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RESEARCH ARTICLE

PUBLIC AWARENESS OF RISK FACTORS AND SCREENING FOR COLORECTAL CANCER AMONG SAUDI ARABIA POPULATION, 2016.

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Abstract

Background: Colorectal cancer is the second most common cancer in Saudi Arabia. Early screening for this disease increases the chances of successful treatment and survival. So, this study aimed to assess the level of the public awareness of risk factors and screening for colorectal cancer among Saudi Arabia population 2016, Saudi Arabia.

Methods: Across-sectional study was conducted through Saudi population from all regions, including (4977) participants, of both genders and various ages. The questionnaire was answered electronically. The questionnaire consists of five main parts of questions. The first part includes demographic questions. The second part includes questions related to the awareness about the symptoms and risk factor of colorectal cancer. The third part includes questions related to the awareness of early screening for colorectal cancer. The fourth part includes questions related to Knowledge and attitude of colorectal cancer early screening. While include questions related to barrier of colorectal cancer early screening.

Results: From (4977) participants (2366) males and (2611) females, 75.8% heard about colorectal cancer before. The most symptom reported by respondents “blood with stool” by 29% only. The most risk factor reported by respondents "inflammatory and ulceration of the colon," by 32%. 67% have never heard about early screening for colorectal cancer only 5.2% do early screening for colorectal cancer. The most common known way to detect the disease “Colonoscopy”. 47% do not have any reasons preventing them from having the early screening for colorectal cancer. There was a relationship between having early colorectal cancer screening and gender, age, educational level, and monthly income (P-value < 0.05). But there was a relationship between having early colorectal cancer screening and region or living place (P-value > 0.05).

Conclusion: There was a low level of awareness about the symptoms and risk factor of colorectal cancer. Also, there was poor public awareness, knowledge and attitude towards colorectal cancer early screening.

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Introduction: -

Colorectal cancer (CRC) is the third most common cancer in the world, with nearly 1.4 million new cases diagnosed in 2012 and it's predicted that worldwide the number of cases will rise to 1.36 million for men and 1.08 million for woman by 2035 [2]. The community has a crucial role in increasing the awareness of the risk factors and warning signs on common diseases such as colorectal cancer. This process will provide adequate knowledge about the disease may lead the general population to involve in the cancer screening [3]. In Saudi Arabia, despite the relatively low incidence, CRC is the second most common cancer, ranking first among men (10.6%) and third among women (8.9%) between 1994 and 2004. In spite that KSA consider as a low-risk country for CRC, the incidence seems to be increasing with time.

The community has a crucial role in increasing the awareness of the risk factors and warning signs on common diseases such as colorectal cancer. This process will provide adequate knowledge about the disease may lead the general population to involve in the cancer screening [5].

The risk factors that are correlated with cancer most of them are avoidable, such as, sedentary lifestyles (lack of physical activity, obesity, excessive smoking and excessive alcohol), nutrition deficiency (low dietary fiber, high saturated fat intake) and infections [5]. Certain of the most important risk factors such as family history and age cannot be modified [6]. According to the data from the Saudi Cancer Registry indicate an increase in CRC incidence between 2001 an2006, and almost doubled between 1994 and 2003 [4]. Despite the increasing in the incidence of colorectal cancer, health education roles about colorectal cancer is not emphasized by Ministry of Health in compare with other cancers such as breast and lung cancer. Ministry of Health did not establish national screening program for the colorectal cancer, therefore, it's important to activate the role of health promotion and enhance the level of awareness toward colorectal cancer in the Saudi Population.

Hence, our aim of this study is to assess the level of the public awareness of risk factors and screening for colorectal cancer among Saudi Arabia population, 2016population, 2016, Saudi Arabia.

Objectives: -

- To estimate the prevalence of public awareness of early screening for colorectal cancer (CRC)**.**
- To assess the knowledge and attitude about early screening among KSA population regarding CRC.
- To identify the Awareness of population about the symptoms and risk factor of CRC.
- To know the barrier of screening.

Methodology: -

Based on the nature of the study, and the objectives sought to be achieved, and the data to be obtained, and based on the questions that study sought to answer them, the study used descriptive analytical approach which is based on the study of the phenomenon, as it is in reality, and contribute to describe it accurately as it illustrates its characteristics through information gathering, analysis and interpretation, and then apply the results in the light.

one of this approach features that it does not stop at the end of information gathering about certain phenomenon classifying and organizing it in order to investigate different aspects of the phenomenon, but it goes to reach conclusions contribute to the understanding of reality through the analysis of the phenomenon, interpretation, and then reaching meaningful generalizations which make the study increase the credit of knowledge on the phenomenon, and contribute to the development and reality of phenomenon destination and improve it.

Tool of the study: -

The questionnaire consists of five main parts of questions. The first part includes demographic questions as (sex, age, Educational level, Region, Living location, Monthly income). And the second part includes questions related to the awareness about the symptoms and risk factor of colorectal cancer. The third part includes questions related to the awareness of early screening for colorectal cancer. The fourth part includes questions related to Knowledge and attitude of colorectal cancer early screening. While include questions related to barrier of colorectal cancer early screening.

Statistical methods: -

The statistical analysis program (SPSS v.22) was been used in the study in data entry and analysis, with the use of necessary statistical methods to achieve the objectives of the study. The following statistical methods were used:

- Frequencies.

- Percentages.
- Diagrams.
- Chi Square test.

