

## RESEARCH ARTICLE

# Perceptions of Malaysian Colorectal Cancer Patients Regarding Dietary Intake: A Qualitative Exploration

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### Abstract

**Background:** Changes in dietary practices are known to be associated with changes in the health and disease pattern of a population. This study aimed to qualitatively explore the perception of colorectal cancer patients regarding causes of colorectal cancer and the influence of diet. **Materials and Methods:** Twelve respondents from three major ethnicities in Malaysia were selected from the quantitative study on dietary pattern and colorectal cancer carried out earlier in this study. In-depth interviews (IDI), conducted from April until June 2012, were mainly in the Malay language with additional use of English and continued until the saturation point was reached. All interviews were autorecorded so that verbatim transcriptions could be created. **Results:** Causes of colorectal cancer were categorized into internal and external factors. The majority of respondents agreed that there is an association between Western foods and colorectal cancer. Malaysian traditional diet was not related to colorectal cancer as less preservative agents were used. Malaysian diet preparation consisting of taste of cooking (spicy, salty and sour foods) plus type of cooking (fry, grilled and smoked) were considered causes of colorectal cancer. All respondents changed their dietary pattern to healthy food after being diagnosed with colorectal cancer. Advice from doctors regarding suitable food for colorectal cancer was useful in this regard. **Conclusions:** Eating outside, use of food flavoring ingredients and preservative agents were considered to be the main factors causing colorectal cancer. All respondents admitted that they changed to a healthy diet after being diagnosed with colorectal cancer.

**Keywords:** In-depth interview - dietary pattern - colorectal cancer - ingredients - cooking style

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### Introduction

Colorectal cancer (CRC) is the third most common cancer in men (663,000 cases, 10.0% of the total cancers) and thesecond most common cancer in women (570,000 cases, 9.4% of the total cases) worldwide. Incidence rates of CRC vary 10-fold in both sexes worldwide, the highest rates being estimated in Australia/New Zealand and Western Europe, the lowest in Africa (except Southern Africa) and South-Central Asia. Within Asia, the incidence rates of CRC vary widely and are uniformly low in all South Asian countries and high in all developed Asian countries. The burden of CRC has risen rapidly in some economically developedAsian countries like Japan, South Korea and Singapore (Mohandas 2010). Cancer of the large bowel, which includes cancer of the colon, rectum and anus, the commonest cancer among men in Peninsular Malaysia, accounting for 14.5% of all cancers. Among women, large bowel cancers ranked third, accounting for 9.9% of cancers (Lim et al., 2008).

Cancer is considered as an incurable disease that is related to magic, bad luck, or a punishment from God, and more or less the same scenario is observed in developing countries (Farooqui et al., 2011). Individuals

possess multi-faceted cognitive representations of disease including cancer. These “illnessre presentations” consist of various beliefs, including causal attributions for the disease, and are thought to motivate and shape health-related behavior (McWhirter et al., 2011).

As Malaysia enters the next millenium, it is timely to appraise the current food and nutrition situation in the country. Marked socio-economic development has been attained since the country’s independence in 1957. Rapid pace of industrialization and urbanization especially in recent decades, have brought about changes in the lifestyle of Malaysians. These changes include dietary habits and food preferences which, in turn, have bearings on food production, food imports, food quality and safety from production to ready-to-eat stage. Changes in dietary practices are known to be associated with changes in the health and disease patterns of the population. Like other rapidly developing countries, Malaysia is said to be in a nutrition transition having shed off “old” problems of gross protein-energy malnutrition for a new array of challenges characterized by increasing intake of total calories, animal products and simple carbohydrates (Khor et al., 1998)

Malaysia is well known globally for its unique multi-racial community with different social, cultural and

**Table 1. Demographic Characteristics of Respondents**

Factor		N (%)
Gender:	Male	8 (66.7)
	Female	4 (33.3)
Ethnic:	Malay	6 (50.0)
	Chinese	5 (41.7)
	Indian	1 (8.3)
Age (year):	Mean (standard deviation)	52.42 (7.28)
	Minimum	40
	Maximum	62
Marital status	Married	11 (91.7)
	Widower	1 (8.3)
Occupation:	Government	3 (25.0)
	Non government	1 (8.3)
	Self employed	2 (16.7)
	Pensioner	4 (33.3)
	Unemployed	2 (16.7)

educational background. There are three major ethnicities in Malaysia; Malay, Chinese and Indian. Each of the races have their own unique traditional food and dietary pattern. Thus, it is important to identify the dietary pattern of colorectal cancer patients. The current study is aimed to explore the perception of colorectal cancer patients on the causes of colorectal cancer and the Malaysian dietary pattern related to colorectal cancer.

