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Research Article

**AWARENESS OF COLON CANCER AND ITS
SCREENING AMONG HIGHLY EDUCATED
TEACHERS IN KING KHALED UNIVERSITY IN ABHA,
SAUDI ARABIA**

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Abstract

Introduction: Cancer is defined as abnormal cellular growth. Colorectal cancer is the fourth most prevalent type cancer in males and the third most common cancer in females worldwide.

Methodology: Objective: The current study aims at screening the level of knowledge of non-medical staff at KKU.

Design: Cross sectional survey was done. **Sample:** A total sample of 128 non-medical staff were included in the survey after their approval with completed returned questionnaires.

Results: Most of the sampled staff were Saudi with nearly equal number of both males and females. About 65% of the screened staff previously heard about cancer colon and only 36% know about its screening methods. Only 25.6% of the staff were knowledgeable about cancer colon nature, risk factors and screening tools. Age, having one of the first relatives with cancer colon and thinking that cancer colon of high incidence in Saudi Arabia were the most important determinants for knowledge level.

Conclusions and recommendations: The non-medical staff lack knowledge regarding all aspects of cancer colon specially importance of screening and screening methods due to lack of health education sessions and educational posters, notes or even lectures.

Key words: Colon Cancer ; Screening In Saudi Arabia ; Awareness ; Highly Educated ; King Khalid University

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INTRODUCTION:

Cancer is defined as excessive division of body cells without stopping and spread into surrounding tissues. [1-3] normally, human cells grow and divide to form new cells as the body needs them. When cells grow old or become damaged, they die, and new cells take their place. Cancer can start at any site in the human body, which is formed of trillions of cells of these sites gastro intestinal tract. [3,4]

Cancer is one of the leading causes of morbidity and mortality worldwide, with approximately 14 million new cases in 2012. (5) Cancer is the second leading cause of death globally and was responsible for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer. [6]

Colorectal cancer is the fourth most prevalent type cancer in males and the third most common cancer in females worldwide and significant international variations in the distribution of colorectal cancer have been observed. [7-9] In the United States, results in over 61 000 deaths each year. [7] In UK 2013, there were 41,112 new cases of bowel cancer: 22,957 (56%) in men and 18,155 (44%) in women. Regular colorectal cancer screening is one of the most powerful weapons against colorectal cancer. [10] In Western region of Saudi Arabia There was a deficiency of knowledge of colorectal cancer (CRC) screening influenced by an individual's level of education, yet unrelated to age or gender. a cohort study among Irish patients estimated that most of them (91%) were willing to pay 300 euros for a prompt colonoscopy if recommended by their physician while 7% opted to wait 6 months for a free colonoscopy. [11]

Among general US population, the term 'colonoscopy' was recognized by 80% of participants. However, there was a positive correlation between media usage and having a colonoscopy. Reasons for not having a colonoscopy were 'no reason' (29%), 'doctor didn't order it' (24%), and 'didn't know I needed the test' (15%). Personalized materials were the preferred media for receiving cancer-related information. [12]

Efforts are usually done to reduce colon cancer mortality and morbidity by focusing primarily on early detection and treatment which means high survival rate. The improving of awareness regarding cancer overall and cancer colon in depth is one of the methods that help in reducing morbidity and mortality as it helps in improving population awareness regarding its incidence, risk factors, signs and symptoms and also its screening methods for early detection. [12-15].

Although screening is an important method for early diagnosis, it does not cover all cases or age groups or places, in addition, many cases of cancer colon will present with symptoms in primary care or elsewhere. [16]

Several studies have shown a decrease in cancer mortality through early detection and advances made in its treatment. [17–20] In Saudi Arabia, despite the unavailability of an organized national screening program there exist several programs / activities such as: The public awareness of breast cancer, through lectures, in a major hospital in Riyadh, [22] a year-round, well-designed public awareness program, and the first organized population-based screening mammography program in the Al Qassim region. [22]

The study team aimed at screening the awareness level of the non-medical staff to cover wide range of variety in population and to assess the weakness areas regarding the awareness of cancer colon flag signs and symptoms, screening methods aiming at finding preliminary way for improving awareness and help in early diagnosis of expected cases.

