

## EXPLORING BARRIERS OF CARDIOVASCULAR DISEASE PREVENTION AMONG WOMEN WITH HYPERCHOLESTEROLEMIA

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### Abstract

**Introduction:** Hypercholesterolemia is one of major risk factors that contribute to the development of cardiovascular diseases (CVD). The previous study showed that the prevalence of hypercholesterolemia had an increasing trend among women as compared to men. Therefore, the main objective of this study was to explore the barriers and challenges faced by women with hypercholesterolemia in the prevention of CVD risk factors. **Methodology:** A qualitative study was designed to explore and understand the barriers for CVD prevention among women with high cholesterol level. A total of 13 women with hypercholesterolemia in their blood were detected during a routine medical screening by a primary health care clinic at the International Islamic University Malaysia, in Kuantan, Pahang. The women were interviewed. All interviews were audio recorded, transcribed, coded and analysed by using NVIVO Version 12 software. **Findings:** Five barriers were identified and divided into two categories, namely personal barrier (time-related barrier, lack of support, poor motivation and misconception) and environmental barrier (lack of accessibility to healthy food). **Conclusion:** This study highlighted women's perceptions on barriers that influence their abilities to prevent cardiovascular risk factors. Consequently, intervention strategies were proposed to address CVD risk and overcome the barriers.

**Keyword:** cardiovascular disease, women, barriers, hypercholesterolemia.

### INTRODUCTION

Many years ago, cardiovascular disease (CVD) was the main cause of death in Malaysia and is becoming a great threat in public health with coronary heart disease (CHD) and stroke; hence, ranking high among leading causes of death. CVD involves ischemic heart disease, cerebrovascular disease (stroke), peripheral artery disease, and atherosclerosis of the aorta (Miller, 2016). Common CVD factors includes smoking, being overweight and obese, hypercholesterolemia and diabetes mellitus (Institute of Public Health (IPH), 2006). Apart from smoking, about 80% of ischemic heart disease and cerebrovascular disease may be due to other behavioural risk factors like physical activity and dietary intake (Lee et al., 2001). Unfortunately, the prevalence of lifestyle-related diseases, such as hypertension, diabetes, overweight and obesity have increased significantly (Institute of Public Health (IPH), 2006). A matter of even more concern is that 47.7% of Malaysians aged between 18 and above were diagnosed with hypercholesterolemia in 2015, which was higher as compared to 32.6% in 2011 (Ministry of Health (MOH), 2015).

Although CVD is greatly emphasised in males, it also has similar effects on females. In fact, CVD risk in women multiplied enormously when they reached menopause (Kannel et al., 1977; Eaker et al., 1993). According to the National Cardiovascular Disease Registry in Malaysia (2011-2013), female patients had a higher hospitalisation and 30-day mortality for acute coronary syndrome as compared to male patients (MOH, 2016). Another study showed that ischemic heart disease contributed 19.2% of the cause of death in men and 21.2% in women (Sharma & Gulati, 2013).

By modifying the risk factors, the number of clinical events and premature death prevalence in those with established CVD or have a high risk of CVD was reduced (George et al., 2016). However, the mortality rate due to CVD is still increasing despite the numerous initiated interventions and widespread awareness done by the Malaysian authorities. This might be due to various barriers and factors that have prevented the Malaysian population from reducing the CVD risk factor. Therefore,

this study is aimed to identify and understand factors perceived in the prevention of CVD risk among female patients who were presented with hypercholesterolemia.

## METHODOLOGY

This study was conducted at the International Islamic University Islam, Family Health Clinic (IIUM FHC), in Kuantan, Pahang. It is a primary care clinic that caters for the health of IIUM staff and the surrounding public community in Kuantan district, Pahang. The clinic receives about 150 patient visits daily and provides healthcare services to all outpatient cases, including women and child.

A qualitative study design was used to explore and understand the barriers for CVD prevention among women with hypercholesterolemia. Face-to-face in depth interviews (IDI) were conducted from March to May 2018. Participants for the study were identified from medical records in the clinic. A purposive sampling was used to select participants who were eligible and fulfil the study objectives. Therefore, women who had recent blood tests (within the last 6 months) with high total blood cholesterol (TC) level of more than 5.2 mmol/L and low-density lipoprotein (LDL) level of more than 4.9 mmol/L were identified. Participants were invited to participate in the study by phone, and were informed about the research protocol and given an appointment for the interview session. A written consent for the audio recording and interviews was obtained from all participants. They were assured regarding the confidentiality and anonymity of their participation. All participants signed an informed consent form as evidence to participate in the study and allow the publication of the study findings.

