



Knowledge, awareness, and perception of coronary heart disease (CHD) among residents in Kuantan, Pahang, Malaysia[☆]



Thandar Soe Sumaiyah Jamaludin^{*}, Shuhadah Jorani, Sanisah Saidi

Kulliyah of Nursing, International Islamic University Malaysia, Pahang, Malaysia

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KEYWORDS

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Abstract

Objective: This study aimed to determine the level of knowledge, awareness, and perception about CHD symptoms and risk factors among residents in Kuantan, Pahang.

Methods: A cross-sectional study was conducted in 400 participants who presented at four shopping malls in Kuantan city. A convenient sampling method was used to recruit participants. A self-administered questionnaire was used in collecting data. Data were analyzed by using SPSS version 22.0.

Results: Majority of the participants were Malays with mean age among 18–39 years old. Of the 400 participants, the majority had high knowledge of CHD poor awareness and poor perception of CHD. There was an association between socio-demographics and knowledge, awareness, and perception level towards CHD with p -value <0.05 .

Conclusion: These study findings indicated that public health promotion and intervention are needed in Kuantan, Pahang regards to knowledge and awareness of CHD symptoms and risk factors.

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Introduction

Every year, an estimation of 17.7 million people died which is 31% of all global deaths are from having cardiovascular

diseases (CVD).¹ Estimated of 7.4 million death of people with CVD were due to coronary heart disease (CHD) in 2015.¹ CHD is the general name for heart attack and also known as coronary artery disease.² There were studies done regarding the knowledge, awareness, and perception of CHD in the United State, Australia, China, Singapore and Malaysia.^{3–5}

The knowledge of CHD consists of its warning signs of a heart attack which are fatigue, anxiety, chest discomfort, tummy (indigestion), shortness of breath, and sleeping difficulties but the symptom of a heart attack are chest sensation or pain, unusual fatigue, radiating pain to back jaw or

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^{*} Corresponding author.

E-mail address: sumaiyah@iiu.edu.my (T.S.S. Jamaludin).

Table 1 Demographic characteristics.

N = 400	Variables	Frequency (n)	Percentage (%)
Age	18–39 years	316	79.0
	40–59 years	73	18.3
	60+ years	11	2.8
Gender	Male	116	29.0
	Female	284	71.0
Race	Malay	363	90.8
	Chinese	22	5.5
	Indian	15	3.8
	Others	0	0.0
Educational degree	Primary	12	3.0
	Secondary	203	50.7
	Tertiary	185	46.3
	Never attended school	0	0.0

arm and breathing difficulties.⁶ Besides that, the risk factors of CHD are hypertension, hypercholesterolemia, diabetes, overweight/obesity and smoking.² A previous study found that people who are aware and have good perception of CHD are individual who had experience towards victims of heart attack included themselves, people who had health professional education about the symptoms, or someone who worried about having a heart attack were able and had better reporting the true symptoms of CHD.⁷ Therefore, this study determines the relation of demographic characteristics with a difference of knowledge, awareness, and perception of risk factors and symptoms of CHD among residents.

Method

This was a cross-sectional study carried out in Kuantan city of Pahang state in Malaysia. Kuantan is the 17th largest city in Malaysia based on population and the largest city in the East Coast of Peninsular Malaysia. A total of 400 participants 18–60 years and above were selected by using a convenience sampling method at four shopping malls. Those who below 18 years old, cannot read and write English or Malay language were excluded. Informed consent was signed prior to participate in this study. All participants were given a set of self-administered questionnaire to be completed within 10 minutes.

An adopted self-administered questionnaire was used in this study.⁸ The content validity of the questionnaire was done by an expert panel, which consisted of an associate professor in clinical pharmacy, a lecturer in clinical pharmacy and three community pharmacists prior to the actual study. The reliability test for the questionnaire was also carried out, and a Cronbach's alpha value was 0.82. Data were analyzed by using SPSS 20.0. The descriptive analysis was used to analyze the demographic characteristics and level of knowledge, awareness, and perception of CHD among residents in Kuantan.

