physical inactivity, which likely account for the bulk of individual differences, are the most significant behavioral factors that affect the development of colorectal cancer. Additionally, people who are the most passive are up to 50% more likely to develop colorectal cancer (Rawla et al., 2019).

The CDC estimates that the overall yearly medical expense of treating colorectal cancer will be $14.1 billion (CDC, 2022). El-Gamal et al., (2020) discovered that there was little general knowledge of colorectal cancer and its screening in Jeddah, Saudi Arabia. However, the majority of respondents had a favorable attitude toward colorectal cancer and believed that routine physical examinations might detect the disease in its earliest stages (53%) (El-Gamal et al., 2020). Another study carried out in Qatar by Al-Dahshan et al., (2020) revealed that the public, particularly those between the ages of 54 and 70, has little awareness of colorectal cancer symptoms and risk factors.

According to Christou and Thompson (2012), there is a knowledge gap among Australian citizens regarding colorectal cancer. The authors Tfaily et al., (2019) study the majority of people are willing to undergo a colonoscopy or fecal occult blood test for colorectal cancer screening if they have risk factors or are over 50. This study aims to assess the knowledge, attitude, and practice of colorectal cancer among the population in Bisha City, Saudi Arabia.

2. METHODS

We adopted a cross-sectional descriptive study to assess the Knowledge, Attitudes, and Practice About Colorectal Carcinoma in Bisha City, Saudi Arabia population. The questionnaire was distributed via social media between June 2023 and July 2023. The study was carried out in Bisha City in the Asir region in southern Saudi Arabia. The population in this area was about 414,127, according to the General Saudi Authority for Statistics in 2020. The study population was adult people residing in Bisha City. All the Bisha residents of all sexes and any nationality who were above 18 years old consented to participate in our study. People who were minors (under the age of 18), lived outside of Bisha City, or refused to provide their agreement to participate in the study were omitted.

Sampling Technique

The convenience sampling approach was used. The target population was allowed to participate in the study, and the questionnaire was disseminated via social media. A sufficiently large sample size of 909 was adopted according to the Cochrane sample size formula. A confidence interval of 95% and a margin of error of 3.25% were used to determine this sample size.

Data Collection

The tool used for data collection is a self-administered Online questionnaire valid and obtained from a previous study (El-Gamal et al., 2020). The questionnaire was designed using Google form to get participants' responses during the data collection study period, which is one month starting on the 1st of June 2023. The data obtained included socio-demographic characteristics (age, gender, marital status, educational level, and occupational status), expertise, mentality, and practice questionnaire toward colorectal cancer contained three sections of 20 closed-ended questions on knowledge, seven on attitude, and seven on practice. The questions on the knowledge about colorectal cancer were responses of yes, no, and do not know. Were respondents

Data Analysis Plan

Data entry and statistical analyses were performed using SPSS (statistical package of social sciences) version 26 (SPSS Inc., Chicago, IL, USA). The appropriate statistical tests will be used. Both descriptive statistics and inferential statistics were conducted. We used the chi-square test according to our data. P value < 0.05 will be considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the ethical committee of the University of Bisha College of Medicine Ref No.: UB-RELOC H-06-BH-087/ (0503.23). Electronic informed consent was obtained from each participant before starting the investigation. The identities of the participants were not gathered to safeguard their anonymity. They were told that they could withdraw from the survey at any moment without providing any justification.

3. RESULTS

Socio-demographic Information of the Participants

The total number of participants in the online survey was 909. According to the findings, most participants were males, 519 (57.1%), while females were 390 (42.9%). Most of the participants (64.2%) were over 50 years with most of them (79.9%) married, while (20.2%) were single. Most participants (54.7%) had an Academic level of education and worked in the private sector (39.6%). The majority of the participants (56.6%) were Non-smokers, (22.5%) were EX-smokers while (20.9%) were smokers, as shown in (Table 1).

Table 1 Demographic characteristics of the participants

Variable	Category	N (%)
Sex	Male	519 (57.1)
	Female	390 (42.9)
Age	18-24	11 (1.2)
	25-39	93 (10.2)
	40-50	222 (24.4)
	Above 50	583 (64.2)
Marital Status	Single	183 (20.2)
	Married	726 (79.9)
Educational level	Elementary School	58 (6.4)
	Secondary School	75 (8.3)
	Post-Secondary	207 (22.8)
	Academic	497 (54.7)
	Postgraduate	72 (7.8)

The results indicate that most participants were males, representing 57.1% of the patients, while 42.9% were females. Age distribution of the participants. It shows that the majority (64.2%) of the participants were above 50 years of age, followed by 24.4% of the participants being between the ages of 40-50 years, 10.2% were between 25-39 years, and only 1.2% of them were between 18-24 years of age. The findings show an increasing interest in knowledge and awareness of Colorectal Carcinoma with the increase in the age of the people among the population of Bisha City. The results indicate that most participants (79.9%) were married, while, (20.2%) were single. This implies that the study was not biased regarding participants' marital status.

