General Population Awareness Regarding Colorectal Cancer and its Determinants in Aseer region, Saudi Arabia

Shehata Farag Shehata (1,2)
Mohammed Saeed Alqahtani (3)
Nawaf Ahmad Yahya (3)
Abdullah Ali Aseeri (3)
Mohammed Ali Alotaif (3)
Abdulaziz Ali Abdullah (3)

(1) Assistant professor of community medicine, Faculty of medicine, King Khalid University,
(2) Lecturer of Biostatistics, High Institute of Public Health, Alexandria University,
(3) College of Medicine, King Khalid University

Corresponding author:
Shehata Farag Shehata
Assistant Pprofessor of community medicine,
Faculty of medicine, King Khalid University
Lecturer of Biostatistics, High Institute of Public Health, Alexandria University
Tel: +966532711294
Email: shehatafarag@yahoo.com

Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Shehata Farag Shehata et al. General Population Awareness Regarding Colorectal Cancer and its Determinants in Aseer region, Saudi Arabia. World Family Medicine. 2020; 18(10): 5-12 DOI: 10.5742/MEWFM.2020.93868

Abstract

Background: Colorectal cancer (CRC) is when malignant cells form in the large intestine or the rectum usually due to old age and lifestyle habits and rarely due to genetic factors, or other risk factors. Colorectal cancer (CRC) is considered to be the second cause of death all around the world. The incidence of colorectal cancer, as estimated by the cancer incidence report of Saudi Arabia in 2013 accounted for 11.9% of all cancers that were diagnosed in 2013 with males affected by 53.1% and females by 46.9%.

Aim: to assess population awareness regarding colorectal cancer and its risk factors in Aseer region, Saudi Arabia.

Methodology: A descriptive cross-sectional approach was used targeting all accessible population in Aseer region, southern Saudi Arabia. Data were collected from participants using an electronic pre-structured questionnaire. The tool covered participants' socio-demographic data, participants' medical and family history, awareness and practice regarding colorectal cancer and screening.

Results: A total of 513 participants completed the study survey. Participant's ages ranged from 18 to 75 years old with mean age of 27.3 ± 10.9 years. Exactly 383 (74.4%) participants had heard about colorectal cancer. About 55% of the participants agreed that early-stage colorectal cancer is curable and 204 (39.8%) agreed that early-stage colorectal cancer can be asymptomatic. Regarding screening methods, 45% of the participants were not aware of them while 48% told about colonoscopy. In total, good awareness regarding colorectal cancer was detected among very few portions of the participants. Awareness was significantly associated with middle ages and high level of education.

Conclusions: In conclusion, the study revealed that public awareness regarding CRC in Aseer region was poor especially for check-up timing and frequency. Also, check-up behaviour to screen for CRC was poor and the majority of the population recorded their need to improve their awareness level.

Key words: Colorectal cancer, cancer colon, population, awareness, practice, Risk factors

Background

Colorectal cancer (CRC) is considered to be the second cause of death all around the world. It is caused by uncontrolled irregular cell growth with the ability to regenerate and spread which harms the organ and the whole body [1]. Colorectal cancer is when malignant cells form in the large intestine or the rectum usually due to old age and lifestyle habits and rarely due to genetic factors. Risk factors include : obesity, tobacco smoking, lack of physical activity, inflammatory bowel disease, and dietary factors which include lack of fibre intake, consumption of processed meat and alcohol [2]. Colonoscopy is the gold standard for diagnosing colorectal cancer; other methods include flexible sigmoidoscopy, faecal occult blood test, and CT colonography [3].

The incidence of colorectal cancer as estimated by the cancer incidence report of Saudi Arabia in 2013 accounted for 11.9% of all cancers that were diagnosed in 2013 with 53.1% males affected and 46.9% of females [4]. Colorectal cancer is the most common cancer in males and third most common in females in Saudi Arabia with the median age around 60 years for men and 55 years for women with a death rate as estimated in 2004 by World Health Organization of 8.3%. Moreover, Saudi patients are more likely to present at a younger age and more advanced disease compared to western countries, thus colorectal cancer is a major concern to the health care system and the community [5, 6].