## Materials and Methods

This study was approved by the Research and Ethics Committee of the Universiti Kebangsaan Malaysia Medical Centre (UKMMC). A few studies looking at the lifestyle risk factors for colorectal cancer have been conducted. This study focused more on the qualitative aspect of the dietary pattern and its association with colorectal cancer. The participants recruited in this in-depth interview (IDI) were chosen from the three major ethnic groups in Malaysia, namely Malay, Chinese and Indian. The interviews were carried out from April until June 2012. The respondents were purposively selected from the quantitative study on dietary pattern and colorectal cancer carried out earlier in this study.

Each interview took approximately 30 minutes and was carried out by the researcher. Researcher made a phone call to each respondent to make an appointment to set a date for the interview. Each respondent gave their consent to be interviewed. Researcher started off the interview by asking probing questions as an ice breaking session before proceeded with structured questions as planned. The interviews continued until the saturation point was reached, that is when no new information was obtained from subsequent interviews. Interviews were mainly conducted in the Malay language with additional use of English language for respondents who preferred to communicate in both languages. All interviews were autorecorded so that verbatim transcriptions could be created.

### Study tool

The questions used in this IDI were constructed to explore in detail the respondents' dietary pattern (explanatory method). The core topics addressed in the

in-depth interviews are as stated in Table 1: 1) Causes of cancer. Each respondent was asked to describe his or her personal cause of colorectal cancer. 2) Perception about Western food and colorectal cancer. Respondent was asked how Western food causes colorectal cancer. 3) Perception about Malaysian traditional diet and colorectal cancer. Respondent was asked how traditional diet could influence colorectal cancer. 4) Malaysian dietary habits and colorectal cancer. The questions were focused on taste and type of cooking that may lead to colorectal cancer. 5) Perception on changes in dietary pattern. Respondent was asked what changes he/she made after being diagnosed with colorectal cancer. 6) Sources of nutrition knowledge.

## Results

The twelve respondent selected consisted of 8 males and 4 females, aged 40-62 years old. Six of them were Malays, 5 Chinese and 1 Indian. Majority of the respondents (n=11) were married with only 1 widower. Seven of the respondent are still working while four were pensioners and two were unemployed.

### Causes of colorectal cancer

Each of the respondents gave different reasons when asked regarding personal causes of colorectal cancer. Some of the respondents listed more than one causes. The reasons were categorized according to subthemes of: internal and external factors. The internal factors are; *gastric, anxiety, stress, family history, imbalance of immune system and difficulty in defecation. The external factors are smoking, drink alcohol and dietary habits.*

A person who was diagnosed with long standing gastric and feeling of anxiety and stress may cause colorectal cancer to occur: “.....I used to have long standing **gastric pain** since I studied in the university....year 1979, 80,81..... **stressful** life as a student....eating at no specific time, no specific place to sleep....Gastric problem goes on, to overcome it, I took medication...I always on gastric medication.....” [R1, 62, Pensioner]; “.....**anxiety**....feel scared, nervous.....I am a perfectionist guy.....I want to do something to be tip top.....” [R1, 62, Pensioner].

Having family history of colorectal cancer, imbalance immune system and difficulty in defecation can cause colorectal cancer: “.....I think 40% due to the food we take.....the rest 60% due to **family history**, my mom has colorectal cancer..” [R6, 52, Self employed]; “.... as I know, excess **toxin** in our blood.....this toxin comes from the food we take....” [R11, 52, Government Servant]; “.....**lack of immune system**.....not so strong.....that is the time we can get cancer.....actually for 1-2 months I have **constipation**.....I thought its due to lack of certain dietary intake.....when I take a lot of fruits.....easy for me to pass motion...until later I noticed blood when I pass motion.....” [R12, 50, Private Employee].