Ethical approval was obtained from the IIUM Research Ethics Committee, (IREC). The interview guide was developed based on literature review and used as a guide for the interview session. The respondents were interviewed with open-ended questions for about 30 min to 45 min. It covered the participant's awareness regarding their barriers of CVD prevention. The interview session was conducted using the national language of Malaysia, *Bahasa Melayu*.

The interview session was conducted in one of the IIUM FHC consultation rooms. Two researchers, one research assistant, and a scheduled participant presented during the data collection. Due to time and room limitations, the session was only conducted on every Tuesday afternoon from 2.00 pm to 4.00 pm, except for two participants whose session was held on Tuesday morning since that was the only time that they could spend for the study.

Important points were noted, especially the nonverbal cues, and recorded on a digital Panasonic audio recorder for subsequent transcription. The recruitment of participants was stopped when saturated data were consensually reached. A total of 13 women participated in the study. All recorded interviews were re-listened for three times and then transcribed verbatim in Microsoft word. The transcripts were transferred to Nvivo-12 software and analysed using thematic analysis. The data were independently and repeatedly read to arrive to the coding framework. The research team reviewed and discussed the emergent themes and subthemes from coded data. Discrepancies in coding were resolved by group consensus. The list of codes and themes was finally agreed upon.

## FINDINGS

Five elements that act as barriers to CVD prevention were identified. They were divided into two categories, namely personal barrier and environmental barrier. The most common personal barriers mentioned were time-related, poor family support, lack of motivation and misconceptions. However, most of the respondents shared that time-related factor became the main reason for health prevention. The time-related barriers were divided into two categories, namely lack of time for physical activities and long waiting time at the health care centre.

### **Lack of time:**

It was apparent that most women complained that lack of time was more physically active and due to busy schedule, either for those who are working outside or housewife. For employed women, in addition to their occupation, they need to fulfil their family responsibilities as well as household chores that left them with little time to become fit.

*"But since I came back to work in the evening, it took me a while to cook. Because my husband wants to eat before dawn. So, when I exercise in the evening, I miss it already. That's the problem."*  
(Respondent 3)

Although some of them might have good awareness with regard to the guidelines, however, they were unable to do so due to time constraint.

*“Erm, diet, exercise. Doctor recommend going for exercise three times a week. But limited time became the reason.”* (Respondent 5)

**Long waiting time:**

The amount of time a patient wait is seen as one factor which affects the utilisation of health care services. Many respondents admitted that they did not prefer to come for treatment due to the long waiting time. They perceived it as a barrier to obtain services and making patients to wait unnecessarily can be a cause for non-compliance to the appointment and follow-up. Some of the respondents were not busy, but since they had to wait for a long at the clinic they refused to go for the appointment.

*“That’s right, I really want to go, it’s free right. But, what kept me from going was waiting too long at the clinic.”* (Respondent 8)

*“I’m not “busy” at all, it’s just that I don’t like to wait long. We had to leave early in the morning, but usually it will only finish until afternoon.”* (Respondent 12)

**Lack of self-motivation:**

Lack of self-motivation, which was the second most common personal barrier to lifestyle changes, was suggested either in terms of physical activity or practising a healthy diet. All of them just described themselves as “lazy”.

*“The only barrier here is being lazy. I’ve already tried exercise once “last week” and I used to walk around the park too but now I’m lazy.”* (Respondent 6)

*“But maybe because of “my lifestyle” and I don’t like the “exercise”, so – call lazy person. Whenever my husband asking me to go exercise with him. I just said it’s hot.”* (Respondent 2)

*“Too lazy and eat well. I eat a lot but often. If I only eat a little during lunchtime, I will eat again at 3 pm and I just want sweet drinks only in the evening.”* (Respondent 7)

**Poor family/social support:**

Furthermore, several women stated that poor family or social support was also a hindrance to disease prevention. Furthermore, they explained that most family members did not support them to have a balanced and healthy diet.

*“I’ve tried cooking less oily foods. But we cook for everyone. So when I cook like that, they don’t like it.”* (Respondent 9)

**Misconception:**

Apart from that, some women reported to have a misconception with regard to the treatment for their condition. They were concerned about the medication side effects, in which they believed that taking medication for a long time may result in serious consequences.

*“Because I think that taking long term medication is not good.”* (Respondent 4)

*“Yeah, “it’s stored in the kidneys” and all. It’s not like it’s just absorbed and excreted.”* (Respondent 11)

**Lack of accessibility:**

Environmental factor was recognised as another barrier in the discussion besides lack of available healthy food. They mentioned the quality of food prepared in most restaurants and stalls in Malaysia consumed a large quantity of oil.