METHODOLOGY:**Study setting**

The study will be conducted at non-medical faculties of King Khaled University. King Khalid University is a rapidly growing institution of higher education in Saudi Arabia. With around 70,000 students, it is one of the biggest centers of learning in the Middle East region with a reputation as a major provider of both further and higher education. is a public university, distributed over several towns in the 'Asir Province in south-west Saudi Arabia, including Abha and al-Namas.

Study design

Descriptive cross- sectional survey.

Population

The study targeting all accessible staff at the non-medical fields who agreed to participate in the study during the period. Staff at medical field (medicine, pharmacy, dentist or nursing) were excluded from the study.

Sample size

All accessible staff at the different non-medical faculties were invited to complete the questionnaire. The questionnaire was distributed for about 183 staff working at different colleagues of King Khaled University. Only 150 questionnaires were recollected among which 128 questionnaires with complete data with response rate of 82% and completeness rate of 70%.

Sampling technique

Two stage cluster sample was used as on first stage five non-medical faculties at King Khaled University were randomly included using computer-based software with starting random digit. At second phase, all accessible staff were invited to participate in the study and after they agree, a questionnaire was given to complete its items and recollected after 2 hours.

Tool of the study

A pre-designed validated self-administered questionnaire was used for data collection. The questionnaire items were developed and reviewed by the researchers after reading many literature reviews. Three expert staffs reviewed the tool for capturing its content validity and any suggestions for corrections, addition or subtractions were done. The questionnaire divided into three parts. First part cover bio-demographic data of the participants including age, gender, nationality, family history regarding cancer colon. The second part covers general knowledge regarding cancer colon as if they previously heard about this type of cancer, symptoms risk factors. The third part contains their awareness regarding importance and methods of screening for cancer colon and also if they previously did screen for this cancer or not.

Statistical analysis

After data were collected it was revised, coded and fed to statistical software IBM SPSS version 20. The given graphs were constructed using Microsoft excel software.

All statistical analysis was done using two tailed tests and alpha error of 0.05. P value less than or equal to 0.05 was considered to be statistically significant.

Regarding scoring system, each correct answer was given 1 point score then the items discrete scores were summed together to have an overall knowledge score. All scores were transformed into score % as follow:

Score % = (the observed score -1/ the maximum score) x 100. Then score % for knowledge was categorized into:

Unsatisfactory knowledge: If Score % \leq 60%

Satisfactory knowledge: If Score % $>$ 60%

Descriptive statistics: frequencies and percent were used to describe the frequency of each category for categorical data. Mean with standard deviation was used to describe scale data. Chi square test / Mont Carlo exact test and Fishers exact test were used to test for association between knowledge level and sample characteristics if there were many small expected values. To identify the most important determinants of the sample knowledge level multiple

stepwise logistic regression was used and adjusted odds ratio was identified to determine the magnitude of effect.

RESULTS:

The sample included all teachers in King Khaled University at the non-medical field who agreed to participate in the study after explaining the objectives of the research. The response rate was about 74% except for engineers as only two of them has completed the questionnaire so they were added to information technology staff.

About half of the participants were male (52.3%) and others were females (Table 1) and with age groups ranged from 25 years up to 50 years with mean age of 37.6 ± 8.7 years. Most of the samples staff were Saudi (88.3%) and 34.4% were teaching Islamic culture, 11.7% were at information technology and computer field while 43% were at different other fields (Business Administration, Geography, History). About 37% of the sample think that cancer colon of average incidence at Saudi Arabia while 50.8% don't know about incidence. Among included staff only 7% experienced cancer colon among relatives of the first degree.

In table 2 it is clear that about two thirds of the sample staff (64.8%) heard about cancer colon. By asking about symptoms 47.7% told about abdominal pain followed with presence of blood in stool (37.5%), change in bowel habits (35.9%) and nausea and vomiting (28.1%) while about 41% don't know about any symptoms. Regarding identified risk factors of cancer colon, having positive family history was the most recorded risk factor (39.1%) and inflammatory bowel disease which was mentioned by 31.3% of the staff while 19.5% told about colonic polyps and 45.3% don't know about cancer colon risk factors.

With regard to awareness of screening for cancer colon (Table 3), only one third of the sample (36.7%) previously heard about cancer colon screening. As for screening methods, 28.9% of the sampled staff told about colonoscopy and 18% know about Sigmoidoscopy and fecal occult test while about 7% said for CT scan and X-Ray but 64.8% of the staff don't know about any screening method. When the included staff were asked if it possible to be cured from colon cancer 66.4% said yes while 25.8% said no. When they asked about the appropriate age for doing screening by doctor only 10.2% told about the correct age which is at the age of 50 years.

