

Knowledge and Some Factors Affected on Gastrointestinal Cancer Screening in the Women Iranian

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Abstract: Gastrointestinal cancer has emerged as the second most common cancer in Asia. Understanding the social, psychological and cognitive predictors of early detection practices such as screening may help improve gastrointestinal cancer outcomes. This study examined knowledge and some factors effected on gastrointestinal cancer and the relationship in the women Iranian. This is a cross-sectional and analytical study that was carried out on 560 women. Data collection with reliable and valid questionnaire by semi structure interview. Questionnaire including demographic variables, knowledge and some factors effected with regard to gastrointestinal cancer. The mean age of the women was 34.48 ± 10.77 years. Knowledge of warning symptom in younger and older women was 69 (11) and 56 (11.3) respectively that was significant ($p=0.038$). Younger women obtained significantly higher knowledge scores than older women (2.12, 1.18-4.28, $P<0.01$). Women with more education also demonstrated greater knowledge (3.55, 1.4-6.3, $P<0.001$). In this study, between knowledge and age ($r=-0.41$, $p=0.01$) negative correlation, knowledge and monthly income ($r=0.27$, $p=0.029$) positive correlation was observed. The results showed that most information resource was TV ($n=337$, 60%), physician ($n=131$, 23%), health workers ($n=161$, 29%) and other women ($n=145$, 26%). Regression analyses were used to investigate whether socio demographic predict knowledge independently of variables (0.35%). Increasing knowledge may reduce negative public perceptions of cancer which may impact positively to participate in screening.

Key words: Gastrointestinal Cancer • Cancer Knowledge • Women

INTRODUCTION

Gastrointestinal cancer remains a major clinical and public health challenge, with 148,810 new cases and 49,960 deaths expected in the United States in 2008. The field of colorectal cancer (CRC) research is dynamic and expanding in several directions, encompassing areas of clinical and outcomes research, epidemiology, public health and molecular sciences. Among cancer death rates for persons 40 to 79 years of age in the United States, colorectal cancer ranks second to lung cancer in men and third in women, behind lung and breast cancer, respectively [1, 2].

The goals of CRC screening are to reduce colorectal cancer mortality through early detection and curative intervention and to reduce the colorectal cancer incidence by detecting and removing adenomatous polyps. Screening recommendations from the American Cancer Society, American College of Gastroenterology and the United States Agency for Healthcare Research and Quality for the 70-80% of the population at average risk of colorectal cancer include annual screening in combination with flexible sigmoidoscopy every 5 years [3].

Although the benefits of alternative screening tests have not been demonstrated, these organizations have

suggested that colonoscopy every 10 years may be satisfactory options based on the availability and quality of screening and diagnostic resources. In a 1999 random telephone survey conducted in the United States, 20.6% of respondents reported FOBT in the previous year and 33.6% reported having undergone flexible sigmoidoscopy or colonoscopy within the previous 5 years [4].

According to the National Cholesterol Education Program's Adult Treatment panel III, risk factors for gastrointestinal cancer, metabolic syndrome is the presence of 3 or more of the following factors: hypertension (blood pressure of 130/85 mm Hg or greater), central adiposity (waist circumference greater than 102 cm in men or greater than 88 cm in women or a body mass index [BMI] greater than 27 [kg/m²]), low high-density lipoprotein (HDL) cholesterol (HDL <40 mg/dL in men or <50 mg/dL in women), hypertriglyceridemia (150 mg/dL or greater) and impaired glucose tolerance (fasting serum glucose of 110 mg/dL or greater) [5]. Colorectal neoplasia has been associated with markers of glucose and insulin control; insulin resistance, which is the cornerstone of the metabolic syndrome, may be the mechanism by which several risk factors (obesity, diabetes mellitus, lack of fitness) affect colorectal carcinogenesis [6].

Understanding the social, psychological and cognitive predictors of early detection practices for colorectal cancer may be one way to improve CRC outcomes [5-6]. One way in which socio demographic factors may influence attitudes toward a health threat, is through knowledge [7-8].

Although an over emphasis on knowledge at the expense of other social and psychological processes has been criticized, knowledge is an important prerequisite for instigating behavior change [9] and it is likely that knowledge of cancer will inform attitudes toward cancer screening and other early detection behaviors. The movement toward more informed decision-making in cancer screening has also led to a greater emphasis on individuals' knowledge and understanding of cancer risk and disease outcomes and the way in which these impact on decisions to participate [10].

The aim of this study was to determine of knowledge and some factors effected on gastrointestinal cancer in women Iranian.