*“If I go everywhere there is no choice other than greasy food. Everywhere around Malaysia, mostly oily food is available. All of us know that restaurants or shops near Malaysia, it is faster to eat oily foods than a healthy one. It’s easier.”*(Respondent 7)

**DISCUSSION**

This study found that the most commonly reported barriers to CVD prevention were related to time. Respondents in this study further described that the time-related barrier involved lack of time for physical activities and long waiting time for medical appointment.

**Lack of time for physical activities:**

As ideally suggested by the World Health Organisation (2010) and the Malaysian Dietary Guidelines (2010), individuals are supposed to engage in at least 150 min of moderate physical activity per week. Unfortunately, it was apparent that most women in this study reported to have lack of time for exercise. This is in line with the previous study which showed lack of time as one of the barriers for

physical activity with the general population. It was the most frequently reported barrier, followed by not getting used to do exercise and financial constraints to participate in organised exercise activities (Eyler et al., 1997). Therefore, there was a high level of physical inactivity within the Malaysian population, which was around 36.9%, in which 50% of them involved the female population as compared to males (24.7%) (O A, 2015). It was likely due to career and family responsibilities (e.g. childcare commitments) (Zunft et al., 1999). In fact, housewives were found to be significantly associated with physical inactivity among Malaysian women (Ying, 2014). However, it was argued that those who were working often found that time was a barrier to exercise than those who were not working (Nielsen et al., 2014). As a matter of fact, currently there are over 70% of working mothers. The combination of work, household and childcare responsibilities leaves little time for personal leisure activities (Brown et al., 2001; Cramp & Bray, 2010). Due to those reasons, it left considerably less time for them to go for exercise.

The increasing level of physical inactivity observed in Malaysian population, especially with women, is of concern because it has a detrimental effect on health since it is believed to cause about a twofold increased risk in developing coronary heart disease (Powell, 1987). It may result in coronary heart disease through various physiological mechanisms which have harmful effects on blood pressure, serum lipoprotein profiles, insulin and glucose metabolism (Chandrashekhar & Anand, 1991).

### **Long waiting time in health care centre:**

Apart from that, the long waiting time at health care centres, especially in government hospitals was also regarded as a barrier to obtain health care services. This will eventually reduce the chances for them to undergo any health screening, and make them stop seeking for medical treatment. A previous survey conducted by the Malay Mail Online revealed 26% of respondents agreed that long waiting time was the main reason for them to abandon treatment at public clinics or hospitals (Kaur, 2017). Apart from that, another study showed that most people mentioned the majority of health centres are always busy managing sick patients, and thus they feel inappropriate to go for screening (Juwita et al., 2013).

According to the Institute of Medicine (IOM), “ideally at least 90% of patients should be seen within 30 min of their scheduled appointment time” (O’Malley et al., 1983). However, the average waiting time at hospital outpatient departments in Malaysia is around 1 hour to 2 hours (Pillay et al., 2011). Meanwhile, a local survey conducted by an online news portal, namely *Malay Mail Online*, revealed that “26% outpatients waited for 1 hour, 8% endured less than an hour wait, and approximately 7% revealed they waited between 2 hours and 4 hours (Kaur, 2017). This might be due to several contributing factors, such as many patients, great staff shortage and aging equipment (Barlow, 2002; Oche & Adamu, 2013)

Somehow, this is alarming, because it does not only affect their adherence level to the provided follow-up and treatment but also causes certain individuals to go for another alternative or even self-medicate themselves without any consultation, supervision or medical advice from a health professional. This may probably result in obtaining inappropriate medication for their conditions, and lead to late diagnosis and management. Due to that reason, a few recommendations are needed to improve the waiting time, such as increasing the number of registration staff and implementing an efficient schedule system for follow-up patients.

### **Poor family and social support:**

In addition to that, poor family and social support were considered as one of the barriers to CVD prevention, particularly in terms of dietary habits. They further explained that family members were discouraging and unsupportive towards sudden changes in the diet which are different from their normal taste preferences.

This was highlighted by previous studies which reported attitude and experience with physical activity/exercise, unwillingness to diet, and support from family members were important components to initiate and maintain lifestyle changes (Murray et al., 2012; Worcester et al., 2004). It was also in line with other studies which showed family preferences and responsibilities were thought to be important barriers to physical activity and heart-healthy diet (Eyler et al., 2002; Krummel et al., 2002). This is due to the other family members’ tendency to eat less healthy food and not prefer low-fat meal. This was not surprising since taste and food preferences play an essential role in the dietary intake of individuals (De Kock et al., 2016).

Having a dietary modification is very essential, especially in those with high cholesterol levels since the dietary change can affect lipid profile (Keys et al., 1965). A dietary pattern that focuses on vegetables, fruits, low and non-fat dairy foods, whole grains, legumes, fish, and lean meats helps to reduce cholesterol levels and lower blood pressure, leading to an overall reduction in CVD risk (Mosca et al., 2004; Appel et al., 1997; Hu & Willett, 2002).

