

ORIGINAL ARTICLE

Exploration of the Factors in Treatment Adherence to Coronary Heart Diseases Diagnosis Among the Multi-Ethnic Patients: A Qualitative Study

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ABSTRACT

Introduction: Coronary heart disease (CHD) is the leading cause of death in Malaysia. This study aims to explore the treatment experiences of patients with recurrent coronary heart disease during hospital admission and after discharge. This research also attempts to understand patients' adherence to the prescribed treatment. **Method:** The main sample for this study includes inpatients and outpatients with recurrent CHD who have undergone secondary prevention treatment at certain tertiary hospitals which were purposively sampled. The transcripts of one-to-one semi-structured interviews (N=22) were analyzed using the Interpretative Phenomenological Analysis (IPA). **Results:** Three themes emerged in the analysis of treatment adherence among multi-ethnic patients with CHD: (i) doctor-patient relationships; (ii) information-seeking behaviour; and (iii) psychosocial beliefs. Other factors that influence treatment adherence include patients' cultural, religious, or spiritual beliefs-based complementary alternative medicines (CAM), if these factors were inadequately addressed by their respective health professional. **Conclusion:** The results demonstrate that for future cardiac rehabilitation program development, health professionals must not only focus on the patient's care improvement but must also be knowledgeable on the patient's preferred alternative treatment.

Keywords: Multi-ethnic; Coronary heart diseases; Interpretative Phenomenological Analysis; Treatment Adherence; Psychosocial beliefs

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eating and physical inactivity (4). Today, Malaysia has among the highest prevalence of CHD in Southeast Asia (5) and is also the most common cause of death among Malaysians (6).

INTRODUCTION

Coronary heart disease (CHD) is recognised as the leading cause of death worldwide and continues to increase in developing countries (1). Several studies conducted in Europe have actually reported a decline in the mortality rate of CHD patients owing to modifications in their risk factors such as changes in lifestyle and an increasing awareness of the importance of following the prescribed medication (2). However, CHD has substantially increased in developing countries, such as those in South Asia. CHD patients as young as 30 years old in low- and lower-middle-income countries face double the risk of premature death compared to those in higher-income countries (3). According to the most recent Malaysian National Health and Morbidity Survey, there was a significant overall increase in risk factors leading CHD from 1996 to 2016, such as obesity, unhealthy

To address the increasing incidence of CHD in global perspective, healthcare professionals in hospital usually employ cardiac rehabilitation (CR) activities, which comprises continuous support and follow-up of patients' recovery progress. CR specifically focuses on medication treatment as the main intervention approach for recurrent CHD (7) and has also proven to be cost effective (8). Nevertheless, adhering to medication treatment remain a major challenge particularly in low- and middle-income countries because the access to medication varies across the world according to its availability (7). On the other hand, the main basis of medication non-adherence is first, the patients' lack of confidence in medicine benefit and their concern over the medication side effects on their own health; second, communication challenges which prevents a trusting relationship between doctors and patients; and third, relevant socioeconomic factors such as younger age,

and being on a complex medication regimen (7).

Gallagher et al., suggest that psychosocial risk factors such as depression, and lower level of social support are often linked to the pathogenesis of CHD patients, which could help increase their participation in cardiac care and rehabilitation (9). An exploration study on psychosocial risk factors among the South Asians in UK showed heterogenous views and experiences along with strong cultural influences which suggest cardiac rehabilitation (CR) should be flexibly tailored to the individual's cultural context (10). This was especially true for CHD patients from minority ethnic groups in developed countries (e.g. the UK). For instance, clinical trials on CR have shown that patients who were unable to participate in hospital-based programmes could reap similar benefits from specially-tailored regimens (11). In light of these data, it is important for cultural elements to be incorporated into CR to enhance the efficiency of care for multicultural ethnic minorities (12).

