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Original article

Knowledge, Attitudes and Practices of Colorectal Cancer Screening in Morocco

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Abstract

Background: Colorectal cancer (CRC) is a major public health problem. Currently, there are no studies exploring the status of knowledge, attitudes and practices of CRC screening in high-risk populations in Morocco so that effective approaches can be implemented. The objective of the study was: To assess knowledge and awareness of screening methods in the at-risk population. ***Methods:*** This was a cross-sectional study where the target population was patients with age >45 years and young people with a history of CRC in the family. ***Results:*** 210 subjects were recruited, sex ratio M/F=0.85. Mean age = 53 years, 42% lived in rural area and 38% were illiterate; 86% had a family history of CRC or adenoma and 42% were chronic smokers. 96% reported knowledge of CRC. The most known risk factors: smoking (84.2%), alcoholism (68.5%) while 44.2% knew that colonoscopy was the reference method for screening. Most subjects would like to know more (95.0%). More than 90% agreed that early diagnosis improves prognosis. Finally, 44% will start regular screening. ***Conclusion:*** Understanding and recognizing the awareness and attitude regarding CRC screening and the reasons for low screening utilization among high-risk populations could help develop appropriate policies for its prevention and control.

Keywords: ***colorectal cancer, screening methods, prevention, knowledge, attitude, practice.***

Introduction

Due to its frequency and severity, Colorectal cancer is considered as a major public health problem. It is the third cancer in the world after lung and breast cancer [1], currently it is considered among the most frequent but also the most serious malignant tumors.

In Morocco, its incidence represents 6.7% among cancer cases recorded between 2008 and 2012 [2]. A study conducted at the University Hospital center Marrakech in 2017 stated that between 1997-2015, 2584 cases of CRC were detected, in which 50% of patients were already in stage III of the disease [3], which indicates the existence of problems of detection and prevention of this disease. And, inspite of the heavy burden of colorectal cancer in Morocco, there are no guidelines or screening programs.

CRC risk factor are affected by environmental, genetic and personal history factors, and includes such things as low socioeconomic status, sedentary lifestyle, unhealthy diet, smoking, obesity [4]. Most CRCs are sporadically developed from primary tumors such as adenomatous polyps or an inflammatory bowel disease colon; while a family history of CRC plays a major risk factor. While a family history of CRC have a 2.5 to 3 times higher risk of developing cancer [5,6].

Incidence and mortality of CRC can be reduced with different early population-based detection methods according to the World Health Organization [7,8] as colorectal cancer diagnosed at an early stage has a better prognosis [9].

At present, there are no studies exploring the state of knowledge and attitudes and practices of CRC screening among high-risk populations in Morocco so that more effective screening methods approaches can be implemented. The main of the study was: To assess the level of knowledge of CRC and to understand the level of awareness of screening methods in the population at risk (patients over> 45 years of age or young people with relatives of 1 st degree having had CRC or patients with IBD)

Patients and methods

Study design

The following study is a cross-sectional study carried out between August and September 2021 based on a structured questionnaire that was developed by authors.

Participants, recruitment and sampling procedure

The target population were patients consulting or hospitalized in the service, accompanying persons aged over 45 and young people with a history of CRC in the family viewed at the Gastroenterology department of the CHU Mohamed VI of Marrakech - Morocco.

Inclusion criteria

(1) age greater than 45 (2) history of cancer or colorectal adenomas, (3) personal history of cancer or colorectal adenomas, (4) personal history of inflammatory bowel disease (5) history of hereditary syndromes.

Exclusion criteria

(1) age less than 45 years and no familial cancer history (2) diagnosis of colorectal cancer (3) inability to communicate with the investigator (4) severe cognitive impairment.

Method for data collection and instrument

People who consented to participate in the study completed a standardized face-to-face questionnaire, which lasted about 5 to 10 minutes.

A total of 250 questionnaires were distributed: 210 returned successfully, while 40 were not completed. Participation was voluntary and anonymous.

The questionnaire was designed to address the respondents' state of knowledge and awareness among colorectal cancer.