Population & Sample of the Study: -
The study population includes all KSA population (31.52) million till the year of research, a sample of (4977) persons were chosen randomly, and answered the electronic questionnaire, table (1) shows their properties according to their personal data.

Table (1): Personal data for the study sample. (N= 4977)

Personal Data		**Frequency**	**Percent**
Gender	Male	2366	47.5
	Female	2611	52.5
Age	Less than 18	330	6.6
	19 - 25	2240	45.0
	26 - 35	1425	28.6
	36 - 50	814	16.4
	More than 50	168	3.4
Educational level	Primary or less	24	0.5
	preparatory	103	2.1
	secondary	1107	22.2
	Academic	3502	70.4
	Other	241	4.8
Region	Western region	1423	28.6
	Eastern region	701	14.1
	Central region	2202	44.2
	The southern region	376	7.6
	Northern region	275	5.5
Living location	City	3817	76.7
	Governorate	844	17.0
	Village	316	6.3
Monthly income	Less than 5000 rs	2420	48.6
	5000 - 10000 rs	1180	23.7
	10000 - 15000 rs	715	14.4
	15000 - 20000 rs	350	7.0
	More than 20000 rs	312	6.3

It is clear from the previous table that 52.3% of the participants were females, while 47.5% of them were males, most of them were in the age between (19- 25) years old. And most of them had bachelor university educational levels.

It is noticed that 44.2% of them were living in the middle area of KSA, and most of them were living in the cities. And according to their monthly income; 48.6% of them had less than (5000) Riyal monthly, while 23.7% of them had from (5000- 10000) Riyal monthly, and the rest of them had more incomes than mentioned. The next diagram shows that.

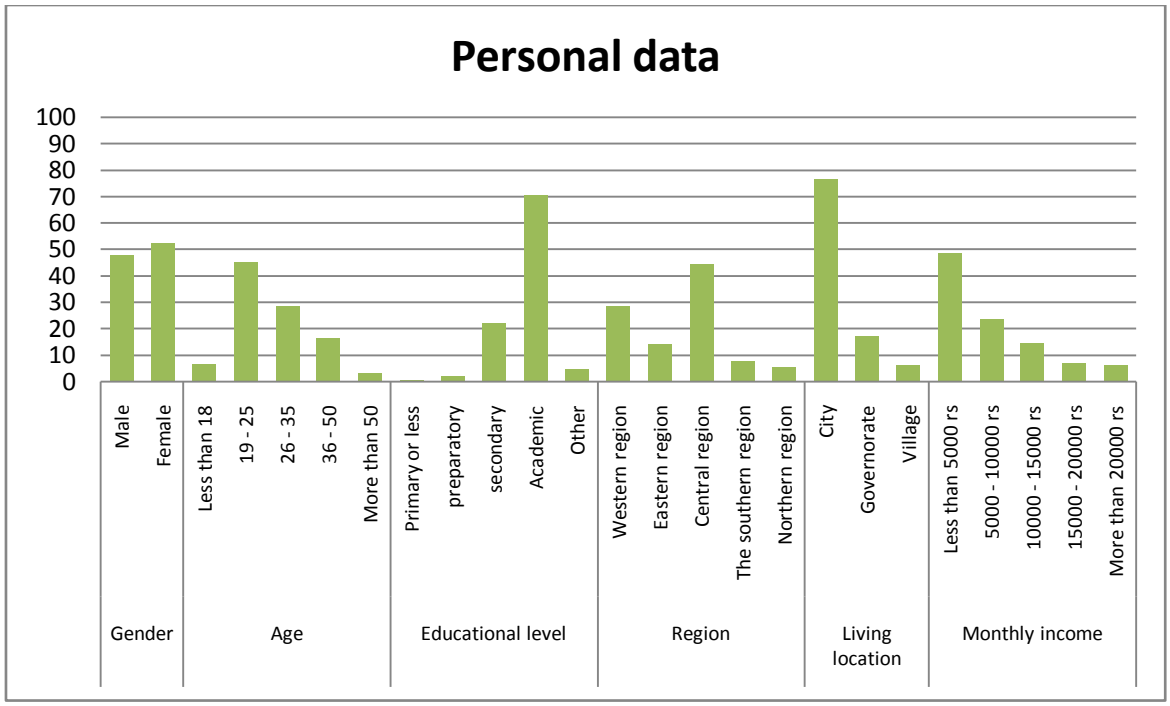


Figure (1): Personal data for the study sample.

Results: -

First: The awareness of population about the symptoms and risk factor of colorectal cancer.

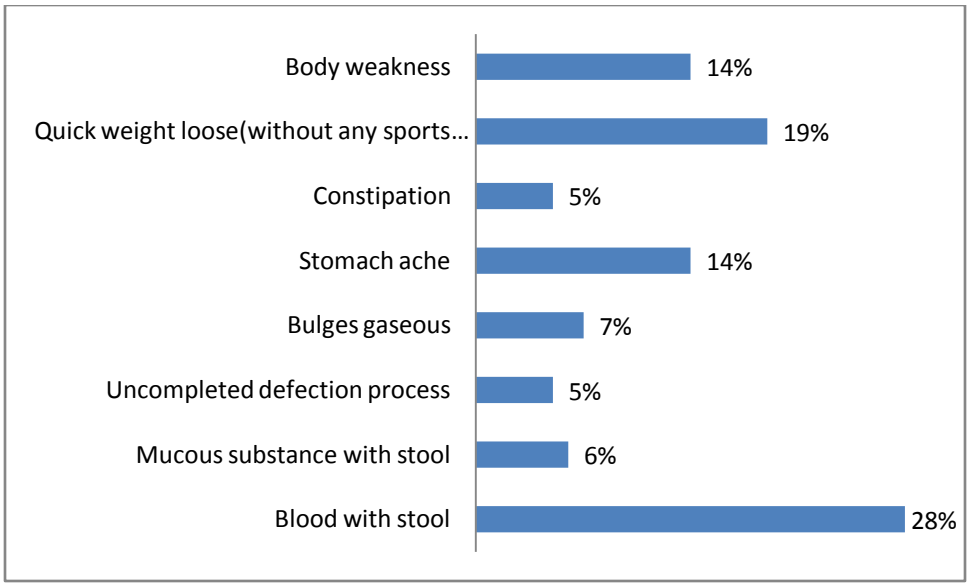
The next table shows the participant's' distribution according to whether they have ever heard about colorectal cancer before or not, we notice that 75.8% of the participants heard about them before, while the others have never heard about them.

