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Assessment of Practice of screening, Knowledge about Risk Factors, Perceived Barriers and Attitude of Colorectal Cancer among Tabuk Population, Saudi Arabia-2018

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Abstract

Background: In Tabuk region, colorectal cancer (CRC) ranked the first among male and the third among female. Therefore, the current study was carried out to investigate the extent of both knowledge and attitude toward CRC risk factor and screening among specific age group (31 and above) from both males and females through conducting self-administrated questionnaire. In addition, the study aimed at identifying the practice of CRC screening tests through fecal occult blood testing (FOBT), flexible sigmoidoscopy (FS) and colonoscopy, which are the main tests in cancer screening programme in Saudi Arabia. The study also identified perceived barrier of CRC screening of those who aged 51 year and above. **Methods:** We have conducted a descriptive cross-sectional study in Tabuk city population, Saudi Arabia. A self-administered questionnaire, about colorectal cancer was filled by participants. A 33-item instrument was developed based on an earlier studies and instruments used in other prior studies. **Results:** Participants were classified to three categories according to age. Male and female groups contributed to (26.3%) and (73.6%) respectively. Mostly noticed perceived barriers for doing FOBT were: because of no symptoms and because I do not know if I have to do it, and the similar results documented for doing flexible sigmoidoscopy and colonoscopy. Participants were more likely not to be familiar with CRC screening. **Conclusion:** Many misconceptions regarding cancer and its development were evident in the discussions. Collective efforts are needed to broadcast this knowledge through media and public schools, with a hope that it will alter the current aggressive disease presentation in Saudi Arabia.

Keywords: Colorectal Cancer, Screening, Risk Factors, Perceived Barriers, Attitude.

Introduction

The second most popular type of cancer among all ages from both females and males in the kingdom of Saudi Arabia is colorectal cancer (CRC) according to the most recent report by cancer registry in Saudi Arabia 2013. In Tabuk region ranked the first among male and the third among female [(1)]. In Saudi Arabia, recently, clinical practice guidelines for CRC has been published [(2)] . which is undoubtedly an excellent step in controlling CRC. The guideline presents recommendations on the age of initiating and stopping screening for CRC in average-risk individuals. It also contrasts different screening modalities (fecal occult blood testing (FOBT), flexible sigmoidoscopy, colonoscopy, or barium enema), which is an important issue at this stage in which a nationwide CRC screening program is being considered. FOBT is a self-administered test that examines fecal matter for blood, while FS screening involves an examination of the distal colon and rectum to detect and remove polyps at the pre-cancerous stage [(3).] Despite the national recommendations and positive evidence, CRC screening has not been widely adopted by the Saudi public, and a majority of people are not adherent to the guidelines. Screening can be effective at detecting cancer at treatable stages, but a large proportion of people at risk have not been screened or are not screened regularly, as recommended by national guidelines. When detected in early stages, CRC is highly treatable with 5-year survival rates as high as 90%; however, many cases are not diagnosed until later stages, when survival rates decline sharply [(4).] Empirical evidence suggests that both primary (*e.g.*, diet and physical activity) and secondary (*e.g.*, screening and early detection) prevention strategies are effective means of reducing CRC incidence and mortality [(5)]. Secondary prevention through regular screening is valuable because CRC can have a lag period during which the disease is detectable but asymptomatic [(6)]. Therefore, the current study was carried out to investigate the extent of both knowledge and attitude toward CRC risk factor and screening among specific age group (31 and above) from both males and females through conducting self-administrated questionnaire. In addition, the study aimed at identifying the practice of CRC screening test through Fecal Occult Blood tests (FOBT), flexible sigmoidoscopy (FS) and colonoscopy, which are the main tests in cancer screening programme in Saudi Arabia. The study also identified perceived barrier of CRC screening

of those who aged 51 year and above. Among the factors that account for inadequate levels of CRC screening, barriers perceived and encountered by patients figure prominently. These include the failure of physicians to recommend screening, gaps in knowledge, fear, embarrassment, pain and a lack of symptoms [7-13].

