

CARDIOVASCULAR DISEASE AWARENESS AMONG WOMEN WITH HYPERCHOLESTEROLEMIA AND THEIR HEALTH SEEKING BEHAVIOR – A QUALITATIVE STUDY

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ABSTRACT

Cardiovascular diseases (CVD) are a group of disorders that affect the heart and blood vessels. It is an important cause of morbidity and mortality in Malaysian women. However, many women are not aware of it and have a misconception that CVD is a disease that only affects men. Therefore, the main objectives of this study are to explore CVD awareness among women who are at risk of developing the disease and evaluate their health seeking behaviour in regard to their hypercholesterolemia status. A series of in depth face-to-face interviews were conducted among 13 women who were found to have high cholesterol level detected in their blood during a routine medical screening at a primary health care clinic in the International Islamic University Malaysia, Kuantan, Pahang. All interviews were audio recorded and transcribed verbatim. NVIVO software Version 12 was used to code and manage all qualitative data. Results indicated that all participants had poor awareness of CVD. The majority of them did not perceive themselves as at high risk of developing CVD despite having high cholesterol levels in their blood. Poor CVD awareness, lack of knowledge and sociocultural aspect influenced their health seeking behaviour. This study provided an insight into the women's awareness towards CVD. Health-care practitioners should elicit a patient's awareness to facilitate the clinical management of CVD. Additionally, there is a clear need to increase CVD health awareness among women, especially those who are susceptible to CVD.

Key words: cardiovascular diseases (CVD), women, awareness, health seeking behaviour

INTRODUCTION

The term cardiovascular disease (CVD) is used for a group of illnesses that are related to the heart and blood vessels. These include hypertension (high blood pressure), coronary heart disease (heart disease), cerebrovascular disease (stroke), heart failure and peripheral vascular disease (World Health Organisation, 2017). CVD is the global leading death and accounting of 44% out of all major causes of death worldwide (World Health Organisation, 2018). The contributing factors for CVD development can be classified into two categories, namely modifiable and non-modifiable risk factors. Modifiable risk factors include high blood pressure, hypercholesterolemia (high cholesterol), obesity, diabetes, smoking, and low physical inactivity. As for non-modifiable CVD risk factors, increase in age, being a male and heredity are strongly related to the progression of CVD (American Heart Association, 2016). High cholesterol is one of the major modifiable determinants of CVD which is always related to poor dietary habit and sedentary lifestyle. It was found that among the multiple factors of CVD, having a high cholesterol level often preceded the other risks in the progression of CVD development (Paynter et al., 2015).

Globally, CVD has contributed to 17.6 million of deaths in 2016 (World Health Organisation, 2018). In Malaysia, the National Health and Morbidity Survey 2015 reported that 35% of deaths in Malaysia came from CVD. In addition, the prevalence of hypercholesterolemia as one of the major CVD risk factors is also increasing in trend from 32.6% in 2011 to 47.7% in 2015. The survey also found that hypercholesterolemia was significantly more dominant in women with prevalence of 52.2% as compared to men at 43.5% (NHMS, 2015). Even though CVD has been commonly associated with men, undoubtedly the trend is rising

among women due to an upsurge of CVD risk factors among women as well. In the Middle East countries, CVD is responsible for the main cause of death among women in the United Arab Emirates (Cleland, L. 2013). A similar presentation was observed among Malaysian women, in which death by CVD was 2 ½ times more common than all cancers (Ministry of Health Malaysia, 2016). Besides, women are less likely to receive adequate comprehensive clinical management when they are admitted to hospital for CVD and are more likely to die as compared to men. Those who have survived will definitely have poor quality of life and poorer long term outcome (Sadowski et al., 2011). Nonetheless, CVD in women remains under diagnosed and under treated due to the diagnostic challenge along with the persisting point of view that CVD mostly affects men ((Ketepee-Arachi & Sharma, 2017).

As women are also equally vulnerable to CVD and possess the poorest outcome than men, it is important to investigate the state of CVD awareness from women's perspectives, especially those with identifiable CVD risk factors. In addition, there is a dearth of information related to CVD awareness among Malaysian women. A good awareness of CVD may or may not translate into an actions to improve their current health state. Therefore, the objectives of this paper is to explore the state of CVD awareness and their health seeking behaviour among women who were found to have hypercholesterolemia.

METHODS

The study was conducted between March and May 2018 at the International Islamic University Islam, Family Health Clinic (IIUM FHC), Kuantan, Pahang, which is a primary care clinic that caters for the health of IIUM staff and the surrounding public community in Kuantan district, Pahang. IIUM FHC receives up to 150 patient visits in a day and serves clinical treatment for all outpatient cases, as well as women and child health.