According to Choo et al. cardiac rehabilitation (CR) did not show significant results in Asian samples and implementing an effective culturally-tailored interventions among the South Asian community remains a major challenge due to the lack of evidence-based guidelines from Asian studies (13). A recent study conducted in Malaysia has claimed that different ethnicities in Malaysia have different participation towards CR, particularly in terms of health recommendations such as taking prescribed medication, diet modification, and regular exercise. Furthermore, the factors that contribute to the CR participation in Malaysia are still unknown and hence, require further investigation (14). Most existing studies pertaining to the participation in and adherence to CR services were quantitative in nature; as such, there is limited insight into the possible ways in which these factors impacted the patients' inability to undertake health-promoting changes, which in turn prevented further enhancements of CR services (15). Owing to the heterogeneity and non-uniformity of CHD risks in different ethnic groups in Malaysia, there is a crucial need for a qualitative exploration into the cardiac rehabilitation therapy experiences of CHD patients. Hence, this study aims to explore the treatment experiences of CHD patients in Malaysia, which helps to identify the important determinants of treatment adherence for reference in future CR intervention development.

MATERIALS AND METHODS

Study Design

The study design was a qualitative study based on the interpretative phenomenological analysis (IPA) guidelines of Smith, Flowers, and Larkin (16), and the collected data were gathered and analysed categorically using IPA method accordingly. IPA is a qualitative method to understand a group's perception of a

particular topic and commonly used in psychological health related studies (17). This study adopted IPA because this analytical tool facilitated an understanding of the meaning of treatment, as understood by patients themselves, which they formed through reflecting on their experiences of recovering from CHD. Eligible participants were selected via purposive sampling. Purposive sampling strategies were based on several selection criteria such as predetermined adherence issues in treatment, which were elicited based on the ongoing emerging issues on patient's treatment experience starting from the initial informants. Similarly, the sampling recruitment was conducted with assistance from the doctors or nurses' referral which based on the emerging issues (18). Data were collected using semi-structured in-depth interviews, guided by findings from secondary prevention studies in Malaysia as reported by Ming et al, (19) (Table I). Interviews with patients of recurrent CHD readmitted for heart attack, or outpatients attending follow up consultations were conducted in the hospital's private room. The interview process also encompassed hermeneutic inquiry prescribed in the IPA, which involves the participants making sense of their treatment experience. This is followed by a double hermeneutic process in which the researcher then takes on an active role in making sense of the participant's interpretation of their life world (20). Each interview session comprised one researcher and one participant, lasting around 60 to 90 minutes. The interviews were then audiotaped and transcribed verbatim.

Table I: Semi-structured interviews guide

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- Please tell me about the treatment prescribed to you after you was discharged from hospital during the first diagnosis with heart diseases.
 - What is the treatment prescribed to you after you was diagnosed with heart problem?
 - How do you feel with your life changes when you have to follow the prescribed treatment after diagnosed with heart problem? (taking medicines, physical exercise, and controlling diets)
 - How do you feel when you have to take the prescribed treatment for everyday/ for the rest of your life?
 - What is your understanding about your prescribed treatment?
 - Can you tell me your initial experiences taking the prescribed treatment?
 - What is your experience during adjusting your daily routine to the prescribed treatment?
 - What are the factors that helps you to take the prescribed treatment?
 - What are the factors that makes you difficult to take the prescribed treatment?
 - Do you have other treatment for your heart diseases besides than the prescribed treatment by hospital?
 - Do you take other treatment than prescribed hospital treatment?
 - Which treatment is your preference?
 - What makes you follow or not follow other treatment regimen besides than hospital treatment?
 - Do you experience any side effects from the prescribed medication?
 - How do you cope with the medication side effects?
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In order to fortify the strength and reliability of the qualitative data, our researchers implemented data source triangulation type by comparing the collected data not only from the patients, but also from their carers at the end of each interview with consent from both parties. The interviews with their carers were conducted in a different counselling room to maintain their privacy and confidentiality. However, in this study, the interviews with carers were conducted as part of the triangulation process to ensure that the data is credible. Only information supporting the phenomenological significance of the patients' experience and how it impacts them were discussed in this study (16). In

addition, credibility checking was achieved through a continuous cross-checking process between our two researchers after the interviews to ensure that the collected data was valid. This process was important for identifying the presence of any researcher-informant issues such as researcher's social position, personal experiences, and professional beliefs (20).

