Knowledge, attitude, and practice of Iranian physicians towards colorectal cancer screening.

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Abstract

The aim of the current study was to explore knowledge, attitudes, and practices of Iranian physicians towards colorectal cancer (CRC) screening. This cross-sectional study was conducted in 2016 with participation of physicians. The survey explored patient-physician communication, physician's knowledge, attitudes, and their routine practice about CRC screening. All analyses were done with the software STATA/MP, 13.0. A total of 123 physicians with mean age of 47.2 years participated in the survey. Colonoscopy was cited as the first-step screening test in average-risk individuals aged ≥ 50 years by 71 (57.7%) physicians followed by FOBTs in 22 (17.9%). Around two-thirds of the physicians reported prescribing colonoscopy in their routine clinical practice. Participants mentioned recommending CRC screening in healthy individuals aged 50-75 years (87.9%) and relatives of CRC patients (86.2%). Of note, the majority of physicians (89.4%) consented to screening policy in people aged ≥ 50 with symptoms suggestive of CRC. Factors affecting CRC screening from physician's perspective were individual's awareness towards a test; family support; fear of pain, test complications, and tests results; preparation for the test; and embarrassment. Our survey indicates that Iranian physicians are ready to play an appropriate and supportive role in the context of CRC screening, yet further active engagement of physicians is needed.

Keywords: Colonic neoplasm, General practitioner, Mass screening, Occult blood, Attitude of health personnel

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Introduction

Colorectal cancer (CRC) is the third common neoplasm and the fourth most common cause of cancer death in Iran [1]. Similar to several developing countries, Iran is experiencing a significant rise in the incidence of CRC over the recent decades [2]. Our prior studies as well as others showed that the colonic adenoma prevalence and CRC rate, are rising in the nation [3-7]. Five-year survival is 90% if the disease is diagnosed while still localized and screening methods such as faecal occult blood testing (FOBT), colonoscopy or flexible sigmoidoscopy have led to significant declines in the mortality of the disease mostly in developed nations [8,9]. According to the most of the current international guidelines, average-risk adults aged 50 or older are recommended to undergo CRC screening by either colonoscopy every 10 years; flexible sigmoidoscopy every 5 years; or annual examination by FOBT [10-12].

Currently, there is no national program for CRC screening in Iran, but opportunistic screening is available. However, our recent data showed that a remarkable number of Iranian adults are not still informed of CRC or screening tests and never receive a doctor recommendation for screening [13,14]. Indeed, physicians play a key role in the implementation of cancer screening guidelines in health care systems or in providing preventive and screening services [15-18]. Very limited data is available about knowledge, attitude, and practice of physicians with regard to CRC screening in Iran. On the other hand, understanding physicians' perspective and their professional behavior regarding CRC screening provides important insights about the next steps needed to implement CRC screening and cancer prevention programs. The aim of the current study, therefore, was to explore knowledge, attitudes, and practice of Iranian physicians towards CRC screening.

Materials and Methods

This cross-sectional study was conducted with participation of physicians from different parts of the country who attended the 15th Iranian International Congress of Gastroenterology and Hepatology in Shiraz in November 2016. Eligible physicians (i.e., board certified in gastroenterology, internal medicine and general practitioners) who already practiced in the hospitals or health care system in Iran were enrolled in the current study. Data on the characteristic of the study population including age, gender, specialty, and years of clinical practice was collected. The survey tool was self-administered and took approximately 20 minutes to complete covering below domains:

- Physician's knowledge about CRC screening in average-risk individuals aged 50 or older.
- Physician's attitude towards CRC screening which was measured using a 5-point Likert scale (i.e., strongly disagree, somewhat disagree, undecided/ not certain, somewhat agree, and strongly agree).
- Physician's routine practice about CRC screening.
- Patient-physician communication.

Sub-group comparisons were conducted using χ^2 or Fisher's exact tests. A *P*-value at level of 0.05 or less was deemed to be significant. All analyses were done with the software STATA/MP, 13.0. Informed consent was obtained from all study participants. Study protocol was approved by the Institutional Review Board of Digestive Diseases Research Institute.