A qualitative study design was used to explore on their CVD awareness and health seeking behaviours. Face-to-face in depth interviews (IDI) were conducted from March to May 2018. Participants for the study were chosen from medical records in the clinic. A purposive sampling was used to select participants who meet the study objectives. Therefore, women with recent blood test (within the last 6 months) who have 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 contacted by phone and were informed about the research protocol. An appointment date was given to those who agreed to the interview session. A written consent was sought from all participants for the audio recording and interviews. They were assured in regard to confidentiality and anonymity of their participations. All participants signed an informed consent form as evidence to participate in the study and allow finding from the study to be published.

This study had obtained permission from the Research Ethics Committee, International Islamic University Malaysia. An interview script was developed based on literature review and used as a guide for the interview session. The respondents were interviewed and open-ended questions were used throughout the session. The interviews lasted between 30 min to 45 min. The key topics included participant's awareness regarding their risk of developing CVD due to their high cholesterol level, as well as their action and response following that. The interview session was carried out in *Bahasa Melayu*, which is the national language of Malaysia.

The interview session was conducted in one of the IIUM FHC consultation rooms. During data collection, two researchers, one research assistant and a scheduled participant were present. Due to time and room limitation, the session was only conducted on every Tuesday afternoon from 2.00pm to 4.00 pm, except for 2 participants where the session was held on Tuesday morning because that was the only time that they could spend for the study.

Important points were noted by the research assistant, especially the nonverbal cues, and she also helped to operate the digital Panasonic audio recorder that was used to record the interview sessions. The recruitment of participants was stopped when saturated data was consensually reached. A total of 13 women participated in the study. All recorded interviews were relistened for three times and then transcribed verbatim in Microsoft word by the research assistant. These transcripts were used as the basis data for analysis. The data were managed by using NVIVO 12, which is a software for qualitative data analysis. The data were independently and repeatedly read to arrive to the coding framework. The list of codes and themes were finally agreed on.

RESULTS

Respondent's characteristics are displayed in Table 1. A total of 13 respondents participated in the in depth interview (IDI) session. All were of Malay ethnic (the largest ethnicity in Malaysia) with aged that ranged from 34 to 60 years old. The values of their total cholesterol level and LDL level are mentioned in Table 1.

Table 1. Age of respondents and value of cholesterol in blood

IDI	Age	Total Cholesterol level (mmol/L)	LDL level (mmol/L)
IDI 1	60	7.6	5.6
IDI 2	48	6.2	4.9
IDI 3	53	7.9	5.9
IDI 4	34	8.1	4.9
IDI 5	40	8.1	5.4
IDI 6	42	7.5	5.1

IDI 7	64	8.9	6.8
IDI 8	45	7.2	5.0
IDI 9	44	8.5	6.1
IDI 10	53	7.1	5.1
IDI 11	40	7.5	4.9
IDI 12	37	7.3	4.9
IDI 13	35	7.7	5.9

The interview results are presented according to the two themes and respective subthemes, as shown in Table 2.

Table 2. Main themes and subthemes discussed during in-depth interview (IDI)

Themes	Subthemes
Awareness of cardiovascular disease (CVD)	Heart attack CVD screening Manifestation of CVD symptoms Perceived causes of CVD
Health seeking behaviour	Exercise Modification of cooking style Taking supplements

All respondents were aware that high cholesterol levels in their blood will affect their physical health. They also realised that one of the contributing factors for developing cardiovascular disease was due to increase in cholesterol level in their blood. However, the majority of women in the study thought that heart disease could only affect men, which is similar to cervical cancer, whereby it only affects women. Experience faced by respondents further supported their belief that heart disease is a problem in men. All respondents were unsure with the terminology of CVD. Majority of them relate the CVD term as equivalent to heart disease. However, none could provide a complete definition of CVD.

Heart attack

Most respondents had heard about heart attack. They described as the heart which has stopped functioning. One participant mentioned that heart attack was a silent killer which cannot be seen by the eyes like the gout disease. A few of them provided a more detailed explanation about heart attack:

"It means a sudden attack to the heart where it stops pumping due to blockage of blood vessel". (Respondent 5)

"From what can I say, when cholesterol level is elevated and accumulates in the blood, it causes blockage and blood cannot reach the heart, thus heart cannot function as normal". (Respondent 4)

CVD screening

When respondents were asked about CVD screening, some mentioned that they had heard about it somewhere, but were not sure of the details. They knew about screening for hypertension, diabetes mellitus, cholesterol, but they mentioned that no heart component was examined or checked.

"I've heard about screening for heart disease. But, it's actually not a screening for your heart, what they did was just a regular health screening, I can't recall back whether the screening has heart component or not". (Respondent 11)

Some respondents had never heard about CVD screening or heart disease screening. The main reason they give was that heart disease or CVD screening was not commonly promoted as pap smear screening or breast cancer screening. To them, heart disease was commonly a disease in men, as a consequence of heavy smoking. Several respondents also suggested that promotion of CVD screening should be extensively done everywhere, such as on television, the Internet, work place, and at any places where the public are concentrated, and not merely doing the screening at health care facilities which usually resulted in very few uptakes.

