Knowledge of Coronary Heart Disease Risk Factors among People in Banda Aceh

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Keywords: Knowledge, Coronary Heart Disease, Risk Factors

Abstract: Coronary heart disease (CHD) is the major of the health problem in Indonesia, especially in Aceh Province. To prevent CHD, it is important to know the knowledge level of CHD's risk factors among individuals. The high-knowledge level of CHD's risk factors can increase the motivation of an individual to prevent the developing risk factors. The aim of this study is to know the knowledge level of CHD's risk factors among Banda Aceh citizen. The descriptive cross-sectional was done among 384 subjects and interviewed with a modified version of Heart Disease Fact Questionnaire (HDFQ). The result among 12 CHD's risk factors assessed, 3 risk factors of CHD marked low: menopause (31%), diabetes (44.3%), and HDL levels (46.1%). In general, the knowledge of CHD's risk factors among Banda Aceh citizen is low. Due to the high CHD's prevalence in Aceh Province, educational program is important to prevent the incidence of CHD among Banda Aceh people.

1 INTRODUCTION

Coronary Heart Disease (CHD) is a heart disease with an obstruction in coronary blood vessels. It is the major health problem in the world due to the high number of mortality and morbidity (WHO, 2017). In 2015, the main cause of death in the world was CHD with more than 9 million death (WHO, 2016). The prevalence of CHD was increased in the low-middle income country, it affected by the lifestyle changing (Smith, 2012). Otherwise, the prevalence of CHD significantly decrease in high-income country in the latest decades (Moran, 2014).

The number of death caused by CHD in Indonesia was the highest after stroke, 12.6% (SRS, 2014). The prevalence of CHD in Indonesia was 0.5% by diagnosis and 1.5% by diagnosis-symptoms (Riskesdas, 2013). This problem became the main of health expenditure in Indonesia, 39.6% (Bloom, 2014). In Indonesia, the high prevalence of CHD found in Aceh Province. The prevalence of CHD in Aceh is higher than national CHD's prevalence, 0.7% and 2.3% (Riskesdas, 2013).

Even though CHD is a major health problem in Indonesia, especially in Aceh. This disease can be prevented by controlling the risk factors of CHD, for instance hypertension, smoking, diabetes, obesity, inactivity, hyperlipidemia, and diet (Piepoli, 2016). The preventive actions of CHD's risk factors will success with a high-knowledge level of CHD's risk factors (Al Hamarneh, 2011). The study of the women in the United States, awareness of cardiovascular disease has been increased and also reduced their risk factors. It is related by the decreasing the death due to heart disease in women (Mosca, 2004). In the latest decades, many industrialized countries have been successfully reduced the CHD prevalence by the implementation of primary prevention (Cesare, 2012).

It is important to know the level knowledge of CHD's knowledge among individuals to reach the effective action to prevent the risk factors. The previous study in Oman found that people have a low- knowledge level of CHD's risk factors (Ammouri, 2016). The other study among first-generation Filipino Americans in Southern Nevada was found the high-knowledge level of CHD's risk factors (Angosta, 2014). There is no study that shows the levels of CHD's risk factors in Indonesia or Aceh Province. This study conducted to know the level knowledge of CHD's risk factors among people in Banda Aceh.

2 METHOD

This was a descriptive cross-sectional survey design. Ethical approval was gained from the Ethical Committee of Medical Faculty of Syiah Kuala University. The data were collected from September to October 2018 among covenience sample of 384 people in Banda Aceh. The population of this study was people who attended Blang Padang, the city park in Banda Aceh. The minimal sample was calculated by Krecjie and Morgan sampling method. The participants were a Banda Aceh citizen adult 18 – 60 years old who did not suffer from hearing loss, not diagnosed with heart disease, and stay in Banda Aceh at least for 6 months.

The modified version of the Heart Disease Fact Questionnaire (HDFQ) was originally designed in the previous study (Wagner et al, 2006). The using of this questionnaire was with permission and modified to adopt the condition of this study. The questionnaire translated into Indonesian Language officially done by UPT Pusat Bahasa Syiah Kuala University. Validity and Reliability of this questionnaire were retested and showed this instrument was valid with $r > 0,444$ and high consistency with Cronbach's alpha was 0,884. The modified version of HDFQ consist of 22 items measured knowledge of CHD and the preventive action to improve the CHD's risk factors. Each item of the questionnaire has three possible answers: true, false, or unknown. The total number of the correct answer (range: 0-22) was added and the result is the score for knowledge of CHD's risk factors. The score ≥70% indicate high knowledge, whereas <70% indicate low. The data collected by interviewing participants and helped by the enumerators, medical student of Syiah Kuala University. The data were analyzed by descriptive test to know the percentages of level knowledge of CHD's risk factors.