METHODS

We have conducted a descriptive cross-sectional study in Tabuk city population, Saudi Arabia. The study was conducted during the period from May to September 2018. The participants were selected by random sampling. Sampling was stratified for the different geographical areas of the city. The sample size was calculated based on the formula (n= Z1-α2 P (1-P)/d2), where n= sample size = 384,14,15 Z= standard normal variate = 1.96 (at 5% type I error, p=0.05), P= expected proportion = 50%, and d= precision error = 5%. Additional 20 % was added to cover the missing data. The total sample obtained was 460. All the pupils were approached to obtain the desired sample size. 270 respondents were excluded because they were below 30 years old, and the final total sample were 190. A self-administered questionnaire, about colorectal cancer was filled by participants. A 33-item instrument was developed based on an earlier studies and instruments used in other prior studies [8, 16-18]. A letter that explains the objectives of the study and asks for participants consent was sent with the questionnaire. The questionnaire requires information about Knowledge, risk factors, perceived barriers, attitude, and screening practice of colorectal cancer.

The questionnaire responses were analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23. Categorical variables were described by frequencies and percentages. Descriptive analysis involving Chi-square test was used to test significance of association between categorical variables. The level of significance was set at $P< 0.05$.

The research was approved by the local Research Committee of the Faculty of Medicine, University of Tabuk.

Results

Table 1 shows general characteristics of the participants. Participants classified to three categories according to age: from 31 to 40 years old, from 41 to 50 years old and 51 years old and above. Male and female groups contributed to (26.3%) and (73.6%) respectively. The majority of participants were university graduates (83.1%), about (14.7%) were secondary education, and (2.1%) were bellow secondary education.

Table 2 shows Frequency of perceived barriers of screening methods of CRC (FOBT, Colonoscopy) among participants. Participants committed that they did not do FOBT because of the following barriers: they do not know if they have to do it (32.1%), because there is no symptoms (37.3%), because it is not recommended by a doctor (23, 6%), there is no reason (18.9%), and because of carelessness and procrastination (18.9%). Participants committed that they did not do colonoscopy because of the following barriers: they do not know if they have to do it (27.3%), because there were no symptoms (35.2%), because it was not recommended by a doctor (26.3%), there was no reason (18.4%), and because of carelessness and procrastination (16.8%) and only (1.1%) because they thought it was not necessary.

Table 3 shows perceived barriers in relation to participants who did not do FOBT among whom above fifty years. Participants who were above age 50 were 51. Only one participant did FOBT among them. Participants committed that they did not carried out FOBT because of the following barriers: there was no symptoms (36%) (p=0.456), because they did not know if they have to do it (32%) (p=0.495), not recommended by a doctor (20%) (p=0.618), because of carelessness and procrastination (8%) (p=0.768), and because of there was no reason (8%) (p=0.768).

Table 4 shows perceived barriers in relation to participants who did not do colonoscopy among whom above fifty years. Participants who were above age 50 were 51. Only six participants did colonoscopy among them. Participants committed that they did not carried out colonoscopy because of the following barriers: there was no symptoms (33.3%) (p=0.422), because they do not know if they have to it (20%) (p=0.104), not recommended by a doctor (20%) (p=0.104), because of carelessness and procrastination (6.7%) (p=0.392), and because of there was no reason (6.7%) (p=0.392).