Ethical Approval and Sampling

The Ethics Committee of the Malaysia National Heart Institute (IJN) (RD5/08/15) and Universiti Kebangsaan Malaysia Medical Centre (UKMMC) (FF-2015-289) has approved current study ethical standards. The ethical approval has been obtained which allowed further sample recruitment at both hospitals from August until December 2015. Only informants with recurrent CHD from both inpatients ward and outpatients clinic were recruited to obtain differences in informants response based on their past and current treatment experiences. According to Rosen et al, (21), there are different treatment outcome between inpatient and outpatient with recurrent CHD that suggest patients with low treatment adherence had hospital readmission rates of 20%, as compare to patients with high treatment adherence only had hospital readmission rate about 9.3%. These informants were invited to take part in this research by the cardiologists or nurses who were involved in their care. The informants were then referred to us in accordance to the inclusion and exclusion criteria. The former was based on the cardiovascular disease clinical practice guidelines (22), while the latter excluded patients who (i) had cognitive impairments and speech or hearing difficulties, (ii) were unable to speak Malay or English, or (iii) did not give informed consent.

The sample size was based on the concept of data saturation and homogenous of the samples. Besides that, IPA also focusses on the depth, richness and quality of data rather than on quantity (16). A number of fifteen informants were determined as adequate for a qualitative research (23). In this study, the sample was deemed to be homogenous in terms of their CHD diagnosis, and sampling was terminated due to saturated emerging themes of treatment experience. Data were analysed immediately after each interview and based on data quality we stopped at twenty-two informants.

Data Analysis

IPA was used to analyse the audio transcripts in order to access the subjective meanings of treatment experience after diagnosed with CHD. The lead author listened to the audio and read through the transcripts a few times to discern the major themes emerging from the interviews. Then, a computerized qualitative data analysis software namely as Atlas Ti.8 was utilized in IPA analysis. IPA uses an ideographic approach where each informant's data were examined individually by the researcher and analysis on the details of the informant s such as their

preconceptions and understanding (16). On top of that, data analysis also was conducted in systematic IPA stages which allowed the data to be deconstructed in facilitating the themes development and interpretation of the explored phenomenon (16, 17). To further facilitate the data analysis, any field notes records were used concurrently. Following Smith, Flowers, and Larkin (16), by integrating an inclusive list of subordinate's themes, emergent themes, the transcripts and exploratory themes (Table II), a summary table on each participant was created. The final steps of understanding the patient's meaning on their treatment based on the preliminary stages of analysis when several elements in the themes were identified. Then, these themes forming situational meaning which the focus was placed specifically on the informants' treatment experiences that related with their illness diagnosis and prognosis, and the researcher's interpretations. The interpretations were categorized through the three main factors as in the findings section – 1) Doctor-patient relationship; 2) Information-seeking behavior; and 3) Psychosocial beliefs, which finally lead to superordinate themes development (adherence and non-adherence). These subset of transcripts and refinement of codes were analyzed by all authors to

Table II: An example of analysis process on psychosocial factor of JW's experiences