MATERIALS AND METHODS

Participants and Procedure: This is a cross-sectional study that carried out on 560 women were selected from

health centers. Number of samples was calculated 560 by using volume of sample formula based on the percent and mean of the variables.

In this study inclusion criteria included consent women for the study and without of gastrointestinal cancer. Moreover mother with any cancer complication were excluded. The women agreed to participate and complete a questionnaire. Research assistants explained the purpose of the study and obtained informed consent from the eligible participants. Women participation was voluntary and anonymous using self-administered data collection procedures. The study was approved by both the Ethics Committee of Arak university of medical sciences (Arak-Iran) and the health center Arak province.

Instruments: For design the questionnaire our use qualitative study and other questionnaire. Data was collected using a questionnaire including some demographic question (ex. Age, status of job, level of education and so on), knowledge and some factors effected on gastrointestinal cancer. All women completed the questionnaire.

Knowledge about gastrointestinal cancer=37 item. Knowledge included awareness of risk factors for developing cancer, incidence, survival, age-related risk, early cancer warning signs. Knowledge of cancer risk factors was tested by questions. The following answers were considered correct: being elderly, having relatives affected by cancer, eating a low-fiber diet and having a low intake of fruit or vegetables. Knowledge of warning signs or symptoms was tested. The seven warning signs and symptoms of early cancer have previously been used in this setting. The signs included changes in bowel or bladder habits, a sore that does not heal, unusual bleeding or discharge, thickening or a lump in elsewhere, an obvious change in a wart or mole, nagging cough or hoarseness and persistent indigestion/difficulty swallowing. A single closed question was used to test knowledge of cancer screening tests. Only recommended screening procedures were considered correct.

The seven early warning signs for cancer are publicized. Respondents were asked an open-ended question, which was scored according to a checklist of answers undisclosed to the respondent. The question was framed in the same way that the warning signs are presented to the public: "There are seven warning signs for cancer; have you any idea what these seven signs might be?" The responses were coded according to the list of signs: (I) changes in bowel habits; (ii) a sore that

does not heal; (iii) unusual bleeding or discharge; (iv) thickening or a lump in the elsewhere; (v) obvious change in a wart or mole; (vi) nagging cough or hoarseness; and (vii) persistent indigestion/difficulty swallowing.

The knowledge about colorectal cancer were measured; (range: 0-37) respectively. For analyzing data, the sum of scores for knowledge was 100.

Fruit, vegetable and fiber consumption have been linked to gastrointestinal cancer, although evidence for these factors is currently considered controversial. These items were included as “correct,” as they have been widely publicized in health education materials.

The women behavior (taking health action) related to the colorectal cancer was assessed using periodical examination, endoscopy and anus examination period. Resource information were the measured whit frequency.

Reliability and Validity: The content validity of the questionnaire was determined by a panel of reviewers consisting of college professors in health education and promotion, oncologist and epidemiologist. Prior to conducting the main project, a pilot study was conducted to assess the content validity of the study questionnaires as well as reliability. The pilot study was conducted to obtain feedback about the clarity, length, comprehensiveness and the required time for completion of the questionnaires as well as for data collection in order to estimate the internal consistency of the measures.

To determine the internal consistency of the instrument items a Chronbach's Alpha formula was applied to measure the reliability of the questionnaire. The results reveal the reliability rates, which are in an acceptable level. Statistical analyses.

Analysis was by chi-square tests for comparison of proportions. Pearson's correlation was used to examine relationships between continuous variables and multivariate analysis was by multiple linear regression, using SPSS 16.

RESULTS

Finding showed that knowledge of warning symptom in younger and older women was 69 (11) and 56 (11.3) respectively that was significant (p=0.038). Othe participant knowledge about gastrointestinal cancer between younger and older women showed in Table 1.

Gastrointestinal Cancer Knowledge: In this study 79 percent of respondents recalled older age as a risk factor for colorectal cancer. Family history of cancer was mentioned by 21% of respondents. Dietary factors were recalled with greater frequency (low fiber diet 66%; fruit 69%; vegetables 75%). Less than half (41%) of the respondents were unable to name any correct risk factors for gastrointestinal cancer (Table 2).

Early Cancer Warning Signs: Of the seven warning signs scored as “correct”, a lump or thickening in the elsewhere of body, was the most commonly recalled warning sign of cancer (77%), followed by unusual bleeding or discharge (69%). In this study 26% of respondents recalled a change in bowel habits as an early warning sign of cancer.

younger women obtained significantly higher knowledge scores than older women (2.12, 1.18-4.28, P<0.01). women with more education also demonstrated greater knowledge (3.55, 1.4-6.3, P<0.001).