Results

A total of 200 questionnaires were distributed amongst congress participants. A number of 123 physicians (response rate 61.5%) with mean age of 47.2 years participated in the survey; 73.2% were male, 53.7% board certified in gastroenterology (27.7%) or internal medicine (26.0%) and 46.3% were general practitioners (GPs). The mean duration of physicians' clinical experience was 14.1 years. Of the 123 physicians, 39.0% stated that they had already passed some training courses about patient communication and only 6.5% mentioned that they often experienced language barriers with patients (Table 1).

Regarding physician's knowledge about first-step CRC screening tests in average-risk individuals aged ≥ 50 years, colonoscopy was cited as screening test by 71 (57.7%) physicians followed by FOBTs in 22 (17.9%). Flexible sigmoidoscopy alone or virtual colonoscopy alone were not almost considered as screening test, while 29 (23.6%) respondents stated that combination of mentioned tests could be recommended. We asked whether physicians had any clear policy for CRC screening for average risk individuals aged ≥ 50 years, in their routine clinical practice. Around two-thirds (65.1%) of the physicians reported prescribing colonoscopy, while only 17 (13.8%) declared recommending FOBT as screening test. Screening by virtual colonoscopy alone or flexible sigmoidoscopy alone were not almost chosen as a screening policy by the respondents and 25 (20.3%) mentioned ordering more than one screening option (Table 1). There was no statistically significant difference between board-certificated physicians and GPs with regard to tests knowledge and screening policy (Data not shown).

A majority of physicians reported that in routine practice they usually ask about family history of cancers (89.4%) and recommend CRC screening in healthy individuals aged 50-75 years (87.9%) and relatives of colon cancer patients (86.2%). Most of respondents declared that they usually explain to individuals how screening prevents CRC and how they can do screening for CRC. About half of physicians (48.0%) noted that healthy individuals aged 50-75 years never/seldom personally ask for a screening test, and 30 (24.4%) physicians reported that they usually encounter some barriers when communicating with patients (Table 2). Board-certificated physicians and GPs contributed almost equally to practicing screening and the difference was not statistically significant (Data not shown).

With regard to the target group of CRC screening, 80.5% of physicians agreed with CRC screening policy among asymptomatic healthy individuals aged ≥ 50 years and 90.2% approved screening in family members of CRC patients (Table 3). On the other hand, the majority of physicians (89.4%) consented to screening policy in people aged ≥ 50 with symptoms suggestive of CRC. Physicians' attitude towards screening target group did not vary significantly according to their specialty (Data not shown). A large majority of respondents agreed that test characteristics, i.e., availability (71.6%), costs (73.2%), clinical performance (93.5%), and possible complications (78.0%) would affect their decision in test recommendation for CRC screening. While 74.8% of physicians agreed that individual's acceptance of a test would impact their clinical decision in test recommendation, only 55.3% and 53.1% of them respectively agreed with the individuals' preference and that subjects can choose a test (Table 3). The majority of respondents agreed addressing individual's perception and awareness about a

***Table 1**. Physicians' characteristics, knowledge, and practice with regard to colon cancer screening guidelines (n=123).*

Age, (mean years ± SD)	47.2 (10.4)
Gender, n (%)	
Male	90 (73.2)
Female	33 (26.8)
Specialty	
Gastroenterology	34 (27.7)
Internal medicine	32 (26.0)
General practitioner	57 (46.3)
Clinical experience, (mean years ± SD)	14.1 (9.9)
Having passed any training course about patient communication, n (%)	48 (39.0)
Often having language barriers with patients, n (%)	8 (6.5)
Knowledge about first-step screening test for CRC in average risk individual's ≥50 years, n (%)	
Fecal occult blood test	22 (17.9)
Flexible sigmoidoscopy	0 (0.0)
Colonoscopy	71 (57.7)
CT colonography (virtual colonoscopy)	1 (0.8)
More than one screening modality	29 (23.6)
CRC screening tests recommended in average risk individual's ≥50 years, n (%)	
Fecal occult blood test	17 (13.8)
Flexible sigmoidoscopy	1 (0.8)
Colonoscopy	80 (65.1)
CT colonography (virtual colonoscopy)	0 (0.0)
More than one screening modality	25 (20.3)