Super-ordinate themes	Subordinate theme/ key themes	Emergent themes	Original transcripts	Exploratory comment
Adherence	Psychosocial beliefs/ Necessity beliefs on the prescribed treatment	- Attending Medical follow up	Interviewer: Uncle, from 2008 onwards, what's your opinion on the treatment received in IJN?	- JW remember the duration of his heart attack until currently.
		- Health professional asked patients to eat their medicines.	JW: For the last 7 years then. From the fourth month of 2008 till the fourth month of 2015, I have been asked to complete examinations in hospital every 6 months... and I've been asked to eat medication given by health professionals in hospital. And I'm really confident in the medication I receive... and also the advices given by the doctors and nurses here. This illness really needs confidence and calmness within ourselves.	- JW knows about his medical follow up routine every six month and he is requested to take medicines by health professionals in every visit.
		- Confident with the prescribed medications.		- JW feels confident with the prescribed medicines during the follow up visit.
		- Advice by Doctor and nurses.		- Both Doctor and nurses are involved in giving advice on treatment during the follow up visit.
		- Feelings towards illness.		- JW mentioned about his feelings about his illness following the advice given by Doctor and nurses.
		-Calmness.	Interviewer: Calmness?	- Calmness is number one factor in JW illness treatment.
		-Advice on dietary habits.	JW: That is number 1. Calmness.	- Controlling healthy diets is part of the prescribed treatment.
		-Confident after hospital treatment completion.	And, in terms of dietary habits that has been advised to us. And it is from that, I feel more confident in myself as long as I have done my treatment in hospital.	- JW developed confidence in himself with the prescribed treatment.
		-Prescribed medicines is necessary.		- "As long as I have done my treatment" reflects his beliefs that prescribed medicines is necessary to him.

maximizing the rigors (17).

RESULTS

A total of consenting twenty-two participants (N = 22) of the three main ethnicities in Malaysia (Malay, Chinese and Indian) who fulfilled the inclusion criteria were interviewed. The mean age of the interviewees was 58 years, with the majority being male and of Malay ethnicity. Other demographic characteristics are presented in Table III.

Table III: Demographic characteristics of participants (N = 22)

No.	Participant	Age	Ethnicity	Gender	Employment	Marital	Status hospitalization
1	JW	57	Malay	Male	Police Officer	Married	Inpatient
2	HS	69	Malay	Male	Retired Policeman	Married	Inpatient
3	MMS	57	Malay	Male	Lecturer	Married	Outpatient
4	END	65	Malay	Female	House wife	Married	Outpatient
5	LUK	54	Malay	Male	Business	Married	Inpatient
6	MD	65	Indian	Male	Retired bus driver	Married	Outpatient
7	NF	48	Malay	Female	Teacher	Married	Outpatient
8	SA	56	Malay	Female	House wife	Married	Outpatient
9	IS	69	Malay	Male	Retired officer	Single	Outpatient
10	ABB	60	Malay	Male	Retired officer	Married	Inpatient
11	HAS	68	Malay	Male	Retired Policeman	Married	Inpatient
12	MNMR	60	Malay	Male	Retired Fire-fighter	Married	Outpatient
13	WAA	59	Malay	Male	Businessman	Married	Inpatient
14	RN	55	Malay	Male	Policeman	Married	Inpatient
15	MH	48	Malay	Male	Engineer	Married	Inpatient
16	MZ	37	Malay	Male	Businessman	Married	Inpatient
17	PKH	66	Chinese	Male	Contractor	Married	Inpatient
18	GN	56	Indian	Male	Plantation Estate Oil Palm worker	Married	Inpatient
19	KAS	59	Malay	Male	Retired Policeman	Married	Inpatient
20	KHL	70	Indian	Female	Retired Chef	Widow	Outpatient
21	IMT	77	Malay	Male	Retired	Single	Outpatient
22	VRP	65	Indian	Male	Plantation Estate Oil Palm Worker	Married	Inpatient

The outcomes of the IPA analysis show that the CHD patients made sense of their treatment experiences by engaging in two types of health outcome behaviors: adherence or non-adherence to the prescribed treatment. These two superordinate themes of adherence and non-adherence behavior were organized from three subordinate themes which were developed from the emergent themes of each individual accounts. The emergent themes and their respective subordinates' themes are summarized in Table IV.