Results

The response rate was 95%. Majority of participants were aged among 18–39 years old (79%), female (71%), Malays (90.8%) and had secondary as the highest educational degree (50.7%). The details of demographic characteristics are shown in [Table 1](#).

The result of this study reported that residents in Kuantan had poor knowledge of CHD. The mean knowledge score was 80.26, SD = 11.223. The percentage for poor knowledge score was 207 (51.7%). Majority of the respondents answered correctly the symptoms of CHD. Shortness of breath 345 (86%), chest discomfort 370 (92.5%), irregular heartbeats 338 (84.5%), dizziness 270 (67.5%), sweating 269 (67%) and discomfort radiating to the back, jaw, throat or arms 206 (51.5%). However only nausea and feel indigestion were incorrectly answered as one of the symptoms of CHD.

Majority of participants answered correctly regarding CHD risk factors. Tobacco smoking 357 (89%), physical inactivity 330 (82.5%), high blood cholesterol 365 (91%), high blood pressure 340 (85%), Low fruits and vegetables in daily diets 271 (68%), obesity 350 (87.5%), stress 294 (73.5%), diabetes 250 (62.5%), old age 247 (62%), have family history of cardiovascular diseases 322 (80.5%) and high fat diet 301 (75%).

Regards to awareness of CHD, the majority do not attend any campaign or workshop about CHD 256 (64%), 328 (82%) never smoking cigarettes, 381 (95.3%) not drink alcohol, describe about right their weight status 242 (60.5%), have any family history of heart disease, high blood pressure, diabetes, or high cholesterol 225 (56.3%), exercise 1–2 times per week 203 (50.7%), rarely eat healthy diet 188 (47%), considered about the same health as people of the same age 246 (61.5%), participants with high blood pressure and heart disease were more aware of getting take medications of their illness than people with high blood cholesterol and diabetes, chose dietitian 163 (40.8%) to get information of healthy lifestyle and chose internet 243 (60.8%) as their source of information about healthy lifestyle.

Table 2 Association between demographic characteristics and level of knowledge, awareness, and perception of CHD.

N = 400	Variables	Mean of knowledge level	Mean of awareness level	Mean of perception level	p-Value of knowledge level	p-Value of awareness level	p-Value of perception level
Age	18–39	79.60	18.22	38.16	0.000	0.000	0.493
	40–59	82.73	18.08	38.90			
	60>	82.73	18.00	32.91			
Gender	Male	80.91	17.28	38.47	0.422	0.000	0.594
	Female	80.00	18.57	38.03			
Race	Malay	80.40	18.26	36.73	0.190	0.008	0.490
	Chinese	76.32	18.09	39.20			
	Indian	82.53	16.73	1.99			
Educational degree	Primary	81.00	17.08	32.75	0.020	0.857	0.000
	Secondary	77.82	18.20	37.66			
	Tertiary	82.89	18.25	39.05			

With regards to perception of CHD, majority scored 10 for the consequence item 154 (38.5%), scored 5 for timeline item 115 (28.7%), scored 10 for personal control item 131 (32.8%), scored 10 for treatment control item 138 (34.5%), scored 0 for identity item 204(51%), chose 10 for concern item 151 (37.8%), chose 5 for coherence item 82 (20.5%) and chose 10 for emotional representation item 101 (25.3%).

Then, the ANOVA test was used to see the association between socio-demographic characteristics and knowledge, awareness and perception towards CHD. There was an association between age and knowledge level with *p*-value of 0.000, age and awareness level with *p*-value of 0.000, age and perception level *p*-value of 0.044, gender and awareness level *p*-value of 0.000, race and awareness level *p*-value of 0.008, educational degree and knowledge level *p*-value of 0.020, educational degree and perception level *p*-value of 0.000 as shown in Table 2.