Multivariate Analyses: Regression analyses were used to investigate whether sociodemographic predict knowledge independently of variables. Sociodemographic variables (job, age, education), along with cancer experience and cancer knowledge were entered into the regression model, as the dependent variable. With the exception of job, each of the variables, independently predicted knowledge cancer (Table 3).

Table 1: Participant knowledge about gastrointestinal cancer between younger and older women

Groups Knowledge	Younger women (N=372)		Older women (N=188)		P
	Mean	SD	Mean	SD	
Knowledge of warning symptoms ^a	69	11	56	11.3	0.038
Knowledge of risk factors ^a	65	9.6	50	9.5	0.041
Knowledge of incidence (correct), no. (%)	141 (38)		58(31)		0.016
Knowledge of prognosis (correct), no. (%)	163(44)		77(41)		0.01
Knowledge of age at risk (correct), no. (%)	282(76)		114(61)		0.01

^aKnowledge of warning symptoms or risk factors is expressed as means_ standard deviations.

Table 2: Knowledge about gastrointestinal cancer in younger and older women

Groups Knowledge	Younger women (n=372)		Older women (n=188)	
	N	%	N	%
Bowel cancer risk factors (unprompted)				
Older age	301	81	146	78
Relative with bowel cancer	267	72	118	63
Low fiber diet	245	66	122	65
Not eating much fruit	256	69	114	61
Not eating many vegetables	279	75	133	71
Environmental pollution	204	55	109	58
Smoking (or other tobacco use)	159	43	77	41
Obesity/being overweight	256	69	122	65
Having other types of bowel disease	171	46	75	40
Lack of exercise	152	41	80	43
High alcohol consumption	133	36	58	31
High fat diet	249	67	110	59
High salt diet	167	45	79	42
Anemia	104	28	60	32
Other	44	12	15	8
Age most at risk of bowel cancer				
Under 50 years (incorrect)	282	76	114	61
Over 50 years (correct)	59	16	47	25
Don't know	30	8	26	14
Early cancer warning signs (unprompted)				
Lump or thickening in the bowel or elsewhere	286	77	131	70
Unusual bleeding or discharge	257	69	126	67
An obvious change in wart or mole	204	55	90	48
Change in bowel habits	153	41	62	33
Reflex content of stomach	141	38	56	30
Persistent indigestion or difficulty swallowing	108	29	60	32
A sore that does not heal	152	41	56	30
If notice blood in stool	241	65	109	58

Table 3: Predictor of knowledge cancer

Predictor of variable	Beta (95% CI)	P
Job	0.17 (0.11-0.29)	0.416
Age	-0.24 (-0.18-0.38)	0.026
Level of education	0.44 (0.25-0.53)	0.01
Cancer experience in first family	0.36 (0.18-0.49)	0.01
R2 Adjusted		0.351

Finding showed that higher knowledge in women with upper education and higher monthly family income. Knowledge about gastrointestinal cancer by demographic factors showed in Table 4.

In this study, between knowledge and age ($r=-0.41$, $p=0.01$) negative correlation, knowledge and monthly income ($r=0.27$, $p=0.029$) positive correlation was observed.

The results showed that most information resource was TV ($n=337$, 60%), physician ($n=131$, 23%), health workers ($n=161$, 29%) and other women ($n=145$, 26%).

DISCUSSION

The results indicated that knowledge was good among all respondents and was even higher than that reported in other countries [7, 11].

In this study only few of respondent were unable to name any correct risk factors for gastrointestinal cancer. Similarly, Brunswick et al. reported that 21% identified older age, 46% a low fiber diet and 42% eating little fruit and vegetables as risk factors for bowel cancer [7, 12].

A recent analysis [12] has directly compared the two methods over a number of different aspects of knowledge and found significantly higher levels of knowledge using the prompted method.

However, the question of which method of measurement of knowledge better reflects the situation in everyday life, when individuals are considering issues of cancer prevention and early detection, is complex and needs further examination. One important observation from the knowledge findings is the high of awareness that "age" is a risk factor for cancer. In contrast findings have been reported in relation to other cancers [7, 13-16].

One possible explanation for this is the way in which the question is framed. In the present study, when respondents were asked to indicate the age at which individuals are most at risk for gastrointestinal cancer, the majority correctly reported that adults over 50 years were at greater risk. This suggests that the respondents are aware of the link with age, despite not identifying age as a "risk factor" per se. As Pearlman *et al.* [17] suggest, individuals may not conceptualize characteristics that are unmodifiable (such as age and gender) as risk factors, whereas factors such as diet and smoking fit more readily within a lay "risk factor" framework.