Table IV: Master table of patients' findings based on their treatment experiences

Superordinates themes	Subordinate themes	Emergent themes
Adherence or non-adherence behavior to the prescribed treatment	Psychosocial beliefs	<ul style="list-style-type: none"> Necessity beliefs on the prescribed treatment Concerns beliefs on the side's effects of the prescribed treatment Cultural beliefs, or religion-based treatment preferences
	Doctor-patient's relationships	<ul style="list-style-type: none"> Positive doctor-patients' relationships during receiving the treatment Negative doctor-patient's relationships during receiving the treatment
	Information Seeking Behaviour	<ul style="list-style-type: none"> Active type information seeking behavior on the treatment Passive type information seeking behavior on the treatment

Doctor-Patient Relationships

The themes of doctor-patient relationships were largely divided into two sub-themes, the positive and negative experiences specifically on the need for attention respective practitioners. Most informants highlighted the need for a good doctor-patient relationship in hospitals. This is because a positive doctor-patient relationship makes them feel that their doctors listen to, and care about their problems. Some participants noted that positive feedback from their doctors is in fact remedial. Accordingly, some of them have recounted positive experiences with their doctors, as indicated by excerpts from the interviews below:

I also recognise the Indian doctor... when I was in the ICU [intensive care unit], he always visited me even though it was after his office hours. He would ask how I was doing. I have a lot of respect for him, he is really good. (HS, Male, Malay)

Here, anyone [healthcare professionals] who comes to visit seems to be trying very hard to really take care of you because you have this heart condition. They want to really look after you so that your stress is lessened. From there, I see that they are very professional. All the staff here treat the patients well. These human relationships make us feel at ease, and they are a form of medicine. (GN, Male, Indian)

However, only several informants reported on negative experiences with their doctor:

There is a doctor who likes to threaten me and make me feels really offended every time my blood pressure check-up turns to high, he said angrily, "Next month come again and I will give you injection!". (SA, Female, Malay)

Frustration on the doctor-patient relationship dissatisfaction was expressed during the interviews with an angry tone and facial expressions, particularly when

the patient was not provided with adequate attention from the doctor. Unfortunately, when the expected doctor-patient relationship was unachieved, the patients with CHD often developed a false understanding about their treatment and role as patients.

I have been admitted into this hospital many times. Whenever a patient gets admitted, it is as though they [the doctors] do not have time to see patients. Doctors do not have time for the patients. You see the doctors running everywhere, right? They do not have time to converse with the patients. They only ask if there is an appointment. Also, when it comes to us being sick, they do not even come to see us. To them, we should just be lying down in bed! (RN, Male, Malay).

Information seeking behaviour

There are two identified sub-themes such as active or passive information seeking behavior to enhance knowledge needs on CHD self-management. Referring to the patients' willingness to seek knowledge, the majority of the informants were interested in obtaining more in-depth knowledge of specific self-care measures following discharge, as well as the ways to prevent future episodes of heart attacks. There were two categories of informants: those who were very active in seeking information, and passive ones who simply waited for the doctor to explain the same. The active type of patients put in extra effort to search for information regarding their illness and its treatment. Not only did they consult their doctors; they used WhatsApp to communicate with their friends who have experienced recurrent heart attacks as well.

"When I got this, I asked my doctor – the one who treated me – a lot of questions. So, I feel that there are many ways by which we can learn about this. I feel that I understand more [about my illness] after the doctor has explained it. If we ask them questions, they will talk more. That is my point of view." (MH, Male, Malay)

"Now, they [my friends] keep asking questions, which is good. Since I now have this condition, I can share my stories. One of the ways to do so is through the WhatsApp group. I do not have many friends who have had a heart condition... there are probably only 2 or 3 of them, so I just WhatsApp them... It is more of personal messaging; we just share our experiences." (ABB, Male, Malay)

The need for the post-treatment self-management care specifically on lifestyle changes was raised by most of the informants as one of their major concerns in avoiding recurrent heart attack. Continuous information through support groups specifically on CHD self-management after discharge from hospital were mentioned as one of the solutions. Social media such as WhatsApp group was suggested as one of the communication mediums to clarify misunderstanding and reliefs the patients with CHD post-treatment stress.