CRC, colorectal cancer

***Table 2.** Physicians' routine practice with regard to colon cancer screening (n=123)*

	Never	Seldom	Sometimes	Very often	Always
Ask from clients about family history of cancers or CRC, n (%)	1 (0.8)	2 (1.6)	10 (8.1)	30 (24.4)	80 (65.0)
Recommend individuals aged 50-75 years to do screening for CRC, n (%)	0 (0.0)	3 (2.4)	12 (9.8)	43 (35.0)	65 (52.9)
Recommend relatives of CRC patients to do screening, n (%)	0 (0.0)	2 (1.6)	15 (12.2)	19 (15.5)	87 (70.7)
Explain to individuals how screening prevents CRC, n (%)	0 (0.0)	9 (7.3)	31 (25.2)	56 (45.5)	27 (22.0)
Explain to individuals how they can be screened for CRC, n (%)	1 (0.8)	12 (9.8)	44 (35.8)	65 (52.9)	1 (0.8)
Healthy individuals aged 50-75 years ask physicians to recommend a test for CRC screening, n (%)	6 (4.9)	53 (43.1)	55 (44.7)	9 (7.3)	0 (0.0)
Encounter communication barriers when visit individuals, n (%)	6 (4.9)	31 (25.2)	56 (45.5)	25 (20.3)	5 (4.1)

Table 3. *Physicians' attitude towards colon cancer screening(n=123)*

	Strongly disagree	Somewhat disagree	Undecided/ not certain	Somewhat agree	Strongly agree
Target group for screening, n (%)					
Asymptomatic individuals aged ≥50	0 (0.0)	2 (1.6)	22 (17.9)	14 (11.4)	85 (69.1)
People aged ≥50 with symptoms suggestive of colon cancer	5 (4.1)	3 (2.4)	5 (4.1)	2 (1.6)	108 (87.8)
Relatives of patients with colon cancer	0 (0.0)	0 (0.0)	12 (9.8)	2 (1.6)	109 (88.6)
Factors influencing physician's decision in test recommendation, n (%)					
Test availability	1 (0.8)	3 (2.4)	31 (25.2)	7 (5.7)	81 (65.9)
Test costs	4 (3.3)	2 (1.6)	27 (22.0)	12 (9.8)	78 (63.4)
Test clinical performance	0 (0.0)	3 (2.4)	5 (4.1)	5 (4.1)	110 (89.4)
Test possible complications	0 (0.0)	3 (2.4)	24 (19.5)	9 (7.3)	87 (70.7)
Individual's acceptance of the test	1 (0.8)	3 (2.4)	27 (22.0)	15 (12.2)	77 (62.6)
Individual's preference	4 (3.3)	11 (8.9)	40 (32.5)	13 (10.6)	55 (44.7)
Individuals can choose which test they want	0 (0.0)	25 (20.3)	33 (26.8)	18 (14.6)	47 (38.5)
Factors regarded by physicians in individuals' instruction, n (%)					
Individual's perception and awareness about test	0 (0.0)	6 (4.9)	24 (19.5)	18 (14.6)	75 (61.0)
Test preparation	0 (0.0)	2 (1.6)	18 (14.6)	11 (8.9)	92 (74.8)
Technique and procedure	0 (0.0)	2 (1.6)	16 (13.0)	16 (13.0)	89 (72.4)
Frequency and periodicity	0 (0.0)	3 (2.4)	15 (12.2)	11 (8.9)	94 (76.4)
Complications	0 (0.0)	2 (1.6)	22 (17.9)	20 (16.3)	79 (64.2)
Benefits	4 (3.3)	0 (0.0)	12 (9.8)	14 (11.4)	93 (75.6)
Costs	0 (0.0)	8 (6.5)	26 (21.1)	20 (16.3)	69 (56.1)
Barriers to screening from physicians' perspective, n (%)					
Awareness towards a test	0 (0.0)	2 (1.6)	25 (20.3)	19 (15.5)	77 (62.6)
Preparation for test	3 (2.4)	6 (4.9)	36 (29.3)	22 (17.9)	56 (45.5)
Fear of tests complications	2 (1.6)	7 (5.7)	30 (24.4)	21 (17.1)	63 (51.2)
Fear of pain from the test or procedure	1 (0.8)	4 (3.3)	32 (26.0)	20 (16.3)	66 (53.7)
Fear of tests results	0 (0.0)	9 (7.3)	32 (26.0)	21 (17.1)	61 (49.6)
Embarrassment of the test	2 (1.6)	11 (8.9)	34 (27.6)	28 (22.8)	48 (39.0)
Family support	0 (0.0)	4 (3.2)	27 (22.0)	22 (17. 9)	70 (56.9)
Physician recommendation	0 (0.0)	5 (4.1)	14 (11.4)	17 (13.8)	87 (70.7)
Physician communication with individuals	0 (0.0)	0 (0.0)	15 (12.2)	9 (7.3)	99 (80.5)
Test's costs	0 (0.0)	7 (5.7)	33 (26.8)	11 (8.9)	72 (58.5)
Test's availability	0 (0.0)	1 (0.8)	34 (27.6)	16 (13.0)	72 (58.5)
Gender of physician who perform the test or procedure	5 (4.1)	16 (13.0)	41 (33.3)	23 (18.7)	38 (30.9)

