

## RESEARCH ARTICLE

# Colorectal Cancer Awareness and Screening Preference: A Survey during the Malaysian World Digestive Day Campaign

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## Abstract

**Background:** Although the incidence of colorectal cancer in Malaysia is increasing, awareness of this cancer, including its symptoms, risk factors and screening methods, remains low among Malaysian populations. This survey was conducted with the aim of (i) ascertaining the awareness level regarding colorectal cancer symptoms, risk factors and its screening among the general populations and (ii) assessing the public preference and willingness to pay for colorectal cancer screening. **Materials and Methods:** The questionnaire was distributed in eight major cities in West Malaysia during the World Health Digestive Day (WDHD) campaign. Two thousand four hundred and eight respondents participated in this survey. **Results:** Generally, awareness of colorectal cancer was found to be relatively good. Symptoms such as change in bowel habit, blood in the stool, weight loss and abdominal pain were well recognized by 86.6%, 86.9%, 83.4% and 85.6% of the respondents, respectively. However, common risk factors such as positive family history, obesity and old age were acknowledged only by less than 70% of the respondents. Almost 80% of the respondents are willing to take the screening test even without any apparent symptoms. Colonoscopy is the preferred screening method, but only 37.5% were willing to pay from their own pocket to get early colonoscopy. **Conclusions:** Continuous cancer education should be promoted with more involvement from healthcare providers in order to make future colorectal cancer screening programs successful.

**Keywords:** Awareness - colonoscopy - colorectal cancer - Malaysia - screening

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## Introduction

Colorectal cancer is common in Malaysia, both in men and women. In retrospect, incidence of colorectal cancers in Malaysia has been reported in the international journal since 1965 (Lim, 2001). According to the Malaysian National Cancer Registry, in year 2003, colorectal cancer is the top and third most frequently reported cancer in both males and females respectively, in West Malaysia (Lim et al., 2004). More recently, report from the National Cancer Patient Registry-Colorectal Cancer stated that from year 2008 to 2013, overall incidence rate for colorectal cancer was 21.3 cases per 100,000 populations in Malaysia (Radzi et al., 2014). More worrying was the fact that the overall mortality rate was 9.8 cases per 100,000 populations during the same period of time with men having higher mortality rate than women.

Despite the increasing incidence of colorectal cancer, awareness on colorectal cancer, including its symptoms, risk factors and screening method, remains low in Malaysian populations. Hashim et al. (2011) conducted a survey on knowledge about colorectal cancer among patients presented with rectal bleeding in a Malaysian university hospital. They found that majority of surveyed

patients were unable to identify symptoms of colorectal cancer except for rectal bleeding. Knowledge on risk factors for the same cancer was also found to be low. In another study by Al-Naggar and Bobryshev (2013), a large number of university students in Malaysia did not know about any specific methods for colorectal cancer screening. Furthermore, a study by Harny et al. (2012) reported only 7% from nearly 2000 healthy respondent were aware of colorectal cancer screening. Apprehension and embarrassment were found to be the primary reasons for not participating in the screening.

Since there is no population-based screening program available for colorectal cancer in Malaysia, it is unknown as to what extent the Malaysian populations would be receptive to colorectal cancer screening. The information on preferred colorectal cancer screening tools among Malaysian populations needs to be identified if the screening uptake is to be increased. The primary aim of this study is to ascertain the awareness level towards colorectal cancer symptoms, risk factors and its screening among general populations in Malaysia. Secondly, the authors would like to assess the public preference and willingness to pay for colorectal cancer screening.