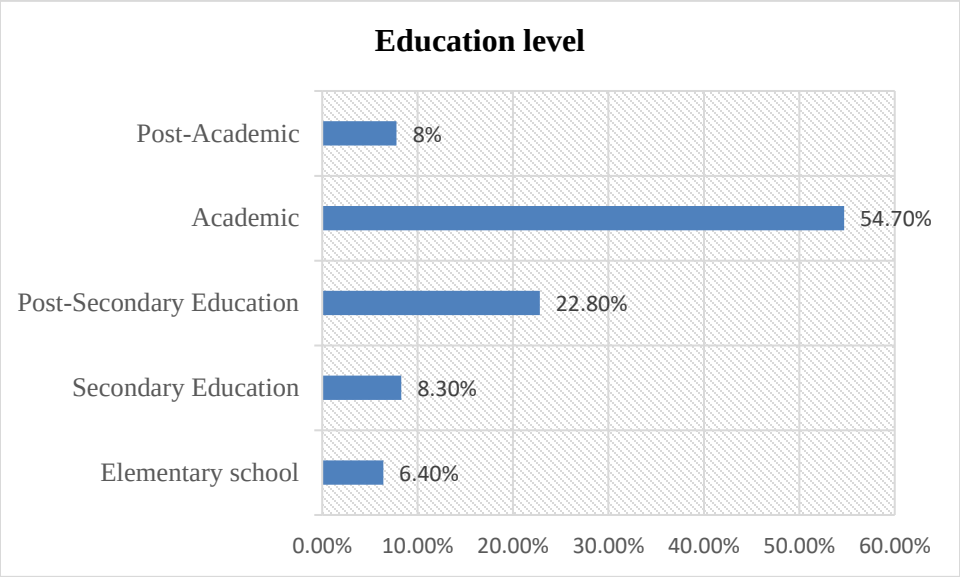

Figure 1 Education Level of Participants

Figure 1; illustrates that a large majority of the participants' population (54.7%) had attained an academic level of education, suggesting that academics are the most popular level among the participants. In addition, 8.3% of individuals had completed their secondary education, 22.8% had completed their post-secondary education, and 8.0% had completed their post-academic education. In comparison, only 6.4% of people had completed elementary school.

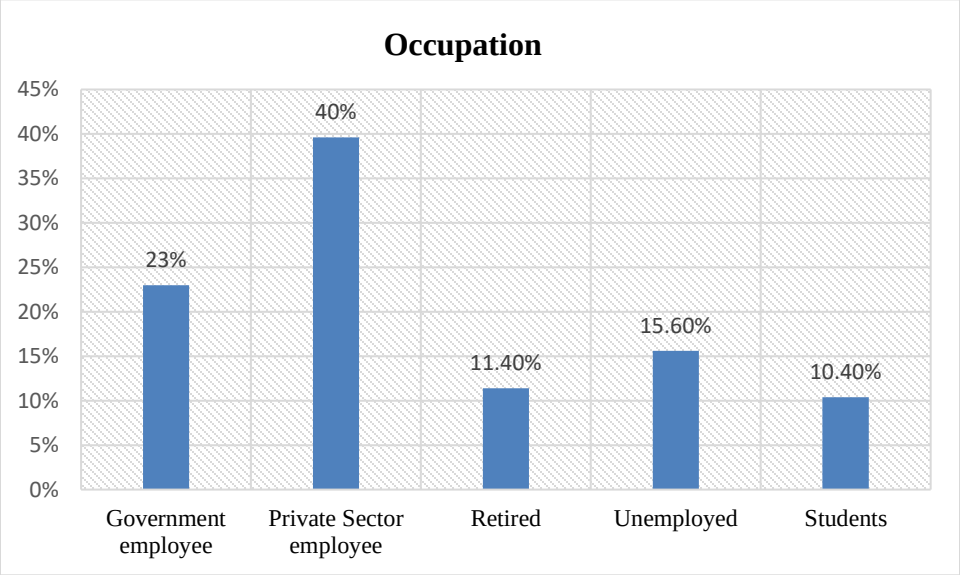

Figure 2 illustrates the different occupational statuses among the participants.