	Frequency	Percent
Yes	3772	75.8
No	1205	24.2
Total	4977	100.0

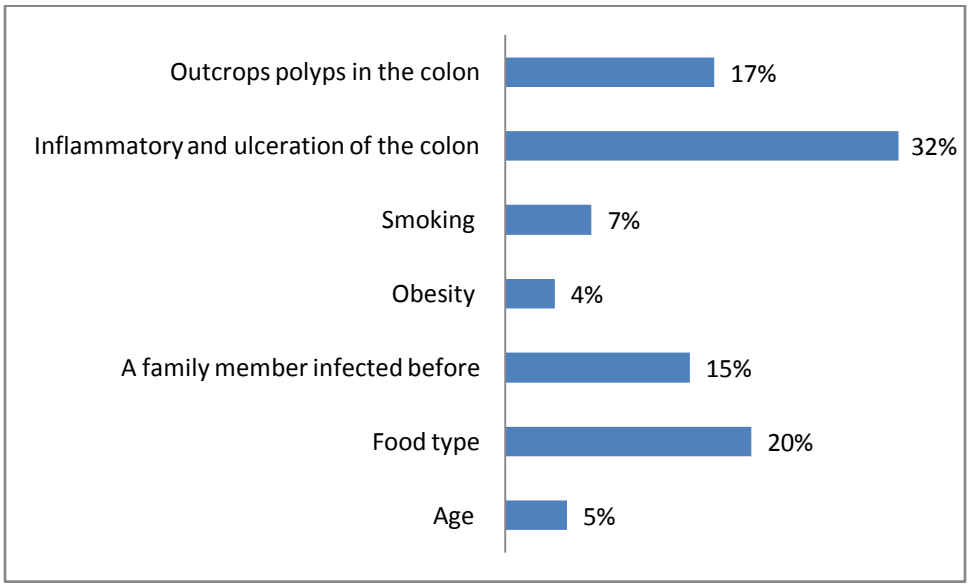
And the next table shows the participants' distribution according to their thought about the prevalence order of colorectal cancer; 16.4% of the participants thought that colorectal cancer are the second common tumors in KSA, while 11.9% of them thought that they are the third common tumors in KSA, and 8.1% of the participants thought that these tumors are the most common in KSA.

	Frequency	Percent
The first common tumors in KSA	401	8.1
The second common tumors in KSA	816	16.4
The third common tumors in KSA	594	11.9
I don't know	3166	63.6
Total	4977	100.0

The next diagram clarifies some of the disease symptoms, and the percentage of that the participants'' thought it is really one of the symptoms or not, the most important symptom was "blood with stool" with a percentage of 29%, then "quick weight loose" with a percentage of 19%, 14% of them thought that "stomach ache" is a symptom of colorectal cancer, and the same percentage for those who thought that "body weakness" is a symptom of the disease.



And the next diagram shows some factors that may increase the risk probability of colorectal cancer, and the proportion of respondents believe all of them; as we note that the most important of those things from the viewpoint of the participants are "inflammatory and ulceration of the colon," and "the type of food, then" a family member infected with the disease earlier ".



The next table shows the participants' distribution according to their belief which category is the most at risk of colorectal cancer, where we note that 29.3% thought that men are more at risk of developing this type of cancer, while 24.2% thought the equal chance of injury between the sexes in this type of cancer.

	Frequency	**Percent**
Women	430	8.6
Men	1460	29.3
The sexes equal proportion	1205	24.2
I don't know	1882	37.8
Total	4977	100.0

The following table we note that 49.9% of participants believe that colorectal cancer can be prevented, as well as 57.1% of participants believe that colorectal cancer can be detected early, before appearing of symptoms, and 80.4% of them believe that colorectal cancer can be treated if it is detected early.

	Yes		No		I don't Know	
	#	%	#	%	#	%
Can colorectal tumor be prevented?	2485	49.9	301	6.0	2191	44.0
Can colorectal cancer can be detected early, before appearing of symptoms?	2840	57.1	465	9.3	1672	33.6
Can colorectal cancer be treated if it is detected early?	4000	80.4	93	1.9	884	17.8

The following table shows the source of information among participants from all previous questions about colon cancer, where 36.9% of them said that the source of that information is by the personal attention, while 31.8% of them said that the source of their information about the disease through social media and the Internet.