In a a study in Riyadh city in which 1,070 participants completed the survey the result was most participants believed that the screening should begin when the symptoms start (42.9%); 20% of participants believe that polyps are a risk factor for CRC,and the majority of educated persons answered correctly (less than 50% and 34% of all) that family history is a personal risk factor for CRC (5). A second study conducted at the outpatient department of a tertiary hospital in the western region of KSA to assess the awareness of colon cancer included 619 participants, whereby 55.3% of them agreed to do screening while the remaining wanted to do radiological screening by using barium. The conclusion of the study showed there is a decrease in awareness of colorectal screening that related to decreased individual knowledge not related to age and gender [7].

Methodology

A descriptive cross-sectional approach was used targeting all accessible population in Aseer region, southern Saudi Arabia. All those with ages of 18 years or more living in Aseer region were invited to participate in the survey. A total of 700 individuals received the study survey. Exactly 513 respondents completed the study questionnaire with a response rate of 73.3%. After obtaining permission from the Institutional ethics committee, data collection started. Data were collected from participants using electronic pre-structured questionnaire. The questionnaire was uploaded online using social media platforms by the researchers and their relatives during the period from 15th March till 30th of April 2020. All accessible and eligible population in the study setting were invited to fill in the attached tool. The researchers constructed the survey tool after an intensive literature review and expert's consultation. The tool was reviewed using a panel of 5 experts for content validity. Tool reliability was assessed using pilot study of 30 participants with reliability coefficient (α-Cronbach's) of 0.78. The tool covered the following data: participants' socio-demographic data like age, gender, residence, education, participants' family history of colorectal cancer, and participants' practice regarding screening for CRC. Awareness was assessed using 8 questions with multiple allowed answers for 3 of them.

Data analysis

After data were extracted, it was revised, coded, and fed into statistical software IBM SPSS version 22(SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed tests. P value less than 0.05 was considered statistically significant. For awareness items, each correct answer was scored one point and total summation of the discrete scores of the different items was calculated. A patient with a score less than 60% (21 points) of the maximum score was considered to have poor awareness while good awareness was considered if they had a score of 60% (22 points or more) of the maximum. Descriptive analysis based on frequency and percentage distribution was done for all variables including demographic data, awareness items and participants' practice. Cross tabluation was used to assess distribution of awareness according to participants' personal and medical data. Relations were tested using Pearson chi-square test.

Results

A total of 513 participants completed the study survey. Participant's ages ranged from 18 to 75 years old with mean age of 27.3 ± 10.9 years. Male respondents were 310 (60.4%) and 395 (77%) participants were from an urban area. Regarding education, 342 (66.7%) were university graduated and monthly income was averaged among 321 participants (62.6%). Family history for colorectal cancer was reported among 55 (10.7%) participants (Table 1).

Table 2 demonstrates distribution of public awareness regarding colorectal cancer. Exactly 383 (74.4%) participants had heard about colorectal cancer. About 55% of the participants agreed that early-stage colorectal cancer is curable and 204 (39.8%) agreed that early-stage colorectal cancer can be asymptomatic. Regarding risk factors of colorectal cancer, most identified by the study participants were alcohol abuse (61.2%; 314) followed by positive family history (47.6%; 244), low intake of fruits and vegetables (45.6%; 234), high intake of red and grilled meat (45.2%; 232), and high-calorie diet, particularly fat-rich (31.4%; 161). About symptoms, the most identified by participants were blood in stool (57.3%; 294) followed by strong, crampy abdominal pain (54.8%; 281), change in bowel habits (54.2%; 278), rectal bleeding (52.6%; 270), and bloating (46.6%; 239). Regarding screening methods,

45% of the participants were not aware of them while 48% referred to colonoscopy and 33.7% mentioned faecal occult blood test while Sigmoidoscopy was reported by 28.1% of the participants. Also, 104 (20.3%) selected the recommended age for starting colorectal cancer screening to be at 50 years or above and 36 (7%) of the participants reported it should be every three years. In total, good awareness regarding colorectal cancer was detected among 72 (14%) participants.