According to Figure 2, the highest percentage of respondents (40.0%) were private sector employees, (23.0%) of the participants were government employees, (15.6%) were unemployed (11.4%) of respondents had retired while (10.4%) were students. It also implies that most respondents worked in the public and private sectors.

Descriptive Statistics of the Study Variables

Table 2 shows; that a substantial number of participants, more than half, had no information about the risk factors associated with Colorectal Carcinoma. Most individuals had little to no understanding of the risk factors for the condition. When the issue of whether a person's actions or way of life contributed to their illness was raised, (44.4%) demonstrated that they knew the cause of the disease, with the rest unaware. Risk factors and diet, such as eating a low-fat and high-fiber diet, were known by (37.1%) of the participants; physical exercises (58.7%); overweight (60.1%); family history (71.9%); smoking (74.7%); old age (78.1%) were the most common risk factors identified by the respondents.

Table 2 The participant's response to Knowledge items about Colorectal Carcinoma

Research Question	Variable	Frequency	Percentage
Is colon cancer most often caused by a person's behavior or lifestyle?	Yes	403	44.4%
	No	330	36.3%
	I don't know	176	19.3%
Do people eating a low-fat and high-fibre diet seem to have a lower risk of colon cancer?	Yes	337	37.1%
	No	174	19.2%
	I don't know	398	43.7%
Do people who do not exercise seem to have a lower risk of colorectal cancer?	Yes	116	12.9%
	No	535	58.7%
	I don't know	258	28.4%
Do people who are overweight tend to have a lower risk of colorectal cancer?	Yes	106	11.7%
	No	547	60.1%
	I don't know	256	28.2%
Do people who have a family history of colorectal cancer tend to have a lower risk of colon cancer?	Yes	166	18.3%
	No	653	71.9%
	I don't know	90	9.8%
Do smokers have a lower risk of colorectal cancer?	Yes	75	8.2%
	No	679	74.7%
	I don't know	155	17.1%
Do people who eat a lot of red meat tend to have a lower risk of colorectal cancer?	Yes	286	31.4%
	No	334	36.8%
	I don't know	289	31.8%
Do people of old age tend to have a lower risk of colorectal cancer?	Yes	58	6.4%
	No	711	78.1%
	I don't know	140	15.5%
Do people who have diabetes tend to have a lower risk of colorectal cancer?	Yes	353	38.6%
	No	298	32.9%
	I don't know	258	28.5%
Do people who have irritable bowel syndrome tend to have a lower risk of colorectal cancer?	Yes	198	21.7%
	No	360	39.5%
	I don't know	351	38.8%
DO people who have haemorrhoids tend to have a lower risk of colorectal cancer?	Yes	177	19.4%
	No	280	30.8%
	I don't know	452	49.8%
Is abdominal pain one of the symptoms of colorectal cancer?	Yes	429	47.3%
	No	191	21.2%
	I don't know	289	31.5%
Is weight loss one of the symptoms of colorectal cancer?	Yes	403	44.2%
	No	215	23.8%
	I don't know	291	32.0%

Is blood in stool one of the symptoms of colorectal cancer?	Yes	426	46.7%
	No	216	23.9%
	I don't know	267	29.4%
Is a change in bowel habits one of the symptoms of colorectal cancer?	Yes	314	34.6%
	No	213	23.5%
	I don't know	382	41.9%
Have you ever heard of colorectal cancer screening?	Yes	317	34.8%
	No	198	21.8%
	I don't know	394	43.4%
Is colonoscopy used as a screening test for colorectal cancer?	Yes	185	20.3%
	No	302	33.4%
	I don't know	422	46.3%
Is fecal testing used as a screening test for colorectal cancer?	Yes	136	14.9%
	No	332	36.4%
	I don't know	441	48.7%
Is X-ray with barium used as a screening test for colorectal	Yes	194	21.4%
	No	416	45.6%
	I don't know	299	33.0%
Does colorectal cancer get complicated over several years?	Yes	433	47.4%
	No	215	23.7%
	I don't know	261	28.9%

Participants indicated that they did not know risk factors such as eating red meat (31.4%); irritable bowel syndrome (38.8%), and hemorrhoids (49.8%). Abdominal pain, weight loss, and blood in the stool were among the symptoms of colorectal malignancies mentioned by participants (47.3%, 44.2%, and 46.7%, respectively). Most respondents did not know colorectal cancer screening tests, including colonoscopy (46.3%), fecal testing (48.7%), X-ray with barium (33%). (47.4%) of participants knew that colorectal cancer gets complicated over several years.