I do feel that a support group is needed. Now that

we have facilities like WhatsApp, so make a group of [heart patients] so we can share [our experience]). I do feel that this helps reduce confusion over the illness. For example, right now, when I feel that something is not right, or that my leg is swollen, I will send a message through WhatsApp. They will respond, they will say that these occurrences are normal. I will need to go through a healing process for 5 to 6 months after discharge. So, when you have a support group, you will know all these. (MMS, Male, Malay)

As mentioned, passive patients preferred to wait and hope that their doctors would explain their illnesses and the treatment of the same:

None of the doctors who have seen me have told me what I was not allowed to eat. They just came in and checked up on me. They would discuss things amongst themselves. I have been hospitalised for a week just for the doctor to test some medicines and determine the one that is suitable for me. I could not say or ask anything to that. I was willing to listen to them; I would accept whatever good things they had to say about my illness. Unfortunately, I have already been inflicted by this illness. Only after having an illness were we given these advices. So, for me, it was a little bit too late, right?. (RN, Male, Malay)

Psychosocial Beliefs

As per Table IV, there were three emerging sub-themes in the psychosocial belief factor: the preferences for cultural-beliefs based treatment; taking medicines is concerns on the side effects of prescribed treatment; and the conviction that the prescribed treatment was important. All of these factors were interrelated. Most of the informants reported differences in treatment preferences according to their cultural beliefs, social backgrounds, and religious practices. One of the reasons for this was that their beliefs on complementary alternative medicines (CAM) were related to their understanding of the causes of the illness according to their cultural and religious backgrounds. Subsequently, these beliefs have led to the impression that CAM was the only way to cure their illness.

My illness involved supernatural disturbances. The ustaz [religious healer] administered treatment accordingly, and there was a positive effect. In the beginning, when I had these disturbances, I would pray and read the verses of the Quran, which would take a while for me to get cured. However, after I consulted the ustaz and he recited certain verses, I realized that I had no more disturbances within two days. He [the ustaz] performed a spiritual healing ritual on me. (WAA, Male, Malay)

Other informants who never had spiritual CHD treatment experiences also believed that CAM could alleviate their illness, so they continued taking CAM such as herbal and natural remedies:

Hospital medicines I take, Chinese traditional

medicines also I take. I just alternate the usage, you cannot take both at once. (PKH, Male, Chinese)
Herbal juice, yes, but I do not use many plant extracts or things like that. It has honey, garlic, lemon, ginger and vinegar...It has 5 ingredients. You just need to drink one dose of it; you don't need much. You might need to drink it for a month or two. As long as you have cleansed yourself, that is enough. You do not need to keep cleaning yourself every day. (VRP, Male, Indian)

Apart from the belief that CAM is needed more than the prescribed medicines in cardiac rehabilitation, most of the concerns regarding the latter are the side effects of the medicines:

I remember to eat my medicine, but I am scared that the medicine does not take effect. This is why I also drink a lot of water; otherwise, I'm afraid the medicine will have bad effects on my kidney. (END, Female, Malay)

Whenever I take the medicine, I will frequently urinate. Wherever I go, I have to go to the toilet for at least 10 times. Also, my weight has decreased... last time, I used to weigh 90 kilos and now I am nearly 82 kilos. That is why there are times that I think that... if I do not eat [the medicine], I will still be fine. (NF, Female, Malay)

Nevertheless, interviews with certain informants also revealed the necessity of the treatment based on their beliefs without them having to opt for other alternative treatment.