Unhealthy lifestyle such as smoking and drink alcohol can also cause colorectal cancer: “.....I also don't know.....now I still **smoke**, but the amount has reduced (20 cigarettes per day)...I used to smoke 40-50 cigarettes per day....” [R3, 58, Unemployed]; “.....I used to drink **alcohol**.....and also **smoke** cigarettes....but now

*I stop taking both alcohol and cigarettes.....”* [R4, 41, Unemployed].

Dietary habit namely the food consumed and eating outside may contribute to colorectal cancer. “*causes of colorectal cancer of course is dietary habit.....I was a teacher, my wife passed away....men don't know how to cook.....always eat outside.....*” [R1, 62, Pensioner]; “*.....no specific reason.....maybe due to the food.....as what I have been told, everybody has a cell which can turn out to be cancer, it is just a matter of the cell is active or not.....the cell can become active if we take food that promote it to become active.....*” [R2, 45, Government Servant]; “*.....I think...I eat outside a lot...almost 90%, I took outside food after my mother passed away.....*” [R5, 57, Pensioner].

#### Association between Western food and colorectal cancer

Majority of respondents perceived that Western food is unhealthy in terms of its ingredients and preparation: “*.....I think Western food is not good for health.....I think there is connection between Western food and colorectal cancer but I don't know how.....*” [R2, 45, Government Servant]; “*.....I think from the aspect of the ingredients of the Western food....it must have the preservative agent.....*” [R9, 55, Government Servant]; “*.....the Western food have lots of fats, oily.....not good for health.....*” [R10, 56, Pensioner]; “*.....maybe it has the external additive.....that is causing the cancer.....the preservative agent used.....the Western food takes time to reach our place.... need something to preserve it....so it will not damage or expires.....*” [R11, 52, Government Servant].

#### Association between Malaysian traditional diet and colorectal cancer

Most of the respondents agreed that if we still practice traditional diet, the chances of getting colorectal cancer will be small: “*.....nowadays, we eat mixture of foods.....that can cause cancer.....hmmm....I do not know (how traditional diet can prevent colorectal cancer specifically).....*” [R3, 58, Unemployed]; “*.....if we still practice traditional diet, I think only a few people will get colorectal cancer....but, today, mainly our community like to eat mixed food (sometimes Malaysian, sometimes Western)”* [R4, 41, Unemployed]; “*.....maybe if we practiced traditional diet, I think less people will get colorectal cancer....but, today, our food contains many chemicals.....*” [R7, 40, Self-employed]; “*.....I think no people will get colorectal cancer before.....previously we eat all fresh food....no chemicals were used....but now, everything instant....I don't know what chemical agents they used to preserve the food.....*” [R8, 61, Pensioner].

#### Association between Malaysian dietary pattern and colorectal cancer

Respondents were asked regarding the taste and type of cooking of the Malaysian diet. There were mixed answers given by the respondents.

“*.....for the taste of cooking....I think it is hot.... if it is spicy, it will cause cancer.....salty.....also can cause cancer.....if too much salt .....I do not think sweet and sour will cause cancer.....for the type of cooking.....*

*fry.....using the oil frequently.....grilled...the food is not well cooked.....plus the smoked.....*” [R10, 56, Pensioner]; “*.....for the taste of cooking.....spicy...if you eat mutton curry.....the gravy is thick and oily...all this contains fat....and if you eat too much fat, and drink less water .....the problem comes when the colon becomes static.....I don't know how sweet and sour caused cancer.... for the type of cooking.....fry and grilled.....it is not hundred percent cooked...maybe there is a carcinogen in the food.....plus the smoked.....*” [R12, 50, Private Employee]; “*.....for the taste of cooking....I think..... sour, salty and spicy can cause colorectal cancer.... and for the type of cooking....fry....smoked....can cause cancer because part of the food is burned.....grilled..... using carbon.....*” [R2, 45, Government Servant].

#### Changes in dietary pattern after diagnosed with colorectal cancer

The respondents admitted that they changed to a healthy dietary pattern, avoiding the risky taste of cooking and type of cooking mentioned earlier: “*.....I have changed the dietary pattern....for the drink.....I used to drink and eat outside before I was diagnosed with colorectal cancer.....now....I don't eat oily food....I don't eat red meat...frequently eat chicken....I only take the chicken bone to make soup..... most of the vegetable I eat....I will boil it first.....*” [R4, 41, Unemployed]; “*.....I eat soup..... less fry, curry and spicy food.....I cooked myself.....less oil....I used to eat outside.....because I work....I don't have time to cook.....now I eat more at home.....*” [R7, 40, Self-employed]; “*.....my dietary pattern before I was diagnosed with colorectal cancer...85% I eat outside.... only 15% eat at home....now I eat at home, more safe and hygienic.....I still eat red meat maybe once a month..... but before I know I have colorectal cancer.....I eat red meat once a week.....I eat chicken, fish, seafood, no problem.....now I take more vegetables and fruits.....*” [R12, 50, Private Employee].