Table 5 shows Knowledge, attitudes, and believes of participants within age groups**.** Knowledge of participants about risk factors of CRC were varied among different risk factors and age groups. All age groups were aware

about smoking as a risk of CRC. Participants who agreed that too much meat increases the risk of CRC among the age groups 31 to 40 year, 41 to 50, and 51 year and above, were (26.5%), (39.4%), and (47.1%) respectively (p=0.000). Participants who agreed that microwaves used to reheat food increases the risk of CRC among the age groups 31 to 40 year, 41 to 50, and 51 year and above, were (60.3%), (47.9%), and (52.9%) respectively (p=0.535). Participants who agreed that obesity or overweight increases the risk of CRC among the age groups 31 to 40 year, 41 to 50, and 51 year and above, were (51.5%), (56.3%), and (58.8%) respectively (p=0.006). Knowledge of participants about screening for CRC were varied among different risk factors and age groups. Participants were more likely not to be familiar with CRC screening. those whom never heard about FOBT among the age groups 31 to 40 year, 41 to 50, and 51 year and above, were (70.6%), (62%), and (70.6%) respectively (p=0.001), and those whom never heard about colonoscopy among the age groups 31 to 40 year, 41 to 50, and 51 year and above, were (55.9%), (59.2%), and (70.6%) respectively (p=0.003). Participants showed good attitude toward detection and screening of CRC. About (97%) of participants in average agreed to conduct an early detection test for CRC if doctor recommended (p=0.138), and about (82.3%) in average agreed to have an early CRC screening test even if they have no symptoms (p=0.022). In average, (77.6%) of participants believe that CRC is serious if found late (p=0.621).

Table 1: General characteristics (n=190)

Character		
Gender	Male (n (%))	50 (26.3%)
	Female (n (%))	140 (73.6%)
Age	From 31 to 40 years old (n (%))	68 (35.7%)
	From 41 to 50 years old (n (%))	71 (37.3%)
	50 years old and above (n (%))	51 (26.8%)
Education	Below secondary school (n (%))	4 (2.1%)
	Secondary school (n (%))	28 (14.7%)
	Bachelor (n (%))	158 (83.1%)
Income	Poor (n (%))	29 (15.2%)
	Average (n (%))	153 (80.5%)
	High (n (%))	8 (4.2%)

Table 2: Frequency of perceived barriers for screening methods of CRC (FOBT, Colonoscopy)

What prevents you from early doing FOBT for screening of CRC?	Total (n=190)	%
There is no reason	36	18.9%
Because of carelessness and procrastination	36	18.9%
Because I do not know if I have to do it	61	32.1%
Because it is not recommended by a doctor	45	23.6%
Because it is too embarrassing	9	4.7%
Because there is no symptoms	71	37.3%
Because I do not want to know if I have CRC	2	1.1%
What prevents you from early doing Colonoscopy for screening of CRC?	**Total (n=190)**	**%**
There is no reason	35	18.4%
Because of carelessness and procrastination	32	16.8%
Because I do not know if I have to do it	52	27.3%
Because it is not recommended by a doctor	50	26.3%
Because I do not think it is necessary	2	1.1%
Because it is too embarrassing	12	6.3%
Because there is no symptoms	67	35.2
Because I do not want to know if I have CRC	3	1.5%
Because it is too painful	6	3.1%

Abbreviations: FOBT, fecal occult blood test; CRC, colorectal cancer.

Table 3: Frequency of perceived barriers in relation to participants above age fifty-year-old and who did not do FOBT

Perceived barriers	Participants did not do FOBT	P-Value

	n=50 (%)	
There is no reason to do FOBT	4(8%)	0.768
Because of carelessness and procrastination	4(8%)	0.768
Because I do not know if I have to do it	16(32%)	0.495
Because it is not recommended by a doctor	10(20%)	0.618
Because there is no symptoms	18(36%)	0.456

Table 4: Frequency of perceived barriers in relation to participants above age fifty-year-old and who did not do colonoscopy

Perceived barriers	Participants did not do colonoscopy or flexible sigmoidoscopy (n=45)	P-Value
There is no reason	3(6.7%)	0.392
Because of carelessness and procrastination	3(6.7%)	0.392
Because I do not know if I have to do it	9(20%)	0.104
Because it is not recommended by a doctor	9(20%)	0.104
Because of there are no symptoms	15(33.3%)	0.422

Table 5: Knowledge, attitudes, and believe within age groups(Knowledge\Attitude\Believe)