The questionnaire consists of four parts. The first part collects information on socio-demographic status. The second is to assess knowledge about CRC. Respondents were asked to respond if they have ever heard of CRC, if it happens to be preventable, and that it is a curable disease, and if they know the risk factors and symptoms of CRC. Knowledge score was 1 for " Yes " and 0 for " No or uncertain " for each question, and the total score was 22. The third one wad the attitude part towards CRC with responses ranging from 1 (strongly disagree) to 5 (strongly agree), and the total score was 30. Finally, the fourth section, participants were asked if they have had ever been screened for colorectal cancer with a " yes " or " no " answer. Participants who answered “no” were asked to choose their reasons for not being screened and multiple choices were allowed.

Statistical analysis

The results obtained were evaluated by crossing with chi-square tests for differences between the sexes. Logistic regression models were used to estimate the correlation between knowledge, attitude and intention to screen, expressed in odds ratios (OR) and associated 95 % confidence intervals. (95% CI) from crossover studies. All analyzes were performed using SPSS 22.0. A P value <0.05 was considered significant.

Results

In our 210 people recruited we had a slight female predominance (113/97) and a sex ratio M / F = 0.85. The average age of our sample is 53 years with extremes ranging from 27 years to 80 years, 42% lived in the rural area and 38% were illiterate while 14% had a higher level of education. Almost all (85.7%) were married and 80%. About 70% had a low monthly income (<253 euros / month). The majority of the population of our sample, (86.66%) had a family history of colorectal cancer or adenomas and approximately 42% were chronic tobacco users.

All variables are listed in Table 1.

Table 1: Demographic and socio-economic characteristics

Sex	**Man**	**97**
	Women	113
Average age	53 years old (27 - 80 years old)	
Place of habitat	**Rural**	82
	Urban	128
level of studies	**Illiterate**	80
	Primary	60
	Secondary	40
	University	30
Social status	**Married**	180
	Single	30
Number of children	**0**	43
	2	89
	> 2	78
Monthly yield	**> 253 e**	147
	<253 e	63
Smoking	**Yes**	90
	No	120
CRC family history	**Yes**	182
	No	28

Knowledge

Levels of knowledge about colorectal cancer are presented in Table 2.

96% of respondents affirmed their knowledge of the existence of cancer called colorectal cancer; 72% of them agreed that CRC could be cured by early diagnosis and treatment. The best-known risk factors were smoking (84.2%), followed by excessive alcohol consumption (68.5%) and a family history of colorectal cancer (58%). Dietary factors were also quite good known (not enough fruits and vegetables = 53.3%; diet low in fiber and high in fat = 33.34%). The least recognized risk factors included advanced age (46.6 %%), overweight or obesity (36.66%), chronic inflammatory bowel disease (31.42%) an inherited syndrome (4.7%) colon polyps (14.28%) and diabetes (5.7%). The most well-known warning signs were the presence of blood in the stool (94.2%) and the weight loss (61.9%). Lesser-known warning signs included change in bowel movement (36.67%), fatigue (23.8%) and abdominal pain (19%) While 24.7% knew colorectal cancer could be asymptomatic. Regarding screening methods, 47% knew that accessible means (in particular the search for occult blood in the stool) exist and 82% of them were ready to carry them out for the purpose of screening other than symptoms. As for colonoscopy only 44.2% knew that it was the reference method for colorectal cancer screening.

Table 2: Levels of knowledge about colorectal cancer

	ALL	**MAN**	**WOMEN**
The CRC exists	202	93	109
CRC can be cured with early diagnosis and treatment	152	62	90
CRC Risk Factors			
Advanced age> 50 years	98	47	51
Overweight / obesity	77	43	34
Diabetes	12	7	5

Smoking	177	77	100
Excessive consumption of alcohol	144	58	86
Diet low in vegetables and fruits	112	53	59
Diet low in fiber and high in fat	70	43	27
Family history of colorectal cancer	122	56	66
Chronic inflammatory bowel disease	66	34	32
A hereditary syndrome	10	4	6
Colon polyps	30	12	18
CRC call signs			
Presence of blood in the stool	198	97	101
Abdominal pain	40	12	28
Weight loss	130	70	50
Changes in intestinal transit	77	43	34
Tired	50	22	38
Can CRC be asymptomatic ?	52	17	35
Do you know he has ways of screening for CRC	99	43	56
Are you ready to be screened for CRC?	173	79	94
Did you know that colonoscopy is the reference standard for screening	93	42	51

Attitudes

Table 3 shows attitudes towards colorectal cancer screening.