Table 4 demonstrates distribution of public awareness regarding CRC according to participants personal data. Good awareness was reported among 22.3% of those aged 20-29 years in comparison to 9.1% of those aged 40 years or more with recorded statistical significance (P=.001). Also, 17.8% of participants with university level of education had good awareness level compared to 8.3% of those who were at secondary level or less (P=.002). Exactly 36% of participants who had their information from medical staff had good awareness level compared to 1.6% of those who had no specific source (P=.001).

Table 1: Personal data of public participants in the study survey

Personal data	No	%
Age in years		
< 20 years	138	26.9%
20-29	229	44.6%
30-39	69	13.5%
40+	77	15.0%
Gender		
Male	310	60.4%
Female	203	39.6%
Residence		
Urban area	395	77.0%
Rural area	118	23.0%
Education		
Below secondary	24	4.7%
Secondary	147	28.7%
University/ more	342	66.7%
Monthly income		
Insufficient	48	9.4%
Just sufficient	321	62.6%
More than sufficient	144	28.1%
Family history of cancer colon		
Yes	55	10.7%
No	403	78.6%
Don't know	55	10.7%

Table 2: Distribution of public awareness regarding colorectal cancer in Aseer region, Saudi Arabia

Colorectal cancer awareness items		No	%
Heard about colorectal cancer?	Yes	383	74.7%
	No	130	25.3%
Early-stage colorectal cancer is curable	Yes	280	54.6%
	No	7	1.4%
	Don't know	226	44.1%
Early-stage colorectal cancer can be asymptomatic	Yes	204	39.8%
	No	39	7.6%
	Don't know	270	52.6%
Risk factors contributing to the development of colorectal cancer	Don't know	8	1.6%
	Low intake of fruit and vegetable	234	45.6%
	High intake of red and grilled meat	232	45.2%
	Poultry meat consumption	59	11.5%
	Alcohol abuse	314	61.2%
	High fluid intake	23	4.5%
	High-calorie diet, particularly fat-rich	161	31.4%
	Positive family history	244	47.6%
	Age above 50 years	176	34.3%
	Overweightness	153	29.8%
	Inflammatory bowel diseases	145	28.3%
	Intestinal infections	101	19.7%
	Smoking	94	18.3%
	High blood pressure	21	4.1%
	Sedentary lifestyle	24	4.7%
	Oral contraceptives	5	1.0%
	Use of painkillers	7	1.4%
	Superficial polyps in the colon	56	10.9%
Symptoms of colorectal cancer	Strong, crampy abdominal pain	281	54.8%
	Unintentional weight loss	232	45.2%
	Change in bowel habits	278	54.2%
	Weakness or fatigue	209	40.7%
	Frequent nausea, vomiting	172	33.5%
	High blood pressure	50	9.7%
	Elevated level of blood glucose	33	6.4%
	Bloating	239	46.6%
	Blood in stool	294	57.3%
	Fever	82	16.0%
	Dizziness	78	15.2%
	Poor appetite	168	32.7%
	A lump around the anus	171	33.3%
	Rectal bleeding	270	52.6%
Cancer colon screening methods	Faecal occult blood test	194	37.8%
	M2-PK isoenzyme test	84	16.4%
	Sigmoidoscopy	144	28.1%
	Colonoscopy	246	48.0%
	Don't know	205	40.0%
Recommended age to start screening for cancer colon	Above the age of 40 years	173	33.7%
	Above the age of 50 years	104	20.3%
	Above the age of 60 years	5	1.0%
	Don't know	231	45.0%
Frequency of undergoing cancer colon screening	Every 6 months	81	15.8%
	Annually	122	23.8%
	Biannually	38	7.4%
	Every three year	36	7.0%
	Don't know	236	46.0%