	Age			
	31 - 40 year (n=68)	41 - 50-year (n=71)	Above 50 year (n=51)	P- value
KNOWLEDGE				
Too much meat increases the risk of CRC	18(26.5%)	28(39.4%)	24(47.1%)	0.001
Microwaves used to reheat food increase the risk of CRC	41(60.3%)	34(47.9%)	27(52.9%)	0.535
Smoking increases the risk of CRC	65(95.6%)	69(97.2%)	51(100%)	0.469
Obesity or overweight increases the risk of CRC	35(51.5%)	40(56.3%)	30(58.8%)	0.006
Never heard about FOBT	48(70.6%)	44(62%)	36(70.6%)	0.001
Never heard about flexible sigmoidoscopy or colonoscopy	38(55.9%)	42(59.2%)	36(70.6%)	0.003
ATTITUDE				
Want to know if they have CRC	64(94.1%)	69(97.2%)	43(84.3%)	0.009
Agree to have an early cancer screening test if you do not have symptoms of CRC	61(89.7%)	56(78.9%)	40(78.4%)	0.022
It is possible to conduct an early detection test for CRC if doctor recommended	66(97.1%)	69(97.2%)	49(96.1%)	0.138
BELIEVE				
Believe CRC is serious if found late	51(75%)	55(77.5%)	41(80.4%)	0.621

Abbreviations: FOBT, fecal occult blood test; CRC, colorectal cancer.

Discussion

Barriers experienced by patients influence the uptake of colorectal cancer (CRC) screening. In the present study, that mostly noticed perceived barriers for doing fecal occult blood testing (FOBT) because of no symptoms, because they do not know if I have to do it, and because this step is not recommended to be done by doctor, and the similar results documented for doing flexible sigmoidoscopy and colonoscopy. Another study demonstrated that participants did not attended screening services when they noticed symptom [(19)]. A study showed that participants not aware if they have to do CRC screening test were (7.9%), also only (1.6%) were because it was not recommended by a physician [(17)]. In this study, (1.5%) committed not to do flexible sigmoidoscopy and colonoscopy because they do not want to know if they have CRC, another study, fear of a cancer diagnosis was a common barrier for doing flexible sigmoidoscopy for CRC screening [(19)].In this study, (5.5%) in average, found it was too embarrassing to do CRC screening tests, higher results reported in other study (22%) [(8)]. In the present study, mostly noticed perceived barriers among participants above age 50 and did not do FOBT because of no symptoms, because they do not know if they have to do it, and because it was not recommended by physician, and the similar

barriers in whom did not do flexible sigmoidoscopy and colonoscopy . Another study showed that the most frequently cited reasons for never doing a FOBT for CRC screening were: lack of physician recommendation (36.6%), and lack of symptoms (30.7%), and those of the flexible sigmoidoscopy were: lack of physician recommendation (35.8%), and lack of symptoms (33.5%)[20]. The present study showed that participants above age 50 more were aware than participants younger the 50, similar results found in a study where participants under 45 years old knew significantly less about the risks of CRC screening than participants aged 45 to 64 (P , 0.001) [21]. In total, all participants were less aware about the risk factors: unhealthy diet (p=0.000), and obesity (0.006), and about two thirds of all participants above age 50 never heard about FOBT, flexible sigmoidoscopy, and colonoscopy. Participants showed good attitude toward early detection, and early screening for CRC.

In conclusion, many misconceptions regarding cancer and its development were evident in the discussions. However, participants were willing to follow the recommendations of physicians. This study highlighted the importance of increasing the awareness and knowledge about CRC, risk factors, and screening methods. Increasing screening may require authorized supports to help physicians to teach patients about CRC testing and/or intuitional interventions to convince patients and justification about the rationale for CRC screening tests.

References

1.http://www.chs.gov.sa/En/HealthRecords/CancerRegistry/Pages/CancerRegistryRecords.