Regarding the actual behaviour of the included staff regarding screening for cancer colon it was found that only 12.5% have done screening previously and the main cause behind not doing screening was they perception for no need as no complain while fear was the cause among 19.6% of those who did not do screening (Figure 1).

Generally, one quarter (25.8%) of the sampled staff had satisfactory knowledge regarding cancer colon (Figure 2). The most knowledgeable age group were those above 50 years (40% have satisfactory level of knowledge) followed with those who aged 40-50 years while young age was of the lowest level of knowledge (10.3%) with statistically significant differences ($P=0.048$). Age, specialty and nationality showed no significant association with level of knowledge while 44.4% of those who think that cancer colon with high incidence rate were of satisfactory level of knowledge compared to 18% of

those who have idea about incidence rate with statistically significant difference ($P=0.043$) (Table 4).

On including all studied factors to identify the most important determinants of staff knowledge level using logistic regression model only age, high incidence of cancer and having first degree relative with cancer colon were significantly identified determinants keeping all other factors constant (Table 5). As for age the increase in age by one year was associated with increased level of knowledge by about 13% ($OR=1.13$; 95% CI 1.02-1.63). Considering thinking about high incidence rate those who think that cancer colon of high incidence rate has 50% more knowledge level than others ($OR=1.5$; 95% CI 1.01-9.65). Staff with a relative with cancer colon recorded 78% more knowledge score than others without ($OR= 1.78$; 95% CI 0.97-10.2).

Table (1): Bio-demographic characteristics of teachers in King Khaled University staff, King Khaled University, 2017

Bio-Demographic data		No	%
Age in years	25-	29	22.7%
	30-	48	37.5%
	40-	36	28.1%
	50+	15	11.7%
Mean \pm SD		37.6 \pm 8.7	
Sex	Male	67	52.3%
	Female	61	47.7%
Specialty	Language & translation	14	10.9%
	Computer sciences/ engineer	15	11.7%
	Islamic culture	44	34.4%
	Others (Business Administration , Geography , History)	55	43.0%
Nationality	Saudi	113	88.3%
	Non-Saudi	15	11.7%
Incidence of colon cancer	High	9	7.0%
	Average	47	36.7%
	Rare	7	5.5%
	Don't know	65	50.8%
Have colon cancer	Yes	1	.8%
	No	127	99.2%
Cancer at first grade relative	Yes	9	7.0%
	No	119	93.0%

Table (2): Distribution of King Khaled University staff general knowledge about cancer colon, King Khaled University, 2017

Cancer colon general knowledge items		No	%
Heard about colon cancer	Yes *	83	64.8%
	No	45	35.2%
Symptoms of cancer colon	Abdominal pain *	61	47.7%
	Change in the bowel habits *	46	35.9%
	Nausea and vomiting *	36	28.1%
	Yellow discoloration of the eyes and skin	11	8.6%
	Presence of blood in stool *	48	37.5%
	Does not have any symptoms	1	.8%
	Don't know / not heard	53	41.4%
Risk factors of cancer colon	Smoking *	33	25.8%
	Inflammatory bowel disease *	40	31.3%
	Family history of colon cancer *	50	39.1%
	Colon polyps *	25	19.5%
	Don't know / not heard	58	45.3%

* Correct answer

Table (3): Distribution of King Khaled University staff awareness regarding cancer colon screening, King Khaled University, 2017

Cancer colon screening knowledge items		No	%
Heard about early screening	Yes *	47	36.7%
	No	81	63.3%
Screening methods	Sigmoidoscopy and fecal occult test *	23	18.0%
	Colonoscopy *	37	28.9%
	X-ray of abdomen *	9	7.0%
	Ultrasound	8	6.3%
	CT scan *	10	7.8%
	Barium meal enema *	17	13.3%
	Don't know / not heard	83	64.8%
It possible to be cured from colon cancer	Don't know	33	25.8%
	Yes *	85	66.4%
	No	10	7.8%
When doctors do screen for colorectal cancer	At the onset of symptoms	41	32.1%
	At the age of 20 years	5	3.9%
	At the age of 50 years *	2	10.2%
	at the age of 70 years	2	1.6%
	I don't know.	67	52.4%