	Frequency	Percent
educational subjects	406	8.2
Awareness campaigns	302	6.1
personal attention	1838	36.9
Social media and internet	1584	31.8
By specialist explanation	144	2.9
Friends	703	14.1
Total	4977	100.0

Second: The prevalence of public awareness of early screening for colorectal cancer

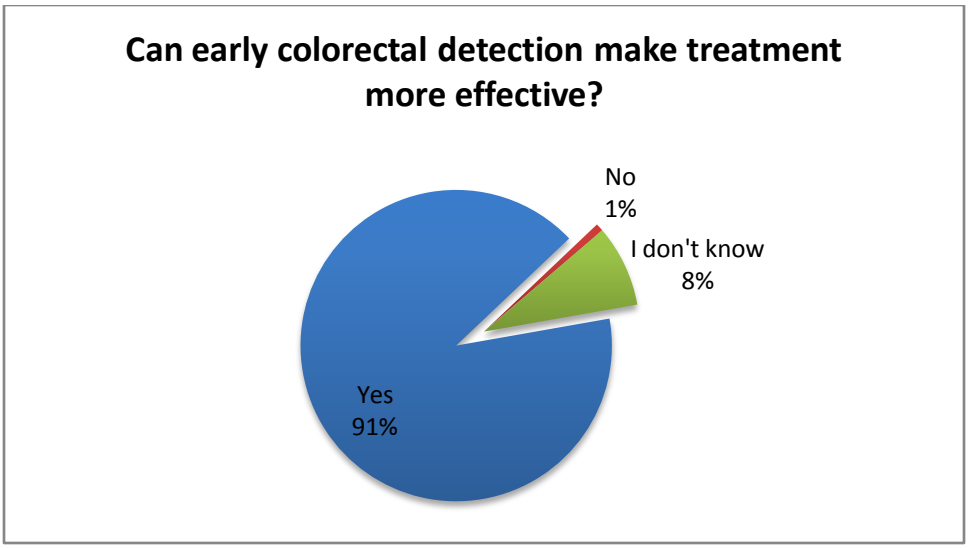
The next table shows the participants' distribution according to whether they ever heard about early colorectal detection; 67% of them have never heard about that, while 33% of them have heard about that.

	Frequency	Percent
Yes	1640	33.0
No	3337	67.0
Total	4977	100.0

The next table shows the source from which the participants got their information about early colorectal tumor detection they heard before; social media and internet was the first source, then personal attention to know this information.

	Frequency	Percent
educational subjects	223	13.6
Awareness campaigns	289	17.6
personal attention	470	28.7
Social media and internet	446	27.2
By specialist explanation	114	7.0
Friends	98	6.0
Total	1640	100.0

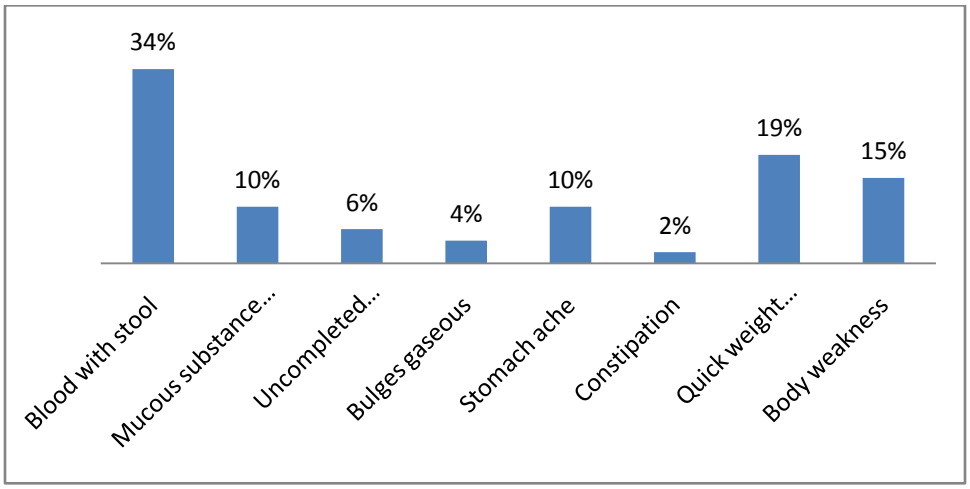
The next diagram shows that 90.7% of the participants thought that early colorectal detection make treatment more effective.



And in asking the participants about the suitable age to check for colorectal tumor, 50.1% of the participants said that it is suitable to do the check up at (26- 35) years old, while 40.1% of them said that it is (36- 50) years old.

	Frequency	Percent
26 - 35	2494	50.1
36 - 50	1996	40.1
More than 50	487	9.8
Total	4977	100.0

The next diagram shows the symptoms that the participants thought it's appearance requires early colorectal tumor checkup; the most important symptoms were "blood with stool", "body weakness".



The next table shows the participants' distribution according to whether they made the early colorectal tumor checkup or not after they heard about it or advised to do that; 5.2% of them made the early checkup, while 94.8% of them didn't.

	Frequency	Percent
Yes	258	5.2
No	4719	94.8
Total	4977	100.0

The next table shows the participants' distribution (those who made the early checkup) according to their commitment to the checkup schedule; 40.3% were committed to the scheduled checkup, while 36.4% of them were committed randomly, and the others didn't repeat the checkup.