"I think healthcare people should expand the promotion to many places and channels, not merely concentrated at people who come to the clinics. For me, I knew about this blood test screening package from an advertisement shared by my friends in our "WhatsApp" group". (Respondent 4)

"I never heard regarding availability of heart disease screening. What I have heard before were mainly screening for hypertension, diabetes mellitus, and pap smear. For heart disease...not that I know of". (Respondent 8)

Manifestation of CVD symptoms

Respondents most frequently mentioned that chest pain was the major presentation of heart disease. However, none of them was able to describe the characteristics of pain, such as throbbing, heaviness or constricting in nature. This was because they only heard about the presentation based on stories shared by some of their family members and relatives who had experienced it before. In addition, some mentioned that the chest pain seemed to be at the central of the chest, as often showed in the movie where the actors place their hands at the centre of chest before they collapse on the floor. Meanwhile many respondents

mentioned chest pain as one of the clinical presentation, one respondent commented that heart attack did not produce any symptoms. This was attributed to her personal experience that involved her family members:

"There is no symptoms for those who had heart attack, all my brothers were healthy but out of a sudden they pass away due to heart disease. The only thing that I knew was that they have high cholesterol". (Respondent 3)

Some respondents also identified sweating as a possible symptom of heart disease. These were inspired by their personal experience, witnessing what their fathers had from a heart attack:

"My personal experience.... I saw my dad sweating, shivering and breathlessness (Respondent 8)
"Sweating a lot, that was what I saw when my late father had a heart attack". (Respondent 2)

Perceived causes of CVD

The majority of respondents were able to provide possible causes that contribute to CVD development. Most of them were aware about certain behaviour related factors which were also responsible for CVD events. Underlying medical diseases, such as hypertension, diabetes, obesity and hyperlipidaemia were identified as the main causes of CVD by all of respondents.

Poor dietary habits such as eating oily food, fried food and high consumption of seafood were labelled as causative factors for cholesterol elevation in blood. Respondents also associated unhealthy diet with cultural phenomena. Eating foods like *roti canai* and *nasi lemak*, where both contained huge amount of fat and oil, were accepted as a standard breakfast package for Malaysians. Moreover, unhealthy food was described as tastier and easy to get as compared to healthy food.

"Fried foods are easy to get. It is unavoidable because Malaysian people love to eat fried food". (Respondent 5)

Some respondents also mentioned that lack of exercise, genetics, and smoking were also responsible for CVD development.

Health seeking behaviour

All respondents remarked exercise as an important aspect of CVD prevention. There were a variety of exercise durations mentioned by them, for example some said 20 minutes a day or 5 minutes a day for 5 times, in which they associated it with the frequency of prayer as a Muslim of at least three times in a week. They mostly received information about exercise from their doctors and social media. However, they commented that most of the time the information was very brief and general.

"Exercise must be done at least twice a week, your body must sweat so that you feel good and fresh". (Respondent 7)

"My doctor recommends me to exercise 20 min a day.... doctor has already advised me, but it's all up to us to do it or not. If I have time, I will do it. if no time, I will not do it". (Respondent 8)

"Exercise.... well, the easiest way is 5 min, five times a day. So just perform your prayer regularly is more than enough". (Respondent 10)

Another respondent provided a more detailed explanation about exercise, whereby she described that for an exercise to be effective it should relate with the heart rate of individual.

".... As far as I know, there is a certain level of heart rate that needs to be achieved when performing exercise. If that level is not reached, then it is useless". (Respondent 11)

Meanwhile most respondents agreed that exercise was important, one respondent felt that exercise was not essential. She related the situation to her husband's condition who did not exercise at all but had a normal cholesterol level due to good eating behaviour.

"I don't think exercise will help to reduce your cholesterol. My husband never exercises but he is really taking care of what he ate. His cholesterol is normal, not like me because of my poor eating style...(laugh) I will learn from him after this". (Respondent 6)

Apart from exercise, all respondents added that choosing the right food was also important for CVD prevention. The majority agreed that one should increase the intake of fruits and vegetables in everyday meal, as proposed in the food pyramid. The reduction or avoidance of processed food and food high in fat and cooking oil will help to reduce cholesterol levels. Some respondents suggested modifying the cooking method for a healthier life style, such as grilling and steaming. However, they also felt that these will make the taste less enjoyable. In addition choosing the right food and alter the cooking methods, some respondents were influenced by traditional health supplements and have strong faith that it will help reduce their cholesterol levels. Getting recommendation from a pharmacist will further intensify their feeling towards taking supplements.