Discussion

The findings showed that the majority of residents in Kuantan who had to participate in this study was among age 18–39 years old, female, Malays and had secondary as the highest educational degree. The findings of this study were parallel with previous study.⁹

Majority of participants had poor knowledge score of CHD symptoms and risk factors. This was the same findings with previous studies.^{10–11} There were significantly different between group age, gender, race, and educational degree and level of knowledge of CHD. This also similar finding with previous studies.^{12–15} The participants aged 18–39 had a higher knowledge than aged 40 years and above. This result was similar finding with previous study.¹¹

Male had a higher knowledge score and perception score of CHD than the female. This study result was same finding with previous studies.^{12–15} However, this study result was opposite with the findings from previous studies which they

reported female had higher knowledge of CHD symptoms than male.^{16–17}

Besides that, participants with secondary and tertiary school as their highest educational degree had higher knowledge level than resident with primary school which was similar finding with previous studies where the researcher reported that people with educational level below than secondary school had poor knowledge of CHD.^{11,13,15} People who not educated beyond high school had low knowledge level which reported by McElnay (2011) also supported this study result. The study by Chan (2014), Fang et al. (2011), Barnhart et al. (2005) and Mun et al. (2010) supported that people with an educational level higher than high school had high knowledge level of CHD.

The majority of participants had poor awareness level of coronary heart disease. Between-group age, gender, race, and educational level, the awareness level was statistically significantly different among gender group only. This was similar findings with the previous study where the researcher reported that lack knowledge regarding CHD risk factors (high LDL-C) lead to a lack of awareness of the CHD risk factor (high LDL-C).¹⁸

In this study, only moderate awareness of CHD among all age groups, all race groups, and all educational degree groups. Female been reported to have a higher awareness of coronary heart disease than male. This also contradicted with this study result which had been reported that female had poor awareness of heart disease.^{4,17}

Majority of participants had poor perception level of coronary heart disease. Between-group age, gender, race, and educational level, the perception level was statistically significantly different among gender and educational degree. The results of this study reported that people aged 18–59 years old had a moderate perception of CHD while aged 60 years old and above had a high perception of CHD, the male had high perception level while female had moderate perception of CHD, *p*=0.022. All race groups and people with the primary and secondary school as the highest educational degree in this study had moderate perception of CHD. People with the tertiary school as the highest educational degree had high perception of CHD.

This study was the same finding with previous studies where the researcher reported that male had high perception level than female by perceived CHD risk factors such as weight estimation and its symptoms.^{3,12} Moreover, the result of this study reported that participants with the secondary and tertiary school as the highest educational degree had higher perception level of CHD than primary school graduated.

Generalization of the results to all studied age, gender and races were limited because the percentage of people aged 18–39 years old, female and Malays were over-presented. This study was done particularly in Kuantan, Pahang in which the results cannot be generalized to another part of Malaysia. This study was conducted within 6 months period, and for a big study population to be studied, it may cause bias in sample selection which the researcher tried to reduce the bias by using convenience sampling method so that confidence level of the correct sample size been chosen was 95%. Furthermore, the studied participants might over reporting or under-reporting the answer about CHD knowledge, awareness and perception.

Thus, we encourage for further investigation to find out the effect of age, gender, race and the educational degree to an increased level of knowledge, awareness, and perception of CHD among residents in Kuantan. So that, more public health intervention for primary and secondary prevention of CHD can be done towards these targeted groups.

Conclusion

The residents of Kuantan still limited knowledge regarding CHD symptoms and risk factors. Therefore, health care provider and government need to do public health education or promotion about primary and secondary of CHD prevention strategies towards the targeted groups and population that may have a high possibility to have CHD. Hence, with adequate basic knowledge of CHD may help people to change their lifestyle and lead towards optimum health of their life.

Conflict of interests

The authors declare no conflict of interest.