Although there were differences in absolute levels of knowledge between our findings and other studies using prompted items, there were consistent associations between knowledge and education. Women and those with more education showed significantly better knowledge about cancer than men, supporting previous work [7, 8, 13, 16, 17].

This finding mirrors the socioeconomic gradient we observed in cancer knowledge. It also corresponds with the socioeconomic gradient in uptake of cancer screening which has been consistently reported in previous research [16, 18-21].

Table 4: Knowledge about gastrointestinal cancer by demographic factors

Variables		Knowledge		
		Knowledge score (0-100)		
		Low (0-30) N (%)	Medium (31-60) N (%)	High (upper of 60) N (%)
Age (years)	<20 (n=23)	7(30)	11(43)	5(22)
	21-30 (n=180)	41(22)	83(46)	56(31)
	31-40(n=139)	33(24)	66(47)	41(29)
	41-50(n=108)	38(35)	45(41)	25(23)
	>50 (n=110)	39 (35)	57 (51)	14 (12)
Status of employment	Yes (n=88)	16(19)	23(27)	48(54)
	No (n=472)	175(37)	137(29)	160(34)
Status of marriage	Single (n=44)	8(18)	15(35)	21(47)
	Married (n=516)	57(11)	196(38)	264(51)
Level of education	Illiterate (n=42)	27(64)	12(28)	4(9)
	Elementary school(n=108)	47(43)	38(35)	23(21)
	Middle school (n=95)	26(27)	31(32)	38(40)
	High school (n=188)	23(12)	79(42)	86(46)
	College or university (n=127)	15(12)	38(30)	74(58)
Monthly family income	Low (n=151)	48(32)	76(50)	27(18)
	Moderate (n=321)	62(19)	174(54)	85(27)
	High88	16(18)	30(34)	42(48)
History of colorectal cancer in family	Yes (n= 117)	21(18)	31(26)	65(56)
	No (n=404)	198(49)	156(38)	50(13)
	I don't know (n=39)	10(25)	13(34)	16(41)
History of death of colorectal cancer in family	Yes (n=65)	14(21)	18(28)	33(51)
	No (n=448)	159(35)	211(47)	78(17)
	I don't know (n=47)	14(30)	21(44)	12(26)

A few of our sample correctly answered the knowledge item “A person should go for cancer screening only if he/she has symptoms”, compared to 75% of African-Americans [22]. Studies on mammography support this finding that Chinese in particular tend to feel that disease screening is unnecessary if they “feel okay” [23]. To increase screening uptake, health educators should endeavor to dispel this misunderstanding since answering the above question correctly is positively associated with cancer screening. women tend to have a cost-conscious mentality towards cancer screening. A few number agreed that “going for cancer screening would be too expensive”, whereas only 21% of Green and Kelly [22] sample (African-Americans) and 32.5% of McQueen *et al.* [20] sample (US general population) agreed to this. This may be due to a combination of having a financially conscious mindset as well as knowledge about test costs within other population.

Multiple linear regression was used to examine the associations between knowledge and sociodemographic factors and to test whether there was any evidence of mediation between the predictor variables. Sociodemographic significantly predicted knowledge.

On multivariate analysis, knowledge score remained a significant correlate of age and education. This suggests that increasing/imparting knowledge about cancer to women of any age group and educational level may improve knowledge.

These findings are important because both bleeding and a persistent change in bowel habit (to looser bowel motions) are publicized as early indicators of bowel cancer. Although there is some evidence that bleeding may be the better predictor of bowel cancer [24, 25], the findings suggest that more education on early symptoms of gastrointestinal cancer in relation to changes in bowel habits may be needed. This finding consist of studies in other health behavior [26-30].

CONCLUSION

The results of this study identified several basic educational needs of participants which increase their knowledge and motivate change in their practices for prevention of cancer.

In addition, resource of information that encourage the women to care for gastrointestinal cancer and the contribution of physician to care, are very important.

Further studies should explore whether the low rates of physician recommendations represent a lack of consensus regarding gastrointestinal cancer screening guidelines or time constraints in physician encounters that generally focus on acute health care issues.

Limitation: Our findings indicate high levels of knowledge about Gastrointestinal cancer warning signs in the Iranian women. However, our interpretations must remain cautious. In this study, for data collection of this parameter we used self-reporting this is limitation of this study. The research is cross-sectional and therefore the direction of effects cannot be assumed. Further prospective research and intervention studies are required.

Conflict Interest: None declared.

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