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## Materials and Methods

This is a prospective cross sectional study using a self-administered questionnaire to collect data of interest. The questionnaire was adapted from Harewood et al. (2009), and sought information regarding;

- Respondents' demographic
- Awareness on cancer statistic
- Awareness of colorectal cancer symptoms and risk factors
- Understanding of the concept of screening
- Preferred method of screening test
- Willingness to pay for colonoscopy as a screening tool
- The questionnaire comprised of 22 questions and took

**Table 1. Socio-demographic Characteristics of Respondents**

Characteristics	n	(%)
Gender		
Female	1366	56.7
Male	1042	43.3
Age, years old		
Less than 50	2111	87.7
More than 50	297	12.3
Ethnicity		
Malay	916	38
Chinese	1101	45.7
Indian	320	13.3
Others	71	3
Level of Education		
Primary	136	5.6
Secondary	755	31.4
Tertiary	1412	58.6
No formal education	105	4.4
Smoking status		
Yes	234	9.7
No	2163	89.8
NA	11	0.5

NA = not available

approximately ten minutes to complete. Permission to use the questionnaire has been obtained from the original author.

The questionnaire was distributed during the World Health Digestive Day (WDHD) campaign in Malaysia. This annual event organized by the Digestive Health Advisory Board (DHAB) to increase general public awareness of prevention and therapy towards healthy gut. Several booths were setup at various shopping centers throughout the country during the campaign period. Those who visited the campaign booth were offered to complete the study questionnaire after reading and consenting to the study information sheet. Potential respondents with known case of colorectal cancer, had first degree family members with colorectal cancer, history of familial adenosis polyposis or chronic inflammatory bowel disease were excluded. All data was collected anonymously.

Statistical analyses were performed on the data collected using SPSS software (version 20.0) and the results of the survey were presented in percentage (%). The conduct of this study has been approved by Medical Research Ethics Committee, Ministry of Health Malaysia (NMRR-15-474-25726).

## Results

Two thousand four hundred and eight respondents voluntarily answered the questionnaires that were distributed at eight different cities throughout peninsular Malaysia. In northern region of Peninsular Malaysia, the cities involved were Bayan Lepas and Georgetown in Penang and also Sungai Petani in Kedah. Cities in central region were Ipoh, Perak as well as Damansara and Petaling Jaya in Selangor. In southern states were Bandaraya Melaka in Malacca and Johor Bahru in Johor. Details of respondents' socio-demographic characteristics were presented in Table 1. More than half of the respondents were female (56.7%) and aged less

**Table 2. Respondents awareness on colorectal cancer.**

Questions	Response options	Responses (n=2408), %
Colorectal cancer is among the top 3 cancers in Malaysia.	Agree	87.5
	Disagree	12.5
Colorectal cancer usually starts from polyps in the colon or rectum.	Agree	87.7
	Disagree	12.3
Colorectal cancer often starts without showing any symptoms.	Agree	72.8
	Disagree	27.2
Symptoms related to Colorectal Cancer?	Change in bowel habit	86.6
	Blood in the stool	86.9
	Weight loss	83.4
	Abdominal pain	85.6
Risk factor for Colorectal Cancer?	Positive family history	68.4
	Obesity	59.1
	Old age	56.4
	Low fibre diet consumption	72.3
	Inflammatory bowel disease	77.5
Screening can find cancer early when treatment can be the most effective.	Agree	91.3
	Disagree	8.7
Late detection of late stage of bowel cancer carries poorest survival rate.	Agree	86.3
	Disagree	13.7

**Table 3. Respondents Willingness for Screening and Preferred Colorectal Cancer Screening Method**

Questions	Responses (n=2408), %
Willing to have a screening test for the bowel cancer, even without any symptom?	
Yes	79.5
No	18.5
No answer given	2.0
Preferred Colorectal Cancer screening method if keen for screening?	
Faecal blood test	31.6
Sigmoidoscopy	11.5
Colonoscopy	36.5
Unsure	20.4
If recommended to have colonoscopy, what will you do?	
Will pay RM800 (own money) and have a test within a week, %	37.5
Will wait for 6-8 months for free test, %	46.5
Not prefer to have test at all, %	13.6
No answer given, %	2.4

than 50 years old (87.7%). Majority of the respondents were Chinese (45.7%), followed with Malay (38.0%), Indian (13.3%) and other ethnicity (3.0%). Most of the respondent received formal education with 58.6% had tertiary education. Only 4.4% of respondent reported not receiving any formal education. Almost 90% of the respondents were non-smoker. However, data on smoking status is not available for 11 respondents.