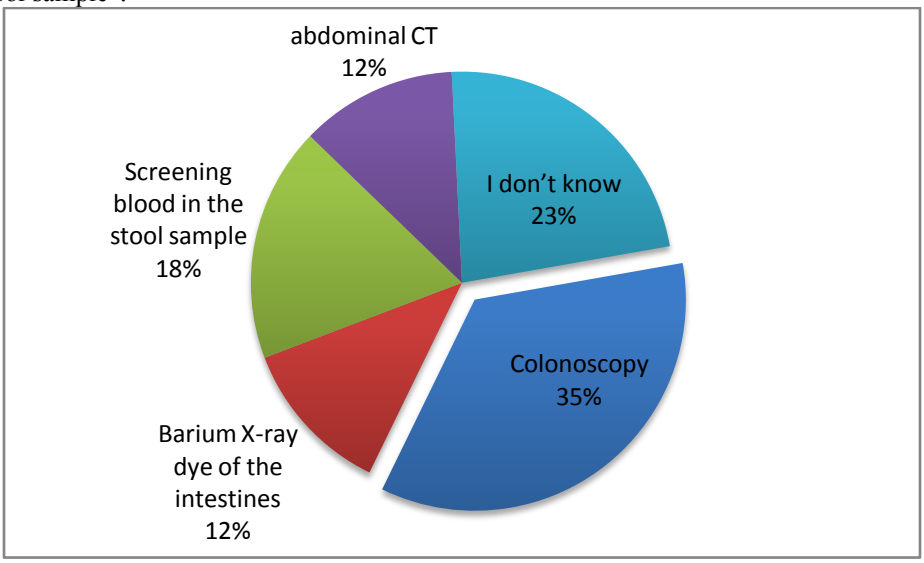
	Frequency	Percent
In an orderly	104	40.3
In a randomly	94	36.4
Don't doing at all	60	23.3
Total	258	100.0

The next table shows the participants' distribution according to their knowledge extent about the checkup centers in their cities; we noticethat 91.8% of them didn't know the checkup centers in their cities, while 8.2% of them knew.

	Frequency	Percent
Yes	407	8.2
No	4570	91.8
Total	4977	100.0

Thirdly: Knowledge and attitude about early screening among KSA population regarding CRC:

The next diagram shows some ways of early colorectal cancer detection and the participants' knowledge about these ways, we notice that the most common known way to detect the disease in KSA is "Colonoscopy" and "Screening blood in the stool sample".



And when asking the participants about the most accurate tests; 39.8% answered "Colonoscopy", and 9.4% barium X-dye of the intestines, while 6.9% answered abdominal CT, and 5.8% "examining blood in a stool sample". While found 38.1% of participants have no knowledge about the most accurate tests for the detection of colorectal cancer.

	Frequency	Percent
Colonoscopy	1982	39.8
Barium X-ray dye of the intestines	467	9.4
Screening blood in the stool sample	291	5.8
abdominal CT	343	6.9
I don't know	1894	38.1
Total	4977	100.0

And the next table shows the participants' distribution according to preferring to use a test over the others if they decide to do that; 22.2% of them would choose Colonoscopy, while 17% of them would choose abdominal CT, 16.6% would choose "Screening blood in the stool sample", and 11.2% of them would choose "Barium X-ray dye of the intestines".

	Frequency	Percent
Colonoscopy	1104	22.2
Barium X-ray dye of the intestines	559	11.2
Screening blood in the stool sample	828	16.6

abdominal CT	846	17.0
I don't know	1640	33.0
Total	4977	100.0

And when they were asked about the reason for which they would choose that way for colorectal detection; 39.9% said that they did not know anything about the rest of the tests, while 23% answered because of accuracy, 21.5% for the lack of a deep intervention into the body, and 11.4% due to fear of the rest of the tests.

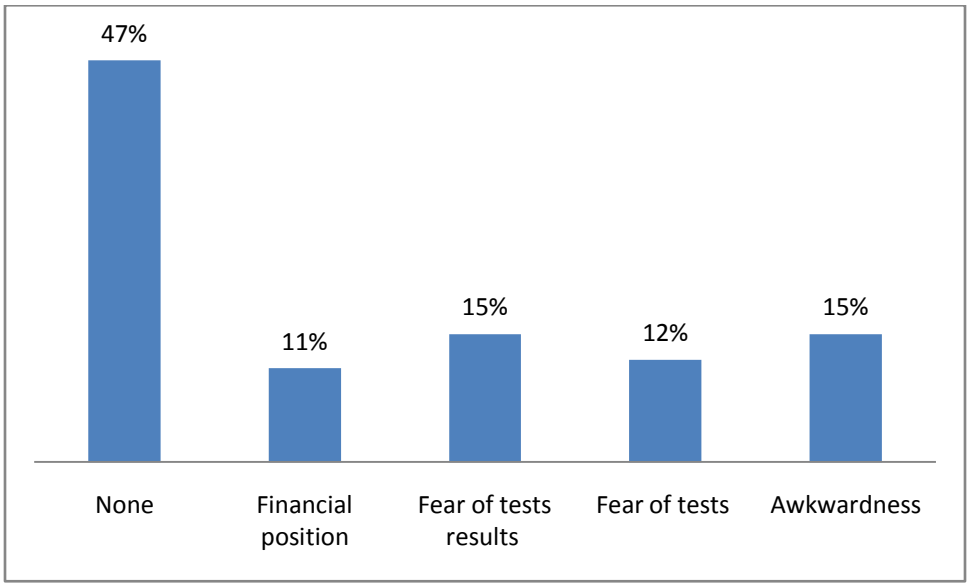
	Frequency	**Percent**
Accuracy	1145	23.0
No a deep intervention into the body	1072	21.5
Fear of the rest of the tests	565	11.4
Speed	209	4.2
Know nothing about the other tests	1986	39.9
Total	4977	100.0

Fourth: Knowing the barrier of screening:

The next table shows the participants' distribution according to whether there were reasons prevent them from making early screening for colon cancer, where we note that 26.5% of the participants said they have reasons prevented them from conducting the examination, while 73.5% do not have any reasons preventing them from having the examination done.