Table 3: Participants practice regarding CRC in Aseer region, Saudi Arabia

Practice regarding CRC screening	No	%
How often do you visit your doctor and specialists for check-up?		
Never	340	66.3%
Every 1-3 months	24	4.7%
Every 3 months	28	5.5%
Annually	47	9.2%
Every 2-5 years	74	14.4%
If recommended to have colonoscopy, what will you do?		
Will pay (own money) and have a test within a week	330	64.3%
Will wait for 6-8 months for free test	117	22.8%
Not prefer to have test at all	66	12.9%
Would you like to get more information about colorectal cancer screening?		
Yes	414	80.7%
No	99	19.3%

Figure 1. Source of information regarding colorectal cancer among population in Aseer region, Saudi Arabia

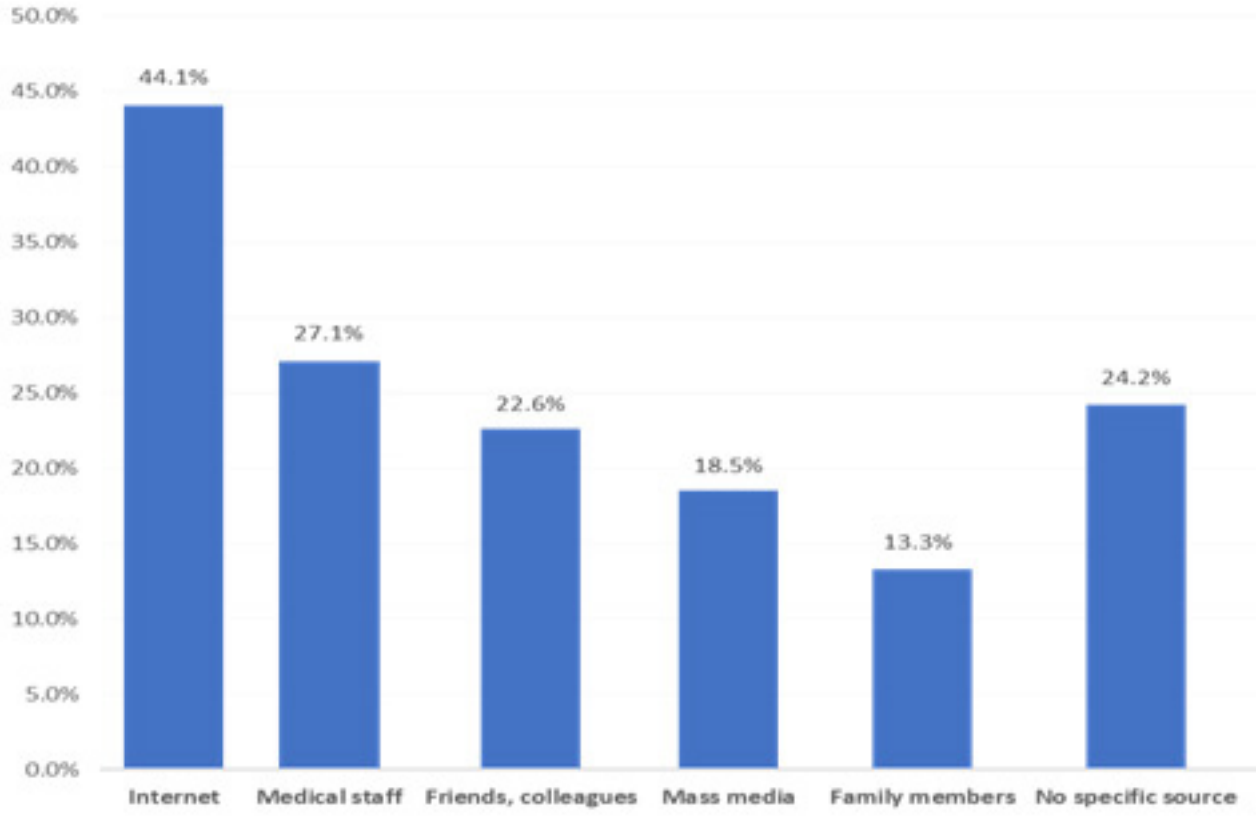

Table 4: Distribution of public awareness regarding CRC according to participants personal data