Table 3 The participant's response to Practice items regarding Colorectal Carcinoma

Research Question	Variable	Frequency	Percentage
Have you ever searched for information about colorectal cancer prevention intentionally?	Yes	41	4.6%
	No	717	78.7%
	Not sure	151	16.7%
Have you ever taken part in a colorectal cancer screening?	Yes	84	9.4%
	No	450	49.5%
	Not sure	375	41.1%
I go to see the doctor if i felt some of the previous symptoms?	Yes	709	78.1%
	No	120	13.2%
	Probably	80	8.7%
Do you intend to take up a Faecal occult blood test?	Yes	405	44.6%
	No	360	39.5%
	Probably	144	15.9%
On average, how many times do you eat spicy food?	Daily	299	33.1%
	Twice a week	110	12%
	Twice a month	84	9.3%
	I don't eat it	416	45.6%
On average, how many times do you eat fatty food?	Daily	414	45.6%
	Twice a week	82	8.9%
	Twice a month	38	4.3%

	I don't eat it	375	41.2%
On average, how many times do you eat fruits and vegetables?	Daily	532	58.7%
	Twice a week	271	29.7%
	Twice a month	87	9.5%
	I don't eat it	19	2.1%

According to the findings in Table 3, most participants (78.7%) had neither searched for information about colorectal cancer nor taken part in screening for the disease (41.1%). The majority of participants (78.1%) indicated they would see a doctor if they experienced related symptoms, with most of them (44.6%) assuring they intended to take a Fecal occult blood test. (54.4%) of the participants indicated that they eat spicy food, with most (33.1%) eating them daily. On average, (58.2%) of the respondents ate fatty foods, with most (45.6%) eating them daily. Most participants (97.9%) ate fruits and vegetables daily, twice a week, and twice a month.

Table 4 The participant's response to Attitude items concerning Colorectal Carcinoma

Research Question	Variable	Frequency	Percentage
It's important for me to know about colorectal cancer	Strongly agree	536	59.1%
	Agree	166	18.4%
	Neutral	183	19.9%
	Disagree	13	1.4%
	Strongly disagree	11	1.2%
Colorectal cancer diagnosed in an early stage can be treated better	Strongly agree	612	67.4%
	Agree	192	21.2%
	Neutral	47	5%
	Disagree	41	4.4%
	Strongly disagree	17	2%
The regular physical examination can find colorectal cancer at an early stage	Strongly agree	597	65.8%
	Agree	238	26.1%
	Neutral	37	4%
	Disagree	26	2.8%
	Strongly disagree	11	1.3%
Colorectal cancer screening tests are effective	Strongly agree	646	71.1%
	Agree	112	12.4%
	Neutral	75	8.2%
	Disagree	46	4.9%
	Strongly disagree	30	3.4%
Cancer screening should be widely implemented	Strongly agree	763	84.1%
	Agree	71	7.7%
	Neutral	45	5%
	Disagree	19	2.1%
	Strongly disagree	11	1.1%
I will take physical examination regularly	Strongly agree	657	72.4%
	Agree	112	12.4%
	Neutral	103	11.3%
	Disagree	22	2.3%
	Strongly disagree	15	1.6%
I will try to stop smoking. (If you're not a smoker skip this question)	Strongly agree	174	92.4%
	Agree	11	5.8%
	Neutral	4	1.8%
	Disagree	-	-
	Strongly disagree	-	-

Based on the findings in Table 4, many participant Swere positive toward preventing and treating colorectal cancer. The majority of participants strongly agreed (59.1%) and agreed (18.4%) that it was important to know about cancer. (88.6%) of participants believed colorectal cancer could be treated well if diagnosed early. The majority of participants (91.9%) agreed that routine physical examinations can detect colorectal cancer at an early stage. The effectiveness of colorectal cancer screening tests was (83.5%), and it should be extensively used (91.8%). Most participants (84.8%) agreed to take physical examinations regularly, with only (3.9%) disagreeing on regular physical examinations. 185 (98.2%) smokers agreed to stop smoking, with only 4 (1.8%) being neutral.