#### Information on suitable food for colorectal cancer patients

Majority of the respondents agreed that information regarding the suitable food for colorectal cancer patients were diverse and there was no formal information given to them in the beginning: “*.....the doctor asked me to eat more fruits and vegetables...the doctor advised me to eat less red meat and fish....*” [R3, 58, Unemployed]; “*.....if I listen to my friend's advice...things will get worst.....each of my friends have their own opinion..... the doctor don't say much.....I also get the information from the newspapers.....I rarely surf the internet.....*” [R6, 52, Self-employed]; “*.....I get the information by asking people around me....I also read books....plus the advice from the doctor.....I asked other colorectal cancer patients.... they advised to eat lots of boiled food.....less fry.....*” [R7, 40, Self-employed].

## Discussion

Many of the qualitative studies done on colorectal cancer were using focused group discussion as this will help the researchers to get more information at one time.

However, in this study, the researcher decided to conduct an IDI due to logistic problem to get all the respondents at one time and to get in-depth information from each individual. Study by Satia et al. (2000) stated that qualitative interviews are used to elicit in-depth opinions and views regarding various issues from the participant's perspectives.

The recent paradigm regarding cancer causation is that interactions between individual genetic susceptibility and lifestyle factors, including diet and nutrition, are responsible. Additionally, one study stated that cancer was a natural step in the aging process and therefore almost inevitable "based on your luck". "Stress of life" which could not be prevented, was also viewed as a contributor to cancer (Elmubarak et al., 2005). In this study, external and internal causes of colorectal cancer were given by the respondents during interview.

Majority of the respondents reported that usage of preservative and chemical agents was the main culprit for colorectal cancer nowadays. As the technology in food industries becomes well-established, the use of nanotechnologies also would have an impact to our life later as it is a long process to see the effects. People now are busy with their careers and they prefer to eat outside or buy fastfood as it will save them money and time. Respondents also agreed that practice of traditional diet will cause small risk of getting colorectal cancer. Based on the Malaysian diet, taste of cooking (spicy, salty and sour) and type of cooking (fry, grilled and smoked) are the main contributors to colorectal cancer.

Individuals who believed in the connection between diet and cancer have been found to be more likely to make healthful dietary changes. Although many of the participants reported that they believed in a diet-cancer connection and had made dietary changes, these beliefs may be different throughout the life cycle and the cancer survivorship cycle (Reedy et al., 2005). This statement supported the findings in this study as the Chinese and Indians will try to adhere to the healthy diet after they were diagnosed with colorectal cancer. However, some of the Malays will continue having the same diet before they were diagnosed with cancer but in smaller portion and less frequent consumption.

This study has its own limitations. Firstly, the data, collected in one clinical setting, cannot necessarily be generalized to the nationwide. Secondly, the sample size was small and not representative of each gender and ethnicity in Malaysia. Thirdly, because of the purposive samples, it is also possible that it was not representative of our population as a whole (Shokar et al., 2005). Furthermore, it could not be ruled out that some responses were influenced by the respondents "answering to please" (Dyer et al., 2004).

In conclusion, from this study, the main findings showed that almost 80% of the respondents agreed that eating outside, use of food flavorings ingredients and preservative agents were the main factors causing colorectal cancer. All respondents admitted that they changed to a healthy dietary pattern after being diagnosed with colorectal cancer.

Although this IDI focused more on the cause of

colorectal cancer by the dietary pattern, the respondents also mentioned about the lifestyle factor, the importance of early detection, positive thinking for each colorectal cancer patient plus the correct dietary information from the dietician to guide them with a correct diet according to the food pyramid. Therefore, when we discuss on any type of cancer, holistic approach should be used by the medical team to help the cancer patients especially the colorectal cancer patients to be positive thinkers for their own survival.

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