Personal data		Awareness level				P-value
		Poor		Good		
		No	%	No	%	
Age in years	< 20 years	130	94.2%	8	5.8%	.001*
	20-29	178	77.7%	51	22.3%	
	30-39	63	91.3%	6	8.7%	
	40+	70	90.9%	7	9.1%	
Gender	Male	274	88.4%	36	11.6%	.051
	Female	167	82.3%	36	17.7%	
Residence	Urban area	337	85.3%	58	14.7%	.439
	Rural area	104	88.1%	14	11.9%	
Education	Below secondary	22	91.7%	2	8.3%	.002*
	Secondary	138	93.9%	9	6.1%	
	University/ more	281	82.2%	61	17.8%	
Monthly income	Insufficient	44	91.7%	4	8.3%	.066
	Just sufficient	281	87.5%	40	12.5%	
	More than sufficient	116	80.6%	28	19.4%	
Family history of cancer colon	Yes	48	87.3%	7	12.7%	.400
	No	349	86.6%	54	13.4%	
	Don't know	44	80.0%	11	20.0%	
How often do you visit your doctor and specialists for check-up?	No	297	87.4%	43	12.6%	.204
	Yes	144	83.2%	29	16.8%	
Would you like to get more information about colorectal cancer screening?	Yes	354	85.5%	60	14.5%	.541
	No	87	87.9%	12	12.1%	
Source of information	Medical staff	89	64.0%	50	36.0%	.001*
	Friends, colleagues	89	76.7%	27	23.3%	
	Family members	60	88.2%	8	11.8%	
	Mass media	79	83.2%	16	16.8%	
	Internet	189	83.6%	37	16.4%	
	No specific source	122	98.4%	2	1.6%	

P: Pearson X^2 test
* P < 0.05 (significant)

Discussion

The current study aimed to assess public awareness regarding colorectal cancer (CRC) and its determinants in Aseer region, Saudi Arabia. The study findings were that nearly 3 out of each 4 heard about colorectal cancer which means that they may be exposed to a case or relative with the cancer but family history was positive among only 10% of the survey respondents. Early stage curability and clinical presentation was also reported by nearly half of the participants. Regarding risk factors, not all were detected correctly by the study participants as two thirds told about alcohol abuse and nearly half of the study respondents know about positive family history as one of the major risk factors. Dietary habits including low intake of fruits and vegetables besides high intake of fat rich food was selected as cancer colon risk factors by nearly 40% of the study participants. Old age (above 50 years), inflammatory bowel diseases and overweight were also selected by a considerable portion of the respondent population.

Considering symptoms, blood in stool, rectal bleeding, and crampy abdominal pain with change in bowel habits either diarrhoea or constipation were the most reported by the participants. General cancer symptoms and signs including weight loss, fever, loss of appetite were reported by nearly 30% of the survey respondents which means they were knowledgeable regarding the specific clinical features that aid proper seeking of medical care in case of having similar clinical presentations. The worst area in public awareness was for diagnostic and screening methods for colorectal cancer as nearly 40% said that they don't know about it but colonoscopy was reported by nearly half of the participants which may be by chance of linking cancer colon with colonoscopy, not actual awareness regarding this method. Also, public awareness regarding the proper age to start screening for cancer colon was questionable, which is a very important finding, as this item if well known by public will be the main motivator for screening behaviour helping in early detection and management of the cancer at its curable stages. Only 20% (1 out of each 5) reported for the age of 50 years or more. The situation was worse regarding frequency of screening for CRC as only 7% selected every 3 years which needs more effort to improve