test in their instructions along with tests characteristics (i.e., test preparation, technique and procedure, frequency and periodicity, complications, benefits, and costs). We evaluated physicians' perspectives about common determinants of CRC screening uptake. Individual-related factors agreed by physicians were respectively: awareness towards a test (78.1%), family support (74.8%), fear of pain from the test or procedure (70.0%), fear of tests complications (68.3%), fear of tests results (66.7%), preparation for the test (63.4%), and embarrassment of the test (61.8%). When we asked about physician or system-related factors, a vast majority of respondents confirmed that physician communication with individuals (87.8%) and test recommendation (84.5%) would impact screening rates, yet, less than half of them (49.6%) admitted that client-physician gender match would impact the screening uptake. More than two-thirds of physicians accepted that test's costs (67.4%) or the availability of screening tests (71.5%) might affect screening use in people (Table 3).

Discussion

This is the first survey about physicians' knowledge, attitude, practice, and perceived barriers towards CRC screening in Iran. Our study indicated that the majority of physicians referred to colonoscopy as the first-step screening test for average-risk individuals aged ≥ 50 years while only near 18.0% cited FOBTs. The same was true with regard to screening test recommendation in their routine clinical practice. Interestingly, test of choice and screening policy did not vary according to their specialty and despite its high financial burden, colonoscopy was chosen as the test of choice for CRC screening by most of Iranian physicians. These data are comparable with the results of a physician survey from Saudi Arabia in which most of the physicians considered colonoscopy as the most effective screening test while only one-third of them agreed with FOBT [19]. In contrary, studies from Canada, Brazil, the US and Italy showed that FOBT, either alone or in combination with other tests, was recommended most commonly followed by colonoscopy [20-23], possibly due to better acceptance or the availability of the test compared to colonoscopy among people. However, physicians may not be aware of the long-term benefits and improved performance of immunochemical FOBT (iFOBT) compared to classic guaiac-based FOBT and that iFOBT is recommended as the first-step screening test for CRC in developing countries with limited resources where screening colonoscopy would inflict a high economic burden on the health system [10]. The iFOBT may be particularly beneficial to the health centers in Iran, where health providers could adequately offer this noninvasive, rapid, affordable, and simple screening test to increase the coverage of

the screening service especially among underserved individuals and therefore to expand the system capacity for cancer screening.