No.. No.. Traditional treatments. Not at all. Even when my friends recommended me to see tabib Cheng in Malacca. For me though, I am not interested at all. Because even though the "tabib" [Chinese traditional healer] says he knows how to cure heart diseases, I would still go to the hospital to see the specialists and doctors because they would know better. My 'tabib' is the medical doctor and specialists. The specialist has given me A to Z explanations. And I've done them. (JW, Male, Malay)

DISCUSSION

The analysis demonstrates factors affecting treatment adherence amongst multiethnic patients with CHD in Malaysia. Many past studies have found similar patterns in line with current findings such as doctor-patient relationship and information seeking behaviour on treatment self-management after hospital discharge as significant factors that influence adherence to prescribed treatment among the CHD patients (7). On the other hand, patients' psychosocial beliefs on CAM are a prominent cultural based factor that has limited recognition in previous studies conducted in other countries. These are all major risk factors in treatment adherence, and this demonstrates that either positive doctor-patient relationship experience, attitude towards

knowledge needs, or understanding of the psychosocial beliefs are the causes of treatment adherence.

Doctor-patient relationships are evidently the chief underlying factor in treatment adherence due to the potential facilitators or barriers between doctors and patients (24). For instance, the patients' experience of positive relationships as found in this study acts as a facilitative factor contributing towards treatment adherence compared to negative doctor-patient relationships. This positive experience entails patient-oriented care through specifically verbal communications and interactions regarding their diagnosis, prognosis, and prescribed treatment. Also worthy of note is that issues regarding the different ethnicities between doctors and patients were not mentioned; this seems to have strengthened the relationship instead. However, barriers will arise if the relationships do not make sense to the patients (25). For instance, a qualitative study on beliefs about South Asian (Indian and Bangladeshi) cardiovascular patients suggests that negative doctor-patient relationships are characterized by several factors: patients' lack of understanding of their illness and prescribed treatment; the doctors' failure to fully communicate the disease management plan; and patients' lack of engagement with the treatment plan suggested by their doctors (26). Without positive doctor-patient relationship, consensus between doctors and patients on the prescribed treatment was not achieved. Consequently, the prescribed treatment often contradicts the patient's beliefs system and finally influence the patient's adherence behavior.

Similarly, qualitative findings from Wann-Hansson et al. reported that patients with active information-seeking behaviour, and who contacted the hospital more often, managed their discharge information better than their passive counterparts (27). During the hospitalization, the lack of knowledge about CHD encouraged some patients to actively seek relevant information through their respective health professionals. After discharge however, uncertainty from their restricted knowledge on the treatment self-management prompts them to seek out information from other sources such as family, friends and various sources of knowledge to manage their everyday lives. Nevertheless, patients who do not actively seek information, and who are not well-informed on treatment management and the need for lifestyle changes will continue practicing unhealthy habits that often lead them back to the hospital. Information-seeking behaviours among patients are usually based on the patient's health literacy, ability to retain and recall information, demographic background, personal experiences, and cultural beliefs (28). However, active information-seeking information attitude was explained negatively by study on public awareness of CAM usage in Malaysia (29). For instance, unlimited information on the prescribed treatment which could be easily accessed from media, including the adverse effects of medicine,

give rise to increased CAM utilization (29). Overall, the information-seeking behaviour involves a complex navigation of the patient's uncertainties, beliefs, and knowledge about their prescribed treatment, with a desire to learn more about their health condition. Patients therefore will benefit from innovation in clinical practice to be able to receive adequate information by their doctor or health professional, adjusted according to the patient's background and needs (30).

Our current analysis identified crucial psychosocial beliefs factors that attributed the causes of treatment adherence among CHD patients to factors outside medical explanation. Firstly, these beliefs may be due to CAM usage, which is still the main mode of treatment in the rural parts of Malaysia (31). Secondly, strong psychosocial beliefs demonstrate a lack of understanding of the physiological causes of CHD among patients (32). And thirdly, these beliefs result from inadequate information provided during consultation with the doctor (33). Previous studies have reported that both cultural and religious aspects – through the interpretation of symptoms (32) and preference for CAM (34,35) by the patients – had an influence on their healthcare-seeking behaviour. This in turn influences the patient's non-adherence behaviour to the prescribed treatment. Factors such as persistent fear on the potential side effects of medicine, and the conviction that CAM are neutral and safe often results in the patients resorting to CAM such as natural home remedies (33). This consequently leads patients to develop a false sense of security that they are able to manage their own illnesses, and no longer feel the need to attend consultations with medical doctors and to apply themselves to the prescribed medicines (35).