Majority of the respondents (87.5%) were aware that colorectal cancer is among the top 3 cancers in Malaysia (Table 2). When asked about the origin of colorectal cancer, 87.7% knew that the cancer usually starts from polyps in the colon or rectum. A small proportion of the respondents (27.2%) disagreed that colorectal cancer may develop without exhibiting any symptoms. In terms of colorectal cancer manifestations, more than 80% of respondents were aware that change in bowel habit, blood in the stool, weight loss and abdominal pain were the symptoms related to colorectal cancer. Despite this, most of respondents were surprisingly, not well aware of the risk factors for colorectal cancer. Only less than 70% of respondent can identify 'positive family history', 'obesity' and 'old age' as the risk factors for colorectal cancer.

Another notable finding was excellent public awareness towards the importance of colorectal cancer screening. A substantial number of respondents (91.3%) agreed that screening test is able to detect the cancer early while 86.3% respondents had the same opinion that late detection of cancer carries poorer survival rate. Respondents' willingness and preferred screening test for colorectal cancer was presented in Table 3. Interestingly, almost 80% of the respondents' were willing to undergo a screening test for the bowel even though without having any symptoms. On preferred screening method, 36.5% of respondents favoured to have colonoscopy, while 31.6% and 11.5% opted for faecal occult blood test and sigmoidoscopy respectively. Respondents were also asked on their willingness to pay for colonoscopy if suggested by their physician. Less than half of the respondents (46%) would rather choose to wait between 6-8 months to get free procedure. Only 37.5% were willing to pay from their own pocket to get early colonoscopy done whereas

small proportion of respondents was unwilling to undergo colonoscopy at all.

## Discussion

In order to set up an effective national colorectal cancer screening program, it is imperative to have a clear picture of what do public knows about this cancer and their preference towards the screening program. From this study, awareness among studied population on colorectal cancer was found to be relatively good. This is based on high percentage of respondents that acknowledged colorectal cancer as one of the common cancer in the country. In addition, over 70% of the respondents were aware that colorectal cancer usually starts from polyps in the bowel and can be presented without any symptoms.

This positive finding was also seen on awareness towards warning symptoms related to colorectal cancer. Symptoms such as change in bowel habit, blood in the stool, weight loss and abdominal pain were well recognized by majority of the respondents. However, this finding was conflicting with some previous studies (Hilmi et al., 2010; Loh et al., 2013; Wong et al., 2013). Loh et al. (2013) in their community-based study carried out in five rural/suburban areas in which their findings showed that awareness of warning signs for colorectal cancer were poor. Most of their study respondents were only able to identify 2 or 3 of the nine warning signs listed. This stark difference was probably due to the fact that current study conducted in urban areas where health related information was easily available and accessible. Most of the health promotion campaigns were held in major cities, hence contributed to a better awareness among urban population. Perhaps, future awareness activities need to be targeted more to the rural / suburban areas to boost public awareness.

Despite high awareness on colorectal cancer symptoms, awareness regarding risk factors associated with colorectal cancer remains low. Common risk factor such as positive family history, obesity and old age were cited by less than 70% of the respondents. This finding is in line with other local studies which found much lower