2. Alsanea N, Almadi MA, Abdul Jabbar AS, Alhomoud S, Alshaban TA, Alsuhaibani A *et al.* (2006):National Guidelines for Colorectal Cancer Screening in Saudi Arabia with strength of recommendations and quality of evidence. Ann Saudi Med.,35:189–95.

3. Thompson MR, Steele RJC, Atkin WS (2006): Effective screening for bowel cancer: a United Kingdom perspective. Dis Colon Rectum ,49:895–908.

4. **American Cancer Society (2005):** Colorectal Cancer Facts and Figures, special edition available on :https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/colorectal-cancer-facts-and-figures/colorectal-cancer-facts-and-figures-special-edition-2005.pdf

5. Pinto B, Eakin E and Maruyama N (2000): Health behavior changes after a cancer diagnosis: what do we know and where do we go from here? Ann. Behav. Med., 22: 38–52.

6. Winawer S , Zauber A, Ho M *et al.* (1993). Prevention of colorectal cancer by colonoscopic polypectomy. *New England Journal of Medicine*, *329*(27): 1977-1981.

7. Vernon SW(1997): Participation in colorectal cancer screening: a review**.** J Natl Cancer Inst., 89(19):1406–22.

8. James AS, Campbell MK, Hudson M. (2002): Perceived barriers and benefits to colon cancer screening among African Americans in North Carolina: how does perception relate to screening behavior? Cancer Epidemiol Biomarkers Prev., 11:529–534.

9. Reding DJ, Lapper KA, Krueger M, Kolehouse BL, Steneil D, Leer RA (1997): Cancer screening and prevention in rural Wisconsin: the greater Marshfield experience. Wisconsin Medical Journal, 96 (8):32–7.

10. Beeker C, Kraft JM, Southwell BG, Jorgensen CM (2000): Colorectal cancer screening in older men and women: qualitative research findings and implications for intervention. J Community Health, 25 (3):263–78.

11. Hsia J, Kemper E, Kiefe C *et al.* (2000): The importance of health insurance as a determinant of cancer screening: evidence from the Women's Health Initiative. Prev Med., 31:261–70.

12. Cokkinides VE, Chao A, Smith RA, Vernon SW, Thun MJ. (2003): Correlates of underutilization of colorectal cancer screening among U.S. adults, age 50 years and older. Prev Med., 36(1):85–91.

13. Zapka JG, Puleo E, Vickers-Lahti M, Luckmann R (2002): Healthcare system factors and colorectal cancer screening. Am J Prev Med., 23:28–35.

14.https://www.surveymonkey.com/mp/sample-size-calculator

15. Kingdom of Saudi Arabia. Available on **https://www.stats.gov.sa/sites/default/files/en-census31-prim- 01_1.pdf**

16. Nancy C, Rosario F, Terry C *et al.* (2004): Colorectal Cancer Screening Knowledge, Attitudes, and Beliefs Among Veterans: Does

LiteracyMake a Difference? Journal of Clinical Oncology, 22(13): 2617-22.

17. Resa M, Kelly J, Anton J, Steven H (2010): Patient-Reported Barriers to Colorectal Cancer Screening:A Mixed-Methods Analysis. Am J Prev Med., 38(5): 508–516.

18. Francois F, Elysée G, Shah S, Gany F (2009): Colon cancer knowledge and attitudes in an immigrant Haitian community.Journal of immigrant and minority health,11(4):319-25.

19. Austin K, Power E, Solarin I *et al.* (2009): Perceived barriers to flexible sigmoidoscopy screening for colorectal cancer among UK ethnic minority groups: a qualitative study. Journal of Medical Screening, 16(4): 174-179.

20. RL H, Stone S, Sussman A, Bruggeman E (2006): Barriers to Colorectal Cancer Screening: Physician and General Population Perspectives, New Mexico, Preventing chronic disease: public health research, practice and policy,8(2): 1-11.

21. Bajracharya S, Wigglesworth J (2013): Colorectal cancer screening: Knowledge, perceived benefits and barriers, and intentions among college and university employees. American Journal of Health Education, 44(2): 88-95.