* Correct answer

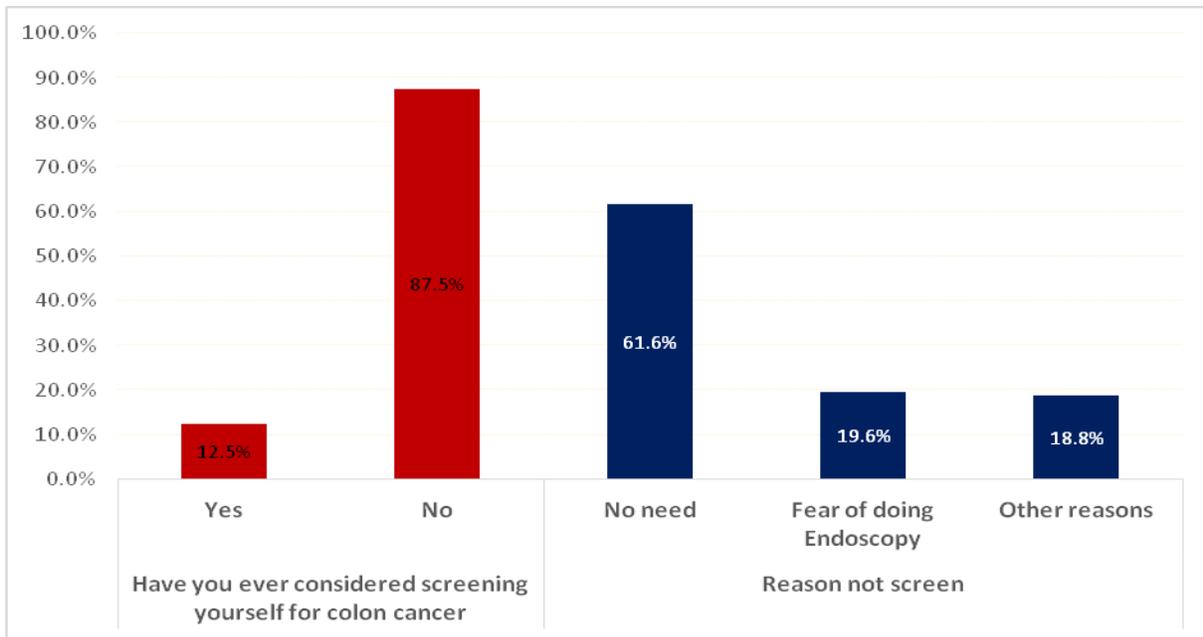


Figure (1): Distribution of King Khaled University staff behaviour regarding cancer colon screening, King Khaled University, 2017

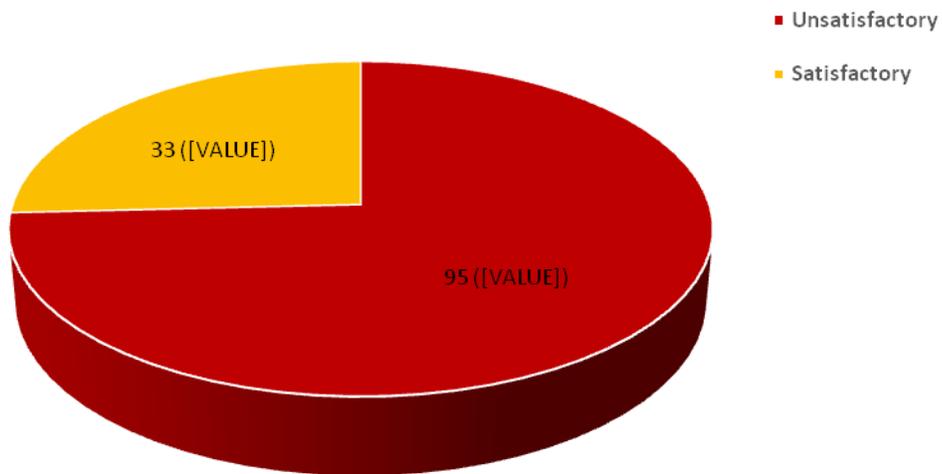


Figure (2): The Overall knowledge level of King Khaled University staff regarding cancer colon, King Khaled University, 2017