awareness level in their respective cohort (Hilmi et al. 2010; Su et al. 2013). The above-mentioned risk factors were known for positive association with the colorectal cancer. A study from Taiwan found an increased risk for advanced cancer among immediate family members of colorectal cancer patient who has been screened (Tung and Wu, 2000). Obesity was found to increase the risk of colorectal cancer. Ma et al. had conducted a systematic review on 54 studies assessing the association of obesity with the risk of colorectal cancer (Ma et al., 2013). They concluded that both of general obesity (measured using Body Mass Index) and central obesity (measured using waist circumference) were highly linked to the colorectal cancer. Colorectal Cancer incidence also strongly related to age. In the United Kingdom, over 70% of newly diagnosed colorectal cancer cases were among those aged 65 and older (Office for National Statistic, 2014). Recently, local cancer registry observed similar trend in which more than 80% of colorectal cancer occur in people aged 50 or older (Radzi et al. 2014). The same registry also documented the proportion of colorectal cancer increased with age, which peak between 60 and 64 for men and between 55 and 59 for women. Consequently, failure to acknowledge these common risk factors could hamper the turn up for future colorectal cancer screening program. One of the solutions is to engage the primary care doctors and family physician in identifying and recommending high risk patients for colorectal cancer screening. The effectiveness of the family doctor's role has been proven in previous studies (Weller et al., 2009; Hewitson et al., 2011) and should be the way forward to increase awareness and cancer screening uptake.

Many studies found that positive family history of colorectal cancer as a motivational factor to undergo cancer screening test (Hlayaty et al., 2005; Delgado-Plasencia et al., 2009). Interestingly, though current studied population did not have any first degree relatives diagnosed with colorectal cancer but yet almost 80% are willing to take the screening test even without any apparent symptoms. Such positive attitude indicates that the studied population are ready and willing to partake in future colorectal cancer screening program. Despite its invasive procedure, surprisingly, colonoscopy was a preferred tool for colorectal cancer screening, followed by faecal occult blood test whereas sigmoidoscopy was the least preferred method. The above-mentioned screening techniques were recommended option for colorectal cancer screening in Asia (Sung et al., 2015). Colonoscopy for example, is regarded as the gold standard technique as it is able to visualize the entire bowel and at the same time allowing removal of any visualized pre-cancerous lesion. However, this procedure is not feasible as a mass screening technique owing to its invasive nature, requiring skilful operator, limited availability and costly. In addition, only 37.4% of respondents willing to pay to get colonoscopy done while another 46.7% respondents were rather wait for several months and get it done freely later from government hospital. Thus, the appropriate use of colonoscopy is essential to maximise the screening rate. Based on the above results, the authors suggest that colonoscopy should be prioritized to the high risk group

population, especially those with positive family history and older age group. Tan et al. also suggested that priority given to patient presented with rectal bleeding and iron deficiency anemia (Tan et al., 2002). Simultaneously, concerted effort is needed to increase numbers of skill operators and availability of the procedure throughout the country. In certain Europe countries, nurses have been trained to perform endoscopy to reduce patient's waiting time (Singh et al., 2014; Joseph et al., 2015). On the other hand, faecal occult blood test can be utilized for mass screening among low risk or asymptomatic patients.

Certain limitation of this study should be noted. Respondents in current study were mostly from big city, thus the results of the present study are more representative of urban rather than a rural population. They may be differences in terms of level of awareness and willingness to participate in cancer screening program between the two populations owing to limited access to health information and services as mentioned earlier. Other than that, the respondents in this study were also been exposed to the information and materials that promotes awareness and knowledge on colorectal cancer during the campaign period. Nonetheless, this study was a community-based study, which can be perceived as more generalized than those conducted in clinics or hospitals. Thus, the results from this study should be considered vital when considering the initiation of a national colorectal cancer screening program in near future. Secondly, although the survey questions were adapted from other study (Harewood et al., 2009), it had not been properly validated to be used in local setting.

Overall, public awareness on colorectal cancer, symptoms and concept of cancer screening were relatively good. Majority of studied population were also willing to participate in future cancer screening programs even though asymptomatic. However, not many are willing to pay for the colonoscopy cost and rather wait for several months to get it done freely. In order to make the future colorectal cancer screening programs successful, cancer educations should be promoted to rural populations with more involvement from family physicians and primary care doctors.

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