#### **Lack of self-motivation:**

According to Eyster et al. (1997) “self-motivation may show the presence of self-regulatory skills like effective goal setting, self-monitoring of progress and self-reinforcement that is very crucial in maintaining physical activity”. Nevertheless, it is the third most common stated personal barrier for the prevention of CVD in terms of lifestyle changes. A similar result was found in the previous study which showed that lack of self-motivation and social networks were also considered as barriers to exercise and physical activity (Eyster et al., 1997). This was also seen in another study which suggested that most people lack motivation to be involved in the recommended 150 min of moderately intense exercise weekly (Garber, 2011). Moreover, a recent survey conducted by Cilisos and Fitness First Malaysia (2018) demonstrated that 51.32% said that the biggest challenge that keeps them from involving in physical activity is unmotivated.

This may result from several factors such as lack of interest to exercise or value its outcomes enough to make it a priority in life (Ryan et al., 2009). Apart from that, several people may think that they are incompetent, not physically fit or skilled enough to exercise, or they may have health limitations that present a barrier to activity (Korkiakangas et al., 2009). Since the lack of motivation in exercising was considered as the major barrier for lifestyle changes, further research should be made to identify other possible causes of low motivation for physical activity among the Malaysian population.

#### **Misconception:**

Furthermore, another barrier identified was misconception and negative belief about medications. Some patients were worried about the possible adverse effect of the medication and thought it would give serious consequences to them. In the previous study, all physicians reported diabetes and hypertension were associated with various negative beliefs, which interfered with the diagnosis and treatment of these conditions. Their patients were also afraid of the side effects of lifelong intake of medication (George et al., 2015). Moreover, misconception in medication has a significant association with medication adherence. About 20% of the difference in adherence level was due to patient’s belief about medication, such as perception of medication necessity and concerns about the potential adverse effects of medications (Keenan & Jan, 2017)

#### **Lack accessibility:**

The environmental barriers suggested by women in this study also seemed to be consistent with past literature. Healthy eating is currently the growing concern of numerous countries due to the rise in overweight and obesity rates worldwide. Unfortunately, based on this study, it was found that there was lack of accessibility and limited choice to healthy food in Malaysia. This was consistent with the previous study which showed 55.8% of respondents agreed that there was difficulty to eat healthy foods at shops/restaurant, 55.1% mentioned there was not much choice of healthy food available outside” and more than 50% of respondents had agreed to the following statements (Sharkawi et al., 2014).

They also indicated with regard the quality of food prepared in most Malaysian restaurants and stalls that use large quantities of oil. Although they were aware and concerned with the quality that could affect health, they could not avoid it. This can be due to the eating culture of Malaysian society that consumes a large quantity of oil in food preparation. In 2007, Reuters reported that the traditional Malaysian diet was considered the unhealthiest cuisine in the world, whereby food is often high in cholesterol and fat, with high amounts of sugar and salt (Y-Sing, 2007). The nature of current Malaysian food that are served at food premises or food feast is sweet, oily, and fatty, which is of good taste but carry health implications (Abdullah, 2012). Apart from that, restaurant owner often has a poor concern with regard to nutrient contents, poor food quality and customers’ health risks.

Furthermore, due to the increasing number of foodservice prominently fast-food restaurant, have further caused a negative influence on the population’s health state. As cited in a study by Ismawati et al. (2014), “the fast-food sector was the leader in new outlets of foodservice sector, predominantly recording an absolute growth of 67% during 2004 to 2009”. Moreover, with modern lifestyles more families and younger populations are commonly eating out and rely heavily on fast food (Sidik &

Rampal, 2009). This is alarming since fast food has been associated with low diet quality and higher saturated fat, and sugar intake and may contribute to heart disease (Anderson et al., 2011).

Findings of this study suggested that the availability and a wide selection of healthy food away from home play an important role in promoting Malaysians to eat healthy. Therefore, this implied the need of collaborative efforts which involve the Health Ministry, other health educators and the food industry in providing wide choices and improving the accessibility of healthy food to the consumers by giving effectively the nutrition and healthy eating messages (Sharkawi et al., 2014).

### CONCLUSION:

Time-related factors, lack of social support, low self-motivation, misconceptions on medication and poor accessibility of healthy food were recognised as the major barriers in this study. The need to address each and every challenge perceived by the population to reduce the risk of getting CVD was highlighted. Health education and mass awareness programmes should be initiated to encourage positive attitudes towards lifestyle changes, promotes the importance of social support as well as providing correct messages effectively to the general public.

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