Most people would like to know more about cancer (95.0%). Over 90% agreed that early diagnosis of CRC can improve prognosis and almost 80% agreed that a regular physical exam is helpful in preventing or diagnosing CRC early. While 85.7% would like to have a regular physical exam.

Most of those surveyed would like to make an effort to quit smoking and abusing their alcohol consumption in the future (77%). In addition, 86.8% of participants believed that screening is an effective measure to diagnose CRC that should be widely implemented.

Table 3: Attitudes towards the CRC according to the Likert scale

	Totally agree	**Some what agree**	**Neutral**	**Disagree**	**Not agree at all**
It is important for me to know more about the CRC	91	4	2	1.2	1.8
Early diagnosis of CRC may improve prognosis	80	10	7	2	1
Regular physical examination is helpful in preventing or diagnosing CRC early.	78	2	7.5	2.2	0.3
I will have a regular physical exam	84	1.7	9	3.3	2
I want to quit smoking / abusing alcohol	75	2	8.9	7.9	6.2
Screening for CRC is useful and effective	86	1	9	2.2	1.8

Practice

CRC prevention and early detection practices are presented in Table 4.

Less than 9% of respondents have already participated in screening for CRC, 75% of whom were chronic smokers with a history of CRC in one of the parents and with a slight male predominance (13/20).

70% of subjects would go to a doctor if they did not feel well and 44% of them will begin to undergo a regular physical examination after knowing the risk factors and means of screening for CRC. 42% of participants have actually started to reduce their consumption of alcohol and tobacco.

Table 4: CRC prevention and early detection practices

	ALL	**Men**	**Women**
I have already participated in a screening for CRC	20	12	8
I would go see a doctor if I'm not well	147	70	77
I will have a regular physical exam	93	43	50
Intentional collection of CRC information	78	44	34
I started to reduce my consumption of tobacco and alcohol	89	79	10
I will do the stool blood test	52	32	20

Factors related to knowledge, attitude and screening intentions are presented in Table 5

In univariate analysis, education level, advanced age, monthly income, previous discussions about colorectal cancer screening and risks were statically significantly associated with knowledge of colorectal cancer ($p < 0.05$). Female had a more positive attitude than men [OR (95% CI): 0.6 (0.5, 0.8)]. Family history of cancer facilitated attitude [OR (95% CI): 0.76 (0.54, 1.1)] and high personal income significantly increased attitude scores [OR (CI 95%): 0.65 (0.5, O, 7)]

Table 5: Factors related to knowledge, attitude and screening intentions

		Knowledge				**Attitude**			
		0-15	15-22	OD (95% CI)	P-value	0-22	22-30	OD (95% CI)	P-value
Age	<45 years	23	41	1.07 (0.39-2.91)	0.277	29	35	2.20 (0.85-5.72)	0.082
	> 45 years old	50	96		0.022 *	59	87		0.003 *

Sex	Women	35	78	1.69 (0.65-4.39)	0.143	45	68	0.6 (0.5-0.8)	0.025 *
	Man	51	46		0.148	65	32		0.703
Intellectual level	Illiterate	60	20	5.96 (2.26-15.71)	0.234	47	33	2.92 (1.21-7.07)	0.98
	Primary or higher	90	40		0.043 *	44	66		0.053
Place of residence	Urban	43	85	2.62 (1.02-6.78)	0.0439 *	56	72	2.96 (1.06-8.3)	0.45
	Rural	65	17		0.1	46	36		0.65
Monthly income	<253 th	60	97	2.79 (0.99-7.84)	0.014 *	69	88	0.76 (0.54-1.1)	0.65
	> 253 th	33	20		0.34	19	34		<0.0001 *
Cancer attacks in the family	Yes	80	102	3.83 (1.53-9.6)	0.003 *	73	109	0.65 (0.5-0.7)	0.003
	No	18	10		0.29	15	13		0.457

Barriers to participating in colorectal cancer screening

Among those who had not been screened: 47% said they did not need because they felt good; 33.34% did not know of the existence of such means 20% declared that they had never thought of the disease or of screening. A significant number of participants thought that screening was too painful, unpleasant or inconvenient (20.0%), others that it was very expensive (26%) and some responded that they were afraid of discovering colorectal cancer. (21.0%).