Table 5 Chi-square test demographic variables and the knowledge, attitude, and practice about colorectal carcinoma

Variable	Category	N (%)	X2	P-value
Sex	Male	519 (57.1)	74.112	0.056
	Female	390 (42.9)		
Age	18-24	11 (1.2)	57.539	<0.0001
	25-39	93 (10.2)		
	40-50	222 (24.4)		
	Above 50	583 (64.2)		
Marital Status	Single	183 (20.2)	7.62	0.267
	Married	726 (79.9)		
Level of education	Elementary School	58 (6.4)	98.162	0.001
	Secondary School	75 (8.3)		
	Post- Secondary Education	207 (22.8)		
	Academic	497 (54.7)		
	Postgraduate	72 (7.8)		

Table 5; demonstrates a statistically significant relationship between age and knowledge of Colorectal Carcinoma (p-value = <0.0001). The degree of education and the knowledge items also showed a statistically significant link (p-value = 0.001). Other demographic variables, like sex and marital status, did not show any statistical significance, as the p-value was greater than 0.05.

4. DISCUSSION

The results showed that while many individuals were aware of colorectal cancer, the majority (more than half) were not. The reasons, as well as the accompanying habits, way of life, and food, were well known. The majority of individuals were not aware of additional risk factors such as hemorrhoids, irritable bowel syndrome, and consuming red meat. The knowledge of cancer risk factors like smoking, being overweight, not exercising, and having a family history was shared by a considerable portion of individuals. The participants were aware of the signs and symptoms of cancer, including stomach pain, weight loss, and blood in the stools. While the majority were unaware of cancer screening procedures like colonoscopy, fecal testing, and barium X-rays.

The results show that the majority of individuals had not engaged in either information searching or cancer screening. However, the majority of them (78.1%) stated they would see a doctor if they experienced cancer-related symptoms, and the majority (44.6%) consented to undergo a fecal occult blood test. Daily consumption of spicy and fatty foods was reported by the vast majority (97.9%), who also said they regularly consumed fruits and vegetables over the course of weeks and months. According to the survey, most participants supported measures to prevent and treat colorectal cancer. Regular physical examinations of wounds can help diagnose and treat cancer by identifying it in its earliest stages.

The effectiveness of colorectal cancer screening tests in identifying and diagnosing cancer was reported to be 83.5%. The great majority of smokers (98.2%) decided to give up. These findings concur with a study conducted on adult Saudis in Jeddah City, Saudi Arabia, which found that quitting drinking and smoking decreased the risk of colorectal cancer and that regular exercise, early detection, and diagnosis had a substantial impact on cancer treatment outcomes (Tfaily et al., 2019). The results also support a study on colorectal cancer awareness and attitudes toward screening that was carried out in Lebanon. (Saber et al., 2022) participants showed signs of favorable attitudes and were willing to participate in colorectal cancer screening, which improved cancer therapy through early diagnosis and detection.

Additionally, the study established an association between the gender, age, and education level of participants and their knowledge, practice, and attitude toward colorectal cancer. Chi-Square values of the tests were 74.112 with a P-value of 0.056>0.05, 57.539 with a P-value of 0.000, and 98.162 with a P-value of 0.001 respectively, which is less than the test-statistics significance level of 0.05. This study established a statistically significant association between age, education level of participants, and their knowledge, practice, and attitude about colorectal cancer. There was no statistically significant association between the gender of the participants and their knowledge, practice, and attitude toward the disease.

5. CONCLUSION

It can be said that the population of Bisha City had a low level of general knowledge of colorectal cancer (56.45% had poor knowledge). The population knew little about the risk factors, symptoms, and cancer screening and diagnosis. Risk factors include smoking, overweight, lack of physical exercise, and family history were known. They were unaware of additional risk factors, such as hemorrhoids, irritable bowel syndrome, and consuming red meat. The population had little knowledge about symptoms such as abdominal pain, weight loss, and blood in stool.

Most people were unaware of cancer screening procedures like colonoscopies, fecal testing, and barium X-rays. People only go to a doctor for treatment if they have symptoms associated with cancer. Our study also showed a favorable attitude toward colorectal cancer awareness; most participants agreed to give up smoking and attend routine physical exams and cancer screenings. There is a statistically significant correlation between people's knowledge, behavior, and attitudes toward colorectal cancer and their age and educational level.

Recommendations

The community of Bisha City should be informed and involved about the dangers, contributing causes, symptoms, and importance of early detection of colorectal cancer, as well as the prevention and treatment options available, including dietary modifications, routine physical exams, and screening. They should also be inspired to follow healthy eating habits and engage in more physical activity. The primary goals of public health education should be to reduce alcohol and tobacco consumption and promote routine population screenings. Early detection will make diagnosing and treating colorectal cancer possible, potentially leading to better outcomes.

Funding

This study has not received any external funding.

Conflict of interest

The authors declare that there is no conflict of interest.

Data and materials availability

The corresponding author (AA) is willing to provide the data that support the study's conclusions upon reasonable request.

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