The findings of this study suggest that there are three factors -- doctor-patient relationships, information-seeking behaviour, and psychosocial beliefs – which occupy significant roles in treatment adherence among CHD patients. These three factors are interrelated in explaining different perspectives for providing a harmonized context for making meaning in the lives of CHD patients in multi-ethnic Malaysia. Continuous patient-centered empowerment approaches through various innovative self-management care by healthcare practitioners is recommended to enhance long-term treatment adherence (36). This study furthermore reveals that psychosocial beliefs are considered a personal understanding of the illness which influences their treatment behavior either adhere or not adhere to their prescribed medicines. This personal concept is based on the patient's strong cultural, religious or spiritual attachments that may lead to a greater conviction in spiritual methods of healing rather than the prescribed medical treatment from hospitals. Despite previous local findings highlight on health-conscious behaviours and practices variations according to respective races, religion and culture (14); this study shows similarities in

majority of the informant's treatment approach which relies on collectivist health appraisals. The different race groups mentioned on the importance of positive social ties with doctors during receiving their treatment, expecting practical support from partner and family, and actively seeking advice from friends for them to be able to adjust with the treatment management at home from in order to foster more favourable health outcomes (37). Similarly, different culture also experiences similar treatment behaviour preference such as complementing alternative medicines to conventional medicine as an additional effort towards their illness recovery despite on respective culture, beliefs, religions and practices. We recommend for health professionals to acknowledge on the collectivism cultural approach in order to achieve effective patients-centered treatment for CHD patients in a multi-ethnic society such as in Malaysia. It can hence be inferred that there is a crucial need for the medical doctor or healthcare professionals to be culturally aware and competent (14); to be able to accept the importance of effective doctor-patient relationship through active listening and social support; and also to provide feasible yet cost-effective communication channels for patients in seeking the relevant treatment information about their illness (36).

One limitation of this study is that it was conducted in tertiary teaching hospitals. The informants who participated might not represent the Malaysian population with CHD as seen by general practitioners in other state/government-funded hospitals. Furthermore, most participants in this study were Malays, who are the biggest ethnic group in Malaysia. More male informants were recruited, which also reflects the fact that the majority of CHD patients in Malaysia tend to be men. Although data collection was conducted from August to December 2015, the data is still applicable for current practice with aims to gain an in-depth understanding on the scenario based on phenomenological analysis within the studied population. Nevertheless, one careful consideration to be highlighted on the qualitative nature of these findings is to not generalize the informants' statements and make them applicable to all population.

CONCLUSION

This study has explored the cultural-based factors behind the treatment experience among recurrent CHD patients in Malaysia. IPA analysis of interviews revealed a number of factors in patients' treatment experience which negatively affected their medications adherence. These factors – classified into (i) doctor-patient relationships (ii) information-seeking behaviour, and (iii) psychosocial beliefs towards treatment – should be given due consideration in future attempts to design innovative and effective cardiac rehabilitative programmes in Malaysia. A proper understanding of the factors affecting the CHD patients' treatment adherence can also contribute to the attainment of the

above-mentioned goal. A deep understanding of this qualitative data specifically on the psychosocial beliefs towards treatment are crucial to enhance prescribed treatment adherence and prevent the CHD patients from resorting to cultural- and beliefs-based CAM rather than the prescribed therapies.

ACKNOWLEDGEMENTS

This work was supported by the University Research Grant [Code: 2017-0135-106-01] from Universiti Pendidikan Sultan Idris, Malaysia. The authors would like to extend their gratitude to RMIC, UPSI that helped fund the research.

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