Table (4): Distribution of King Khaled University staff knowledge level regarding cancer colon by their bio-demographic data, King Khaled University, 2017

Factors	Knowledge level				MCP	
	Unsatisfactory		Satisfactory			
	No	%	No	%		
Age in years	25-	26	89.7%	3	10.3%	0.048*
	30-	36	75.0%	12	25.0%	
	40-	24	66.7%	12	33.3%	
	50+	9	60.0%	6	40.0%	
Sex	Male	48	71.6%	19	28.4%	0.485
	Female	47	77.0%	14	23.0%	
Specialty	Language & translation	9	64.3%	5	35.7%	0.623
	Computer sciences	12	80.0%	3	20.0%	
	Islamic culture	31	70.5%	13	29.5%	
	Others (Business Administration , Geography , History)	43	78.2%	12	21.8%	
Nationality	Saudi	83	73.5%	30	26.5%	0.586
	Non Saudi	12	80.0%	3	20.0%	
Incidence of colon cancer	High	5	55.6%	4	44.4%	0.043*
	Average	34	72.3%	13	27.7%	
	Rare	3	42.9%	4	57.1%	
	Don't know	53	81.5%	12	18.5%	
Cancer at first grade relative	Yes	7	77.8%	2	22.2%	0.254
	No	88	73.9%	31	26.1%	

MCP: Mont Carlo exact probability

* P < 0.05 (significant)

Table (5): Results of multiple stepwise logistic regression analysis for predictors of knowledge level regarding cancer colon among King Khaled University staff, King Khaled University, 2017

Predictor	B	S.E.	P	Adjusted OR	95% C.I for OR	
					Lower	Upper
Age	.07	.02	.007	1.13	1.02	1.63
High incidence of cancer	.40	.21	.047	1.5	1.01	9.65
First relatives cancer	.58	.32	.051	1.78	0.97	10.18
Constant	-1.55	2.14	.471	0.21		
Model significance (X ² ; P)	8.7; 0.013*					
Classification accuracy	73.4%					

SE: Standard error

OR: Odds Ratio

CI: Confidence interval

DISCUSSION:

The researchers assume that health education can reduce the suffering due to cancer by educating risky persons and supporting cancer prevention. To achieve our goals we should provide accurate and understandable information in an innovative engaging manner and focus in weakness areas regarding colorectal cancer which is done by the conducted screening.

The current study revealed that nearly most responders were the teachers at younger age while those above 50 years which are the risky group recorded very low response rate and this may be due to their busy time or indifference regarding the topic.

The current study also revealed that one out of each four among non-medical teachers has the satisfactory knowledge about colon cancer, despite the fact that there was a significant and sustained relation between the age and awareness in favor of old age group who may experience more regarding cancer colon at family or see the incidence of cancer colon in Saudi Arabia is relatively high. This indicate the poor knowledge and careless toward cancer colon. This poor awareness most probably back to lack of health courses in non-medical colleges.

This finding consistent with the findings of two studies [11-23] one among Latinas which found that Latinas had limited awareness of CRC, CRC screenings, and experienced barriers to CRC screening. The other one was about Public Awareness of Colorectal Cancer in Saudi Arabia which shows that there were some misconceptions regarding universally accepted screening protocols, symptoms, and general understanding of CRC in Saudi Arabia.

Assuming that this finding was real, that means the need to establish a big project about the importance of knowledge about the common health diseases in the community and how to screen for them.

Study limitation

Although study was conducted in all accessible staff but the non-response rate was moderately annoying due to either the lack of time to complete the questionnaire or indifference regarding the topic especially among non-Saudi. Also the questionnaire was to some extent primitive and neglected important topics regarding cancer colon for example ignoring asking about the risk groups, methods to prevent cancer colon specially life style and dietary habits modifications. Also the survey focused on highly educated sector neglecting others who are illiterate or other community population with lower level of

education.

CONCLUSIONS AND RECOMMENDATIONS

Most of the staff who agreed to participate and completed their questionnaires were the younger of Saudi nationality. The study revealed that the staff had poor knowledge regarding all aspects related to cancer colon. They need more scientific sessions, lectures or health education programs to improve their poor knowledge regarding cancer colon, risk factors, flag signs which motivate them to ask for medical consultation or even screening methods which help in early detection of cancer colon. Posters and notes may be non-expensive and an effective method for improving the awareness level specially it doesn't need time as lectures and so it will be reachable for all staff regardless time factor.