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References

- World Health Organization (WHO). Cardiovascular diseases (CVDs). Geneva: World Health Organization; 2017. Available from: <http://www.who.int/mediacentre/factsheets/fs317/e>
- Malaysia Heart Foundation. Heart attack; 2017. Available from: <http://www.yjm.org.my/index.cfm?&menuid=32>
- Giardina EV, Paul TK, Hayes D, Sciacca RR. Cardiovascular disease risk among young urban women. *J Womens Health* (Larchmt). 2016;25:1139–46, <http://dx.doi.org/10.1089/jwh.2015.5697>
- Gholizadeh L, Salamonson Y, Worrall-Carter L, DiGiacomo M, Davidson PM. Awareness and causal attributions of risk factors for heart disease among immigrant women living in Australia. *J Women's Health*. 2009;18:1385–93, <http://dx.doi.org/10.1089/jwh.2008.0956>
- Quah JL, Yap S, Cheah SO, Ng YY, Goh ES, Doctor N, et al. Knowledge of signs and symptoms of heart attack and stroke among Singapore residents. *BioMed Res Int* 2014. 2014, <http://dx.doi.org/10.1155/2014/572425>
- Kaiman M, Fahs PSS, Wells M, Blumkin A, Pribulick M, Roland R. Education to increase women's knowledge of female myocardial infarction symptoms. *J N Y State Nurse Assoc*. 2011;43.
- Ratner PA, Johnson JL, Mackay M, Tu AW, Hossain S. Knowledge of "heart attack" symptoms in a Canadian urban community. *Clin Med Cardiol*. 2008;2:201–13, <http://dx.doi.org/10.4137/CMC.S709>
- Sarriff A, Amin AM, Mostafa H. Public knowledge and awareness of cardiovascular diseases and the expected role of community pharmacists in the prevention and management of cardiovascular diseases in Penang, Malaysia. *Chiang Mai Univ J Nat Sci*. 2014;13:355–70, <http://dx.doi.org/10.12982/CMUJNS.2014.0041>
- Akter SFU, Fauzi ARM, Nordin MS, Satwi S, Mohamed A, Aznan MA. Prevalence of cardiovascular risk factors in a selected community at Kuantan, Pahang, Malaysia. *Int J Med Med Sci*. 2010:322–8.
- Koc S, Durna Z, Akin S. Interpretation of symptoms as a cause of delays in patients with acute myocardial infarction, Istanbul, Turkey. *EMHJ – East Mediterr Health J*. 2017;23:287–94.
- Quah JLJ, Yap S, Cheah SO, Ng YY, Goh ES, Doctor N, et al. Knowledge of signs and symptoms of heart attack and stroke among Singapore residents. *BioMed Res Int* 2014. 2014, <http://dx.doi.org/10.1155/2014/572425>
- Chan CW. Perceptions of coronary heart disease: the development and psychometric testing of a measurement scale. *Psychol Health Med*. 2014;19:159–68, <http://dx.doi.org/10.1080/13548506.2013.802354>
- Swanoski MT, Lutfiyya MN, Amaro ML, Akers MF, Huot KL. Knowledge of heart attack and stroke symptomology: a cross-sectional comparison of rural and non-rural US adults. *BMC Publ Health*. 2012;12:283, <http://dx.doi.org/10.1186/1471-2458-12-283>
- Ton TGN, Steinman L, Yip MP, Ly KA, Sin MK, Fitzpatrick AL, et al. Knowledge of cardiovascular health among Chinese, Korean and Vietnamese immigrants to the US. *J Immigr Minor Health*. 2011;13:127–39, <http://dx.doi.org/10.1007/s10903-010-9340-x>
- Memiş S, Evci ED, Ergin F, Beşer E. A population-based study on awareness of heart attack in Aydin city-Turkey. *Anadolu Kardiyoloji Derg*. 2009;9:304–10.
- Barnhart JM, Cohen O, Kramer HM, Wilkins CM, Wylie-Rosett J. Awareness of heart attack symptoms and lifesaving actions among New York City area residents. *J Urban Health*. 2005;82:207–15, <http://dx.doi.org/10.1093/jurban/jti045>
- Lutfiyya MN, Bardales R, Bale R, Aguero C, Brady S, Tobar A, et al. Awareness of heart attack and stroke symptoms among Hispanic male adults living in the United States. *J Immigr Minor Health*. 2010;12:761–8, <http://dx.doi.org/10.1007/s10903-009-9250-y>
- Brown TM, Tanner RM, Carson AP, Yun H, Rosenson RS, Farkouh ME, et al. Awareness, treatment, and control of LDL cholesterol are lower among U.S. adults with undiagnosed diabetes versus diagnosed diabetes. *Diab Care*. 2013;36:2734–40, <http://dx.doi.org/10.2337/dc12-2318>