We found that the vast majority of Iranian physicians recommend CRC screening and adequately instruct clients in routine practice and that board-certificated physicians compared to GPs contributed almost equally to practicing screening. This is noteworthy in the absence of an organized screening program and highlights the crucial role of physicians in increasing opportunistic screening and supporting future organized screening programs. Nonetheless, low CRC screening uptake among Iranians [13,24] indicates that physician recommendation alone may not translate into the appropriate and effective screening practices among people. On the other hand, most of healthy people state that they do not usually receive a doctor recommendation for CRC screening [19,20,21,25]. With this regard several reasons may involve such as lack of preventive strategies or time to discuss and recommend CRC screening, anticipation of poor adherence, and competing acute health conditions [26]. Moreover, in the current study about half of physicians confirmed that healthy individuals aged 50-75 years do not usually ask for a CRC screening test which might be due to lack of cancer knowledge among people and barriers in patient-physician communications [26]. As such, in this study about one-fourth of physicians declared communication barriers with their clients. Therefore, we recommend increasing public awareness by the mass media campaigns and considering training programs that will help physicians to make a desirable communication with their clients.

In our study the majority of the physicians knew that CRC screening would target healthy individuals aged ≥ 50 years and asymptomatic family members of patients with CRC, comparable with data from Canada [27]. However, there was a huge confusion as almost 90% of them mentioned that symptomatic patients should also receive screening service and interestingly we detected no difference with this regard according to the physicians' specialty. We suggest improving physician's knowledge about different target groups for CRC screening and referring symptomatic patients for appropriate diagnostic services.

Most of respondents agreed that test related factors (i.e., availability, costs, clinical performance, and possible complications) and individual's acceptance of the test would impact their clinical decision in recommending a specific test for CRC screening and that all these items should be addressed in instructing individuals. This suggests a potentially positive attitude among Iranian physicians towards patient education. Almost half of our physicians did not agree with the individuals' preference and authority in choosing test, despite the fact that considering individuals' preference for screening by physicians could increase their involvement in decision making and may strengthen participation in screening [19,28].

From physician's perspective, lack of individuals' awareness which was also highlighted in other studies [13,29,30] was cited most as a barrier to screening uptake. Other barriers were lack of family support, pain, test complications, fear of results, preparation for the test, and embarrassment of the test, comparable to the literature [13,24,30]. Therefore, prior to initiating an organized screening, we suggest cancer awareness rise by the mass media campaigns to achieve a desirable screening uptake. We found that test recommendation by physician was an important factor with regard to screening uptake from physicians' perspective. One study in France showed that the addition of a GP signature to the invitation letter in a FOBT screening program had no impact on the test uptake. With regard to cost barriers, although more that 90% of Iranians are covered by medical insurance, 60% of total health expenditures in 2011 was out-of-pocket. That is, almost 40-50% of all the screening procedures (screening, triage, treatment) would be out-of-pocket and therefore not affordable for many people [31-35].

Our study had some limitations which included self-report data and the small sample size. Therefore, the comparisons between GPs and board certified physicians were based on a small and non-representative sample. Also, we did not collect information whether the participants worked in the private sector or in the public sector. Moreover, we assessed screening barriers in general, while barriers like cost or test complication are specifically applicable to colonoscopy. The strength of the current study could be its focus on a sub-group of physicians who would be most involved with colon cancer screening and colonoscopy triage and then partly representative of the CRC screening service providers. However, larger studies are needed to explore knowledge, attitude, and practice of physicians with different specialties and also health providers towards colon cancer screening.

Conclusion

Our survey indicates that Iranian physicians seem to be ready to play an appropriate and supportive role in the context of CRC screening. However, test recommendation for CRC screening in Iran might be not fully appropriate, as physicians showed a high level of interest in ordering colonoscopy as the first step test in routine practice. We believe that further research is needed to identify the contextual determinants that influence the implementation of CRC screening into clinical practice.

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Conflict of Interest

None.

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