"I used to drink lady fingers juice. I read it somewhere that if you drink it for seven consecutive days, your cholesterol level will reduce". (Respondent 6)

"I've consumed rice oil supplement to lower my blood cholesterol. It was recommended by a pharmacist, and thus I trust him". (Respondent 2)

DISCUSSION

This study explored the way women with a diagnosis of hypercholesterolemia understand about their medical conditions. Most participants were middle aged women. All of them agreed that their high level of cholesterol can contribute to future CVD events. CVD in women continue to be under-diagnosed and under-treated due to diagnostic challenges along with the perspective that CVD principally affects men (Ketepee-Arachi & Sharma, 2017).

In this study, it was found that respondent's awareness and health seeking behaviour seemed variable. Some respondents appeared to be knowledgeable during the interview while others seemed a bit restricted and could only provide little information pertaining to CVD. Having a good awareness and understanding about own illness may facilitate the disease management, which could lead to a good outcome. Previous studies have showed that patients with poor awareness and understanding about their diseases were incapable of managing their illness and were less likely to take preventive actions for their health (Scott et al., 2002). Knowing that CVD is one form of chronic disease, self-management and empowerment is an important element in managing chronic disease patients.

Heart attack is defined as a serious medical emergency where the blood supply to the heart is blocked mostly due to blood clot ("Heart attack," 2016). A study by Gill & Chow (2010) identified that most of their study participants had adequate understanding about heart disease, which could be due to the fact that all the participants who were involved in the study were cardiac patients and they might have received information pertaining to cardiovascular disease during medical treatment (Gill & Chow, 2010). Similarly, our study also found that most of the women who participated in this study were able to illustrate the meaning of a heart attack in their own layman terms.

The term 'CVD screening' was globally used for the past few decades, including in Malaysia. However, this term seemed to be an awkward terminology for most of the participants in this study. Another term, which is 'heart disease', is often used interchangeably with the term 'cardiovascular disease' (Mayo Clinic, 2018). When we rephrased it to a more lenient term like 'screening for heart disease' the response was still restricted. The majority of the women claimed that they never heard of it and even if they had, there was no component of heart in the screening programme. Participants thought that a heart disease screening should have the element of examining the chest together with a special blood test that can tell the status of their heart. To them, parameters like blood pressure, body weight, sugar, and cholesterol level does not reflect heart disease or CVD screening. In contrast to a study conducted among a community living in Western Cape, South Africa, most participants were familiar with the terminology of CVD that was used to describe cardiovascular disease et al., 2015).

CVD symptoms depend on the type of illness that one suffered with. For instance, if someone has a coronary heart disease the commonest presentation will be heart attack symptoms such as chest pain associated with sweating or pain that radiates to the arm, left shoulder, and jaw. A person may also experience difficulties in breathing, vomiting or fainting (WHO, 2017). In the study, chest pain was recognised as one of the prominent symptoms in heart disease by participants. Most of our participants associated this symptom with their life observation. However, women with heart disease often present atypical symptoms such as breathlessness, fatigue or epigastric pain. As compared to men, women's symptoms are more often triggered by psychological or emotional stress and less frequently by exertion (Ministry of Health Malaysia, 2016). These facts are not well appreciated by both the public or health-care professionals who generally view CVD as a man's disease. As seen in other studies conducted among Emirati women, the study also found that these women have no cognisance of prodromal symptoms of heart disease, as well as the atypical presentation (Khan, Khoory, Al Zaffin, & Al Suwaidi, 2016). Poor recognition of symptoms was cited as a reason for delay in seeking medical treatment (Sjöström-Strand & Fridlund, 2008). This finding was vital because early presentation to the health care facility will improve the outcome of heart disease. Delayed presentation for seeking medical treatment will result in the loss of myocardium tissue, leading to high mortality (Ministry of Health Malaysia, 2019).

CONCLUSION

This study explored the way asymptomatic women with high cholesterol understand about their risk of developing cardiovascular disease and how they respond to their illness. Respondents were knowledgeable about risk factors for CVD but had limited understanding and awareness on themselves with regard to their own risk of CVD. Women also remarked that the CVD screening campaign was inadequate and health care institutions should help to expand the programme in multiple settings. This study also highlight that healthcare doctors play a significant role in providing sufficient information to facilitate a good health seeking behaviour among patients. In addition, educational initiatives focused on improving CVD awareness are needed and this need to consider the local cultural and religious beliefs. However, we must consider a few limitations from this study. Our sample size was small and our women participated in this study were heterogenous mainly in the distribution of age group. We also used non probability sampling which limit the transferability of our findings. In summary, the present study increases our understanding regarding awareness and health seeking behaviour among hypercholesterolemia women who are at risk of developing CVD from the patient's perspectives. Our findings suggest the need to develop and implement different CVD health education programs to address the deficient in awareness and existing misconceptions on CVD health.

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