Discussion

This was the first study on the state of knowledge, attitudes and current practices in the diagnosis and screening of CRC in a Moroccan serie. People with advanced age, with a higher education level and family history of CRC had higher levels of knowledge about risk factors and signs of CRC. A positive attitude was observed in women and linked to higher personal income and family history of cancer. In addition, only 9% of participants had ever been screened for CRC. These results provided important information to facilitate participation in the screening program for CRC and other public policies for the prevention of CRC and other cancers.

In this study, the level of overall knowledge (including that of risk factors and the warning signs of CRC) of the participants was 39%, this rate is lower than what was reported in Pakistan, China, Saudi Arabia and Bahrain where the knowledge level of the sample was respectively (44.8%, 63.1%, 66.4%, 56%) [10-13]. In addition, while participants had relatively good knowledge of risk factors, they had less knowledge of warning signs and screening methods.

The most well-known warning signs were the presence of blood in the stool (94.2 %) and weight loss (61.9%), abdominal pain (71.4%) While the change in intestinal transit, asthenia, polyp in the colon were the least recognized signs (36%, 23% and 14%) respectively. These results are consistent with those of the literature reported in studies done in China, Bahrain and Italy [11,13,23]. to note that our study population had relatively low knowledge of the tests used for screening and diagnosis of CRC (47%). For example, in a study in England, only 42% of respondents could list risk factors colorectal cancer and 24% of them were unable to identify the most important call signs for CRC [14]; the correct response rate for knowledge of CRC risk factors was 60% in Malaysia [15]; 55% and 10.4% in Iran [15,16] and 9% in Brunei [18]. While it was 32% in our series. Therefore, this low level of knowledge should lead to suggest the need for further health education. Regarding the factors associated with a higher state of knowledge, our results were consistent with those of the literatures illustrated by an older age [19,20] higher education [19-21], history of cancer in the family [11,19,22,23] and higher personal income [11,22] were linked to higher levels of knowledge. More than 80% would be ready to undergo a screening for CRC this rate joins those of the literature in studies made in China, Iran, Australia, USA [11,16,22,24].

Attitude is the first step towards behavior modification and can be considered its primary predictor. In the present study, participants showed a more positive attitude towards knowing better about CRC (95%) undergoing regular physical exams (86.8%) and making efforts to quit smoking or abusing consumption of alcohol (77%), this number is higher than previously reported studies. Over 80% of participants agreed that diagnosing CRC at an early stage can improve, which is a good sign to help motivate people who implement screening programs. This was consistent with studies previously reported in Pakistan [10], Saudi Arabia [12] and Italy [23]. It was observed that the most common preventive practice was reducing alcohol consumption and tobacco consumption (77%), which is consistent with the results reported in the literature in China (84%) and Pakistan (69%) [10,11]. Our study also showed an overall relationship between knowledge, attitude and screening practice towards CRC like most previous studies [14,18,22,25].

Conclusion

In this study, participants showed good knowledge and attitude towards CRC but their practices in preventing CRC were not up to par. Understanding and recognizing the awareness and attitude regarding colorectal cancer screening and the reasons for low uptake of screening among high-risk populations could help develop appropriate policies for colorectal cancer prevention and control.

Conflicts of interest

The authors declare no conflicts of interest.

Authors' contributions

All authors contributed to the conduct of this work. All authors have read andapproved the final manuscript.

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References

[1] T Lecomte, T André, Y Panis, P Laurent-Puig, F Bibeau, J Taieb. «Cancer du côlon». Thésaurus National de Cancérologie Digestive, 11-2016

[2] RAPPORT D'INCIDENCE DU CANCER AU NIVEAU DE LA RÉGION DU GRAND CASABLANCA:

REGISTRE DES CANCERS de la Région du Grand Casablanca pour la période 2008 – 2012 édition 2016
[3] J. Hakam: Le cancer colorectal dans la région de Marrakech: bilan de 19 ans. Thèse N°1 2017 FMPM
[4] Patel SG, Ahnen DJ. Prevention of interval colorectal cancers: what every clinician needs to know. Clin Gastroenterol Hepatol 2014;12:7–15.
[5] Smith RA, Andrews KS, Brooks D, Fedewa SA, Manassaram- Baptiste D, Saslow D, et al. Cancer screening in the United States, 2018: a review of current American Cancer Society guidelines and current issues in cancer screening. CA Cancer J Clin 2018; 68:297–316.
[6] Tomatis L, Aitio A, Day NE, Heseltine E, Kaldor J, Miller AB, Parkin DM, Riboli E, eds (1990) Cancer: Causes, Occurrence and Control (IARC Scientific Publications, No. 100), Lyon, IARC Press.
[7] Gimeno GA, Hernandez ABN, Nicolas-Perez D, et al (2014). Public awareness of colorectal cancer screening: Knowledge, attitudes, and interventions for increasing screening uptake. Isrn Oncol, 2014, 425787.
[8] Soylar P, Ozer A, Yu¨ksekol OD, etal. Knowledge, attitude, and practice regarding cancer screening tests among health workers in a university hospital in Turkey. J Cancer Educ 2019: 1–6. DOI: 10.1007/s13187-019-01517-2
[9] Siegel RL, Miller KD, Goding Sauer A, et al. Colorectal cancer statistics, 2020. CA Cancer J Clin 2020; 70:145–64.
[10] Iltaf Hussain et al. J Oncol Pharm Practice 0(0) 1–9 Knowledge, attitude, preventive practices and perceived barriers to screening about colorectal cancer among university students of newly merged district, Kpk, Pakistan – A cross-sectional study.
[11] Wang M-Y, Lin G-Z, Li Y, et al. Knowledge, attitudes, preventive practices and screening intention about colorectal cancer and the related factors among residents in Guangzhou, China. Asian Pacific J Cancer Prevent 2017; 18: 3217.
[12] Galal YS, Amin TT, Alarfaj AK, et al. Colon cancer among older Saudis: awareness of risk factors and early signs and perceived barriers to screening. Asian Pacific J Cancer Prevent 2016; 17: 1837–1846.
[13] Nasaif HA and Al Qallaf SM. Knowledge of colorectal cancer symptoms and risk factors in the Kingdom of Bahrain: a cross-sectional study. Asian Pacific J Cancer Prevent2018; 19: 2299.
[14] McCaffery K, Wardle J, Waller J. Knowledge, attitudes, and behavioral intentions in relation to the early detection of colorectal cancer in the United Kingdom. Prev Med. 2003; 36:525–35.
[15] Harmy MY, Norwati D, Noor NM, et al. Knowledge and attitude of colorectal cancer screening among moderate risk patients in West Malaysia. Asian Pac J Cancer Prev. 2011; 12:1957–60.
[16] Mansour-Ghanaei A, Joukar F, Mansour-Ghanaei F, et al. Knowledge about colorectal cancer in northern iran: A population-based telephone survey. Asian Pac J Cancer Prev. 2015; 16:7831–6
[17] Salimzadeh H, Bishehsari F, Delavari A, et al. Cancer risk awareness and screening uptake in individuals at higher risk for colon cancer: A cross-sectional study. BMJ Open. 2016;6: e13833.
[18] Chong VH, Lim AG, Baharudin HN, et al. Poor knowledge of colorectal cancer in Brunei Darussalam. Asian Pac J Cancer Prev. 2015; 16:3927–30.
[19] Taha H, Jaghbeer MA, Shteiwi M, et al (2015). Knowledge and perceptions about colorectal cancer in Jordan. Asian Pac J Cancer Prev, 16, 8479-86.
[20] Zubaidi AM, AlSubaie NM, AlHumaid AA, et al (2015). Public awareness of colorectal cancer in Saudi Arabia: A survey of 1070 participants in Riyadh. Saudi J Gastroenterol, 21, 78-83.
[21] Sessa A, Abbate R, Di Giuseppe G, et al (2008). Knowledge, attitudes, and preventive practices about colorectal cancer among adults in an area of Southern Italy. BMC Cancer, 8, 171.
[22] Christou A, Thompson SC (2012). Colorectal cancer screening knowledge, attitudes and behavioural intention among Indigenous Western Australians. BMC Public Health, 12, 528.
[23] Panic N, Leoncini E, Di Giannantonio P, et al (2014). Survey on knowledge, attitudes, and training needs of Italian residents on genetic tests for hereditary breast and colorectal cancer. Biomed Res Int, 2014, 418416.
[24] McKinney SY, Palmer RC (2014). The influence of gender on colorectal cancer knowledge, screening intention, perceived risk and worry among African Americans in South Florida. J Community Health, 39, 230-8.
[25] Wong MC, Hirai HW, Luk AK, et al (2013). The knowledge of colorectal cancer symptoms and risk factors among 10,078 screening participants: Are high risk individuals more knowledgeable? PLoS One, 8, e60366.