	Frequency	**Percent**
Yes	1318	26.5
No	3659	73.5
Total	4977	100.0

And according to the reasons that might prevent the participants from having the required tests, the most important reasons were "the fear of the test results", and "fear of the tests" and the financial position. The next diagram shows the answers' distribution on the question.



The next table shows the participants' distribution according to the reason behind the lack of an early screening for colon cancer, where we note that 35.6% of participants answered that the lack of awareness for the disease and tests is preventing them from conducting the examination, while 29.6% said that the reason behind the lack of an examination is lazing and being busy, while the others responded by other causes.

	Frequency	Percent
Don't have time	329	6.6
Lazing and being busy	1475	29.6
I need moral / sensory incentive	607	12.2
lack of awareness for the diseased and tests	1770	35.6
Far health centers	280	5.6
Other	516	10.4
Total	4977	100.0

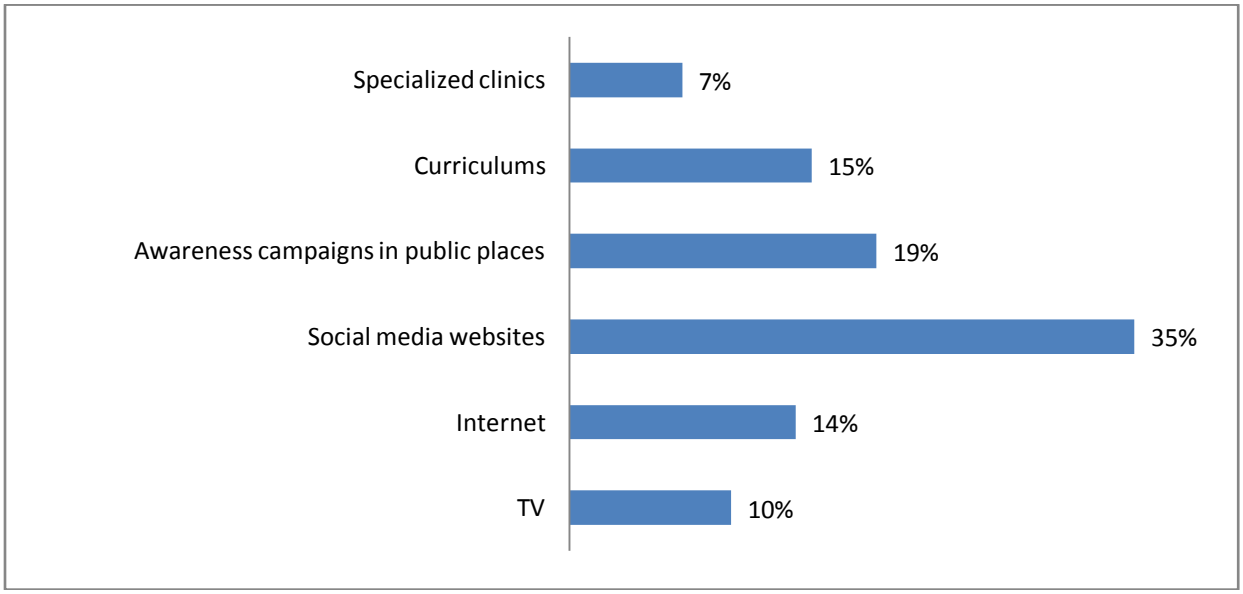
And when asking the participants if they would have the early colorectal test made if they were (obese, more than 50 years old, one of the family members was infected, smoker) even if they didn't suffer from any symptoms, 61.2% said that they would have the test made, while the others said that they wouldn't.

	Frequency	Percent
Yes	3046	61.2
No	1931	38.8
Total	4977	100.0

Also, when they were asked about whether they are people who have to early screening, and they have a clearer idea of early screening, will they do and advise those around them to do it? The majority of them replied that they would do so, while the remaining participants said that they wouldn't.

	Frequency	Percent
Yes	4363	87.7
No	614	12.3
Total	4977	100.0

Finally, when the participants were asked about the best ways to spread awareness among people about early screening for colorectal cancer, most of the answers were that the best way is through social networking sites, and awareness campaigns in public places, the curriculum and the internet, TV and others, the next diagram shows the distribution of participants' answers about each of the previous methods.



Test Hypotheses:

The next table illustrates the participants' early colorectal check extent according to their personal information. We conclude that there is a relation between sex, age, educational level, monthly income variables and the participants' early colorectal check extent, but there is no effect of the region or living place variables.