REFERENCES:

1. Cancer - Signs and symptoms". *NHS Choices*. Retrieved 10 June 2014.
2. What is cancer?". *Cancer.gov*. National Cancer Institute. Retrieved September 11, 2013.
3. Anand P, Kunnumakkara AB, Kunnumakara AB, Sundaram C, Harikumar KB, Tharakan ST, Lai OS, Sung B, Aggarwal BB (September 2008). "Cancer is a preventable disease that requires major lifestyle changes". *Pharmaceutical Research*. 25 (9): 2097–116.
4. How is cancer diagnosed?". *American Cancer Society*. 2013-01-29. Retrieved 10 June 2014.
5. Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C et al. *GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11* Lyon, France: International Agency for Research on Cancer; 2013.
6. Plummer M, de Martel C, Vignat J, Ferlay J, Bray F, Franceschi S. Global burden of cancers attributable to infections in 2012: a synthetic analysis. *Lancet Glob Health*. 2016 Sep;4(9):e609-16.
7. Parkin DM, Bray F, Ferlay J, Pisani P. Global cancer statistics, 2002. *CA Cancer J Clin*. 2005; 55: 74–108.
8. Parkin DM. International variation. *Oncogene*. 2004; 23: 6329–6340.
9. Center MM, Jemal A, Ward E. International trends in colorectal cancer incidence rates. *Cancer Epidemiol Biomarkers Prev*. 2009; 18: 1688–1694.
10. Public awareness of colon cancer screening among the general population: a study from the western region of Saudi Arabia: Yasir Mohammed Khayyat and Ezzeldin Mostafa

- Ibrahim. (Qatar Med J. 2014; 2014(1):17-24.
11. Public Awareness of Colorectal Cancer in Saudi Arabia; Official Journal of the Saudi Gastroenterology Association ; Ahmad M. Zubaidi, Noura M. Alsubaie, Areej A. AlHumaid , Shaffi A. Shaik , Khayal A. AlKhyal and Omar A. AlObeed: Saudi J Gastroenterol. 2015 Mar-Apr; 21(2);78-83.
 12. American Cancer Society. Cancer Prevention & Early Detection Facts & Figures 2009. Atlanta, Ga: American Cancer Society; 2009.
 13. Surveillance, Epidemiology, and End Results. Incidence and Mortality Data: 1973- 1977. Bethesda, Md: National Cancer Institute; 1981. NCI Monograph 57.
 14. Guilatte MM. Cancer prevention and early detection in Black Americans: colon and rectum. J Natl Black Nwse Assoc. 1989; 3:49-56.
 15. Adams M. Information and education across the phases of cancer care. Semin OncolNurs. 1991; 7:105-111.
 16. National Cancer Intelligence Network: Colorectal Cancer Survival by Stage by. 2010, Survival: NCIN Data Briefing Google Scholar.
 17. Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Lyon, France: International Agency for Research on Cancer; 2010.
 - GLOBOCAN 2008, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 10.
 18. Jatoi I. The impact of advances in treatment on the efficacy of mammography screening. Prev Med. 2011; 53:103-4.
 19. Tabár L, Vitak B, Chen TH, Yen AM, Cohen A, Tot T, et al. Swedish two-county trial: Impact of mammographic screening on breast cancer mortality during 3 decades. Radiology. 2011; 260:658-63.
 20. Centers for Disease Control and Prevention (CDC). Vital signs: Colorectal cancer screening, incidence, and mortality - United States, 2002-2010. MMWR Morb Mortal Wkly Rep. 2011; 60:884-9.
 21. Alam AA. Knowledge of breast cancer and its risk and protective factors among women in Riyadh. Ann Saudi Med. 2006; 26:272-7.
 22. Abulkhair OA, Al Tahan FM, Young SE, MUSAAD SM, JAZIEH AR. The first national public breast cancer screening program in Saudi Arabia. Ann Saudi Med. 2010; 30:350-7.
 23. Warner EL, Bodson J, Mooney R, Lai D, Samadder NJ, Kepka D. Latinas' Colorectal Cancer Screening Knowledge, Barriers to Receipt, and Feasibility of Home-Based Fecal Immunochemical Testing. J Immigr Minor Health. 2017 Jun 23.