public awareness regarding check-up related behaviour. In general, a very low percentage of the population had good awareness level regarding CRC (14%) which necessitates establishing intervention and health education policies. The awareness level was significantly higher among middle aged participants which may be due to their concern as old aged mostly are poorly educated and young aged participants don't care about the health problem. Also, females were more aware than males. This can be explained by that females by default seek screening for different cancers programs including breast cancer screening or cancer of cervix screening, so they are exposed to higher doses of information. Highly educated participants also showed higher awareness level besides they had their information from medical staff.

About public practice regarding check-up behaviour for CRC, two thirds of the study participants said that they never visited doctors or physicians for check-up purposes which is mostly due to their poor knowledge regarding this area. But also, two thirds reported that they may pay their own money to do the screening test if recommended but this misleading answer does not mean they have good awareness or educational attitude bur fear of a 'ghost' named cancer and its sequelae. The promising finding that may be used as a stimulator was their own perception of having poor awareness and readiness to get more information about colorectal cancer.

Sources of information reported by the study participants explain the poor awareness level as 24% of the respondents had no specific source of information regarding CRC while 27% had their information from physicians or nurses but the main bulk recorded internet as the main source of information (44%).

Poor knowledge especially for modifiable and non-modifiable risk factors has been found previously in different studies [8-12]. Improving public awareness can significantly affect healthy lifestyle practices; in turn these practices will participate in reducing cancer incidence as well as other chronic morbidities [13]. The community awareness may lead to increased healthy behaviours and that could assist in reducing the overall burden of ill-health on the population [14, 15]. Al-Maghrabi AA et al conducted a survey in Makkah, Saudi Arabia to assess the level of knowledge and awareness of colorectal cancer among the general population of Makkah residents [16]. About 85% of the participants had heard of colorectal cancer. However, nearly half (49.1%) of the participants had received information regarding colorectal cancer as part of their school curriculum. More than half of the students (53.5%) recognized that colorectal cancer can start without any obvious symptoms. More than one-third (37.9%) of participants believed that men are more likely than women to suffer from colorectal cancer, while almost one-third (29.4%) said they knew nothing about the symptoms, and 21.8% thought that men and women have an equal chance of contracting colorectal cancer. Regarding screening, nearly all participants (92.2%) had never had an early screening for tumours of the colon and rectum. Only 3.6% answered that they had undergone such screening.

Study limitation

Irrespective of results that coincide with previous similar studies' findings regionally and internationally the main limitation was using an online electronic questionnaire and including survey participants consecutively which may violate to some extent the generalizability of study results as those who are educated and have internet access will be the only participants. But due to the current situation of COVID-19 pandemic and lockdown, no other method was available to collect survey data.

Conclusions and Recommendations

In conclusion, the study revealed that public awareness regarding CRC in Aseer region was poor, especially for check-up timing and frequency. The highly educated middle-aged group who had their information from medical staff recorded the highest awareness level. Also, check-up behaviour to screen for CRC was poor and the majority of the population recorded their need to improve their awareness level. Researchers recommend initiating health education awareness programs to improve public screening programs to cover all the citizens irrespective of their demographics.

Ethical considerations:

The study was conducted in accordance with the Declaration of Helsinki, and the Ethics and Research Committee of the College of Medicine of King Khalid University approved the protocol. Approval number (ECM#2020-147)—(HAPO-06-B-001).

Conflict of interest:

There is not any conflict of interest associated with this manuscript to be declared.

Funding disclosure:

No funding received for this manuscript.

Acknowledgment:

We kindly appreciate the role all participants in the study.

References

1. Lambert PC, Dickman PW, Nelson CP, Royston P. Estimating the crude probability of death due to cancer and other causes using relative survival models. Statistics in medicine. 2010 Mar 30;29(7-8):885-95.