Variable		Did you have the early colorectal check done?		Chi-Square	P-value	Result
		Yes	No			
Gender	Male	138	2228	3.862	.049	There is a relationship
	Female	120	2491			
Age	Less than 18	6	324	97.057	.000	There is a relationship
	19 – 25	81	2159			
	26 – 35	71	1354			
	36 – 50	69	745			
	More than 50	31	137			
Educational level	Primary or less	2	22	20.109	.000	There is a relationship
	preparatory	3	100			
	secondary	53	1054			
	Academic	173	3329			
	Other	27	214			
Region	Western region	86	1337	4.213	.378	No relationship
	Eastern region	39	662			
	Central region	100	2102			
	The southern region	19	357			
	Northern region	14	261			
Living location	City	207	3610	2.648	.266	No relationship
	Governorate	40	804			
	Village	11	305			
Monthly income	< 5000	82	2338	66.055	.000	There is a relationship
	5000 – 10000	64	1116			
	10000 – 15000	40	675			
	15000 – 20000	31	319			
	> 20000	41	271			

We conclude from the next table that there is a relation between whether the person conducting early screening for colorectal cancer and the belief that cancer of the colon and rectum can be prevented, as well as a relationship between whether the person conducted the check and the extent of his belief that colorectal cancer can be detected early, before the appearance of symptoms, There is a relationship between whether the person conducting early screening and the belief that colorectal cancer can be treated if detected, and finally a relationship between whether the person conducted early screening and the belief that early screening for colon cancer and early detection gives treatment a chance to be more effective.

Question		Did you have the early colorectal check done?		Chi-Square	P-value	Result
		Yes	No			
Do you think that colorectal cancer can be prevented?	Yes	147	2338	29.199	.000	There is a relationship
	No	31	270			
	I don't Know	80	2111			
Do you think that colorectal cancer can be detected early, before appearing symptoms?	Yes	195	2645	45.217	.000	There is a relationship
	No	25	440			
	I don't Know	38	1634			
Do you think that colorectal cancer canbe treated if detected early?	Yes	230	3770	22.991	.000	There is a relationship
	No	9	84			
	I don't Know	19	865			
Do you think that colorectal cancer early detection gives treatment a chance to be more effective?	Yes	243	4273	11.784	.003	There is a relationship
	No	5	34			
	I don't Know	10	412			

From the next table we conclude to that there is a relation between whether the person conducting early screening for colorectal cancer and between: the extent to hear about early screening for colorectal cancer, and the extent of his knowledge of the centers of early screening in his city, and how he believed the suitable age to perform early screening for colorectal cancer, and why he thinks it is not necessary to hold any kind of examination, while there was no relationship between whether the person conducting early screening for colorectal cancer and whether there are reasons prevented him from making an early colorectal check.

Question		Did you have the early colorectal check done?		Chi-Square	P-value	Result
		Yes	Yes			
Did you hear about early colorectal check?	Yes	193	1447	215.754	.000	There is a relationship
	No	65	3272			
Do you know the centers of early screening in your city?	Yes	116	291	490.310	.000	There is a relationship
	No	142	4428			
are there any reasons prevented you from making an early colon cancer check?	Yes	61	1257	1.126	.289	No relationship
	No	197	3462			
What is the suitable age to perform the early colorectal check in your opinion?	26 - 35	90	2404	46.127	.000	There is a relationship
	36 - 50	115	1881			
	More than 50	53	434			
Why do you believe that there is no necessity for performing any type of check?	Don't have time	28	301	13.220	.010	There is a relationship
	Lazing and being busy	75	1400			
	I need moral / sensory incentive	28	579			
	lack of awareness for the diseased and tests	71	1699			
	Far health centers	17	263			

Discussion: -

Colorectal cancer (CRC) is the fourth leading cause of death worldwide [7]. It is well recognized that lack of cancer awareness in the community can have deleterious effects on time to presentation and, unsurprisingly therefore, on overall survival [8, 9, 10, 11]. And the vast majority of cases and deaths from colorectal cancer can be prevented by applying existing knowledge about cancer prevention [12]. Therefore, this study conducted to assess public awareness of risk factors and screening for colorectal cancer among Saudi Arabia population.

The respondents showed low level of awareness about the symptoms and risk factor of colorectal cancer. The main sources of information for respondents were personal attention, followed by social media and internet. Despite its importance, awareness campaigns represent the source of information for 6.1% just. This shows the lack and dereliction of awareness campaigns related to colorectal cancer. Many previous studies showed found low levels of knowledge of CRC, including awareness of its symptoms and risk factors in many countries. In Hong Kong [13]. In West Malaysia [14]. Western Australians [15]. Iranians [16]. American Indians [17]. An ethnically diverse population in Australia [18].

At the current study, most of the respondents heard about colorectal cancer before. While 24.2% didn't hear about it before. This finding so close to study conducted by Bukhari et al., at Makah found that 23% of targeted population not hear about Colorectal cancer [19]. Colorectal cancer is the second most common cancer in Saudi Arabia [20].

According to our results only 16.4% reported that CRC is the second most common cancer in Saudi Arabia. While 63.6% reported that they don't know the order of colorectal cancer. This is in line with results of Bukhari et al., who's reported that 66% not know that colorectal cancer is common in Saudi Arabia [19].
The symptoms of colorectal cancer include; rectal bleeding, change in bowel habit and abdominal pain. They may also present with systemic symptoms – anorexia, significant weight loss, fatigue and symptoms of anemia – features usually suggestive of advanced disease. In question regarding to respondents' knowledge of colorectal cancer symptoms, the most symptom reported by respondents at this study was "blood with stool" by 29%. McVeigh et al., found at their study that (62%)identified blood in the bowel motion as a worrying symptom [21]. This difference show the low level of knowledge about CRC symptoms at our study.

Colorectal cancer risk factors include; age, familial and hereditary factors, as well as environmental lifestyle-related risk factors such as physical inactivity, obesity, smoking, and alcohol consumption [12]. the most risk factor reported by responders at this study was "inflammatory and ulceration of the colon,"by 32%. In Saudi Arabia, colorectal cancer ranking first most common cancer among men (10.6%) and third among women (8.9%) [20]. This perhaps because of the prevalence of smoking among men more than it among women. But in our study only 29.3% thought that men are at risk of colorectal cancer more than women.

