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

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Received 13 November 2018; accepted 17 April 2019
Available online 13 July 2019

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...
Therefore, besides the knowledge, awareness, and perception of coronary heart disease (CHD) among residents of Kuantan, the majority of participants never smoked cigarettes, even though they were aware of the risk factors of CHD and smoking. In contrast, the majority of respondents were aware of the symptoms of CHD, such as chest discomfort, shortness of breath, and palpitations, but only a small percentage of the community was able to correctly identify the symptoms. The results suggest that there is a need for improved public health education and awareness campaigns to increase knowledge and change behavior towards unhealthy lifestyle choices and smoking among residents of Kuantan.
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.

Majority of participants had poor knowledge score of CHD symptoms and risk factors. This was the same findings with previous studies. 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. The participants aged 18–39 had a higher knowledge than aged 40 years and above. This result was similar finding with previous study. Male had a higher knowledge score and perception score of CHD than the female. This study result was same finding with previous studies. However, this study result was opposite with the findings from previous studies which they reported female had higher knowledge of CHD symptoms than male.

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. 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).

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.

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.

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

<table>
<thead>
<tr>
<th>N = 400 Variables</th>
<th>Mean of knowledge level</th>
<th>Mean of awareness level</th>
<th>Mean of perception level</th>
<th>p-Value of knowledge level</th>
<th>p-Value of awareness level</th>
<th>p-Value of perception level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18–39</td>
<td>79.60</td>
<td>18.22</td>
<td>38.16</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>40–59</td>
<td>82.73</td>
<td>18.08</td>
<td>38.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60+</td>
<td>82.73</td>
<td>18.00</td>
<td>32.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>80.91</td>
<td>17.28</td>
<td>38.47</td>
<td>0.422</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>80.00</td>
<td>18.57</td>
<td>38.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>Malay</td>
<td>80.40</td>
<td>18.26</td>
<td>36.73</td>
<td>0.190</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>76.32</td>
<td>18.09</td>
<td>39.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>82.53</td>
<td>16.73</td>
<td>1.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational degree</td>
<td>Primary</td>
<td>81.00</td>
<td>17.08</td>
<td>32.75</td>
<td>0.020</td>
<td>0.857</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>77.82</td>
<td>18.20</td>
<td>37.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>82.89</td>
<td>18.25</td>
<td>39.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.\textsuperscript{3,11} 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, healthcare 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.

Acknowledgements

The authors would like to express our appreciation to International Islamic University Malaysia (IIUM) for funding this study (RIGS16-140-0304). The authors also would like to express gratitude to those who directly or indirectly participate in the completion of this study.

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