2. Siegel R, DeSantis C, Jemal A. Colorectal cancer statistics, 2014. CA: a cancer journal for clinicians. 2014 Mar;64(2):104-17.

3. Labianca R, Nordlinger B, Beretta GD, Brouquet A, Cervantes A. ESMO Guidelines Working Group. Primary colon cancer: ESMO Clinical Practice Guidelines for diagnosis, adjuvant treatment and follow-up. Annals of oncology. 2010 May 1;21(suppl_5): v70-7.

4. Al-Madouj AN, Alshahrani ZS, Alrawaji AI, Hayder MS, Al-Shridah MM, Al-Shamrani TH. Cancer Incidence Report Saudi Arabia 2013. Saudi Cancer Registry: Riyadh, Saudi Arabia. 2016.

5. Zubaidi AM, AlSubaie NM, AlHumaid AA, Shaik SA, AlKhayal KA, AlObeed OA. Public awareness of colorectal cancer in Saudi Arabia: A survey of 1070 participants in Riyadh. Saudi journal of gastroenterology: official

journal of the Saudi Gastroenterology Association. 2015 Mar;21(2):78.
6. Alsanea N, Abduljabbar AS, Alhomoud S, Ashari LH, Hibbert D, Bazarbashi S. Colorectal cancer in Saudi Arabia: incidence, survival, demographics and implications for national policies. Annals of Saudi medicine. 2015 May;35(3):196-202.
7. Khayyat YM, Ibrahim EM. Public awareness of colon cancer screening among the general population: A study from the Western Region of Saudi Arabia. Qatar medical journal. 2014 Jul 1;2014(1):3.
8. McCaffery K, Wardle J, Waller JO. Knowledge, attitudes, and behavioral intentions in relation to the early detection of colorectal cancer in the United Kingdom. Preventive medicine. 2003 May 1;36(5):525-35.
9. Yardley C, Glover C, Allen-Mersh TG. Demographic factors associated with knowledge of colorectal cancer symptoms in a UK population-based survey. Annals of the Royal College of Surgeons of England. 2000 May;82(3):205.
10. Robb K, Stubbings S, Ramirez A, Macleod U, Austoker J, Waller J, Hiom S, Wardle J. Public awareness of cancer in Britain: a population-based survey of adults. Nature Precedings. 2009 Oct 1:1-.
11. Hewitson P, Glasziou PP, Irwig L, Towler B, Watson E. Screening for colorectal cancer using the faecal occult blood test, Hemoccult. Cochrane Database of Systematic Reviews. 2007(1).
12. Atkin WS, Edwards R, Kralj-Hans I, Wooldrage K, Hart AR, Northover JM, Parkin DM, Wardle J, Duffy SW, Cuzick J. UK Flexible Sigmoidoscopy Trial Investigators. Once-only flexible sigmoidoscopy screening in prevention of colorectal cancer: a multicentre randomised controlled trial. The Lancet. 2010 May 8;375(9726):1624-33.
13. Sanderson SC, Waller J, Jarvis MJ, Humphries SE, Wardle J. Awareness of lifestyle risk factors for cancer and heart disease among adults in the UK. Patient education and counseling. 2009 Feb 1;74(2):221-7.
14. Power E, Simon A, Juszczyk D, Hiom S, Wardle J. Assessing awareness of colorectal cancer symptoms: measure development and results from a population survey in the UK. BMC cancer. 2011 Dec;11(1):1-0.
15. Hawkins NA, Berkowitz Z, Peipins LA. What does the public know about preventing cancer? Results from the Health Information National Trends Survey (HINTS). Health Education & Behavior. 2010 Aug;37(4):490-503.
16. Al-Maghrabi AA. Assessment of the knowledge and awareness of colorectal cancer among general population of Makkah: a survey-based study. screening. 2016 Nov;4(4):168-75.