The U.S. Preventive Services Task Force (USPSTF) and American Cancer Society strongly recommend that clinicians screen all men and women 50 years of age or older who are at average risk for colorectal cancer. The individuals who are considered at high risk because of a history of suggestive familial polyposis or hereditary nonpolyposis colorectal cancer or those with a personal history of ulcerative colitis may need to be screened earlier than age 50 [22]. In this study, there was poor public awareness knowledge and attitude about early screening for colorectal cancer. Our finding in line with Zubaidi et al., study in KSA that found there existed large knowledge gaps when it came to CRC screening, symptoms, risk factors, and detection [23]. Whereas the most of our respondents 67% had never heard about early colorectal detection. This finding confirm Bukhari et al., study in Makah fining that most respondents didn't hear about early screening of Colorectal 52% [19]. This is considered a source of concern because the diagnosis of earlier stage disease has the potential to improve survival. The source of information about early colorectal detection at our study for the category whose heard about it was personal attention and Social media and internet, while the awareness campaigns represent the source of information for 17.6% of them. Given the awareness campaigns related to breast cancer, for example the highly successful "Pink Ribbon" campaign and the introduction of "Breast Cancer Awareness Month" annually every October has led to dramatic increase in motivation for patients to attend for screening, and have therefore resulted in an increased rate of detection of breast cancers [24]. This indicates the active role of awareness campaigns in the early screening of cancer and the need to employ it larger in relation to colorectal cancer. Although Saudi Arabia has the available resources for diagnostic and therapeutic procedures, there is lack of a consistent organized screening program for CRC screening [23].

CRC screening should be initiated at 50 years of age [23]. But according to or results only 9.8**%** knew that, this result similar to Alamin et al., finding by study for undergraduate students at KSA [25]. This show a low level of knowledge about CRC screening compared to other study for Greek medical students that's present majority of their participants (83%) were able to identified the recommended age [26]. But this difference may be due to the difference in the target group at studies, the latter was belonging to medical students.

According to our results only 5.2% of the respondents had the early CRC screening after hearing about it. Less than half of this group were committed to the scheduled screening. Which means that there is a need for more effort to urge the community to make the early CRC screening. The vast majority of our respondents didn't know the CRC screening centers in their cities. This was confirmed by a study in Mecca and found that the most didn't know where the place of colorectal cancer screening is [19].

In our study the most common known way to detect the disease in KSA is "Colonoscopy", and it is the most accurate way by responders believe, the main reason for the preference of most of the respondents of this method is that they do not know anything about other screening methods. Most of our respondents do not have any reasons preventing them from having the early screening for colorectal cancer. In many of the studies reported that the financial burden is the most common obstacle of CRC screening programs [27, 28, 29]. But this does not apply to the Kingdom of Saudi where health care is publicly funded in government hospitals, in addition to a proportion of

population being health insured. Nonetheless, access to health care facilities can be difficult due to long waiting times in public hospitals [30].

Lack of awareness for the diseased and tests were the reason of preventing one third the respondents from having the early screening. As well the majority reported that they will do the early screening if they have a clearer idea about it. And 61.2% reported that they would have this early screening if they had any of its risk factors. This close to the results of study in KSA [30], and other in Palestine [31].

According to our results there was a relationship between having early CRC screening and gender, whereas males having early screening more than females. In general, men have been more willing to participate than women [32, 33]. This could be because men are aware that lifestyle risk factors are more strongly associated with cancer in men than in women [34], or more likely reflects men's tendency to believe that cancer risk is modifiable [35]. This does not comply with another studies by Almadi et al., and Qumseya et al., found that no differences seen between males and females with regard to the willingness to undergo early CRC screening, nor was there a difference between both genders in the chosen screening method [30,31].

There was relationship between having early CRC screening and age of respondents. This is consistent with previous analysis reported by the NHIS in 2000 and 2005 [32, 36].

There was relationship between having early CRC screening and educational level. Most studies agree that CRC screening is increased in highly educated participants [37]. This is logical because it is increasing educational level is increasing awareness and then realize the need to conduct the CRC screening.

There was relationship between having early CRC screening and monthly income. One of the most important factors for predicting participation in CRC screening is socioeconomic deprivation, highlighted by the recent NHIS survey showing a progressive participation with a higher annual family income [36]. As well as economic level, may affect the level of education of individuals and hence the awareness of the importance of screening.

Conclusion: -

There was a low level of awareness about the symptoms and risk factor of colorectal cancer. As well as for CRC,early screening there waspoor public awareness, knowledge and attitude. Awareness campaigns did not play a significant role in educating the community about CRC symptoms, risk factor, and early screening. Also, there wasn't a notable tendency to hold CRC early screening. According to our results there was a relationship between having early CRC screening and gender, age, educational level, and monthly income. But having early CRC screening didn't affected by region or living place.

Recommendations: -

- Awareness campaigns should be conducted in abundance.
- Distribution of pamphlets containing symptoms and risk factor of colorectal cancer.
- Send mobile messages containing locations of screening centers by provinces.
- Should be directed to the media to awareness about CRC.
- Urged population to maintain a balanced diet rich in fiber, do physical activity continuously, maintain a healthy weight, and avoid smoking.
- Urged population to commitment to conduct the CRC screening in a timely manner.

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