3 RESULT AND DISCUSSION

3.1 Demographic Characteristics

The participants of this study were 384 people. Most of them were female (64.8%) with a range of age 18-24 years (45.6%). The social economic status was 48.7% high-educational level, 48.7% had low-annual income, and 48.2% were unemployed. 50.8% of participant usually get the health information from media, especially from social media.

Table 1: Demographic characteristics of respondents (N = 384).

Characteristics	n (%)
Gender	
Male	135 (35.2)
Female	249 (64.8)
Age	
18-25 years (late adolescent)	175 (45.6)
26-35 years (early adult)	102 (26.6)
36-45 years (late adult)	71 (18.5)
46-55 years (early elderly)	26 (6.8)
56-60 years (late elderly)	10 (2.6)
Education level	
Low (elementary – middle school)	20 (5.2)
Moderate (high school)	177 (46.1)
High (completed college)	187 (48.7)
Employment status	
Unemployed	199 (51.8)
Employed	185 (48.2)
Montly income	
Low (< Rp2.5 millions)	273 (71.1)
Moderate (Rp2.5 – Rp5 millions)	71 (18.5)
High (≥ Rp 5 millions)	40 (10.4)
Information Access	
Family/friends	89 (23.2)
Media	195 (50.8)
Health workers	81 (21.1)
Workshop	19 (4.9)

3.2 Knowledge of CHD's Risk Factors

Table 2: Knowledge of CHD's risk factors (N=384)

Characteristics	n (%)
CHD Knowledge Score	
Low (<70%)	202 (52.6)
High (≥70%)	182 (47.4)

The measurement knowledge level of CHD's risk factors among people in Banda Aceh indicate low that is 202 participants (52.6%) and 182 participants (47.4%) have high-knowledge level of CHD's risk

factors. The mean percentages CHD knowledge score was 69.06%.

The result from this study parallel with the study from other countries, there are in Oman and Kuwait also have a low-knowledge level of CHD's risk factors. (Ammouri, 2016; Awad, 2014) The other study in Southern Nevada has a high-knowledge level of CHD's risk factors (Angosta, 2014).

The participants in this study were aware about some CHD's risk factors (table 3). Many of them answer correctly to the statement of smoking (n = 355; 92.4%), stress (n = 344; 89.6%), obesity (n = 332; 86.5%), high-cholesterol levels (n = 297; 77.3%), and high blood pressure (n = 294; 76.6%) as CHD's risk factors. They also have good knowledge levels of the preventive action to CHD's risk factors (figure 4) such as: regular activity (n = 351; 91.4%), stress control (n = 309; 80.5%), stop smoking (n = 318; 82.8%), and blood pressure monitoring (n = 302; 78.6%). But, most of them don't aware the risk factor of CHD in menopausal woman (n=119 orang; 31.0%), diabetes (n = 214; 55.7%) and HDL levels (n = 207; 53.9%).

Table 3: The percentages of correct answer of modified HDFQ among community sample of Banda Aceh people (N = 384)

Statement	n (%)
A person always knows when they have CHD	162 (42.2)
If you have a family history of CHD, you are at risk of developing heart disease	200 (52.1)
The older a person is, the greater their risk of developing CHD	268 (69.8)
Smoking is a risk factor of CHD	355 (92.4)
A person who stops smoking will lower their risk of developing CHD	318 (82.8)
High Blood pressure is a risk factor for developing CHD	294 (76.6)
Keeping blood pressure under control will reduce a person's risk for developing CHD	302 (76.6)
High Cholesterol is a risk factor for developing CHD	297 (77.3)
Eating fatty foods does not affect blood cholesterol levels	294 (76.6)
If your 'good' cholesterol (HDL) is high, you at risk for heart disease	177 (46.1)
If your 'bad' cholesterol (LDL) is high, you at risk for heart disease	131 (81.5)
Being overweight increase person's risk of CHD	332 (86.5)
Regular physical activity will lower the risk of developing heart disease	351 (91.4)
Only exercising at gym or in an exercise class lowers the risk factor of developing heart disease	185 (48.2)
Walking and gardening are considered exercise that will help lower risk factor of developing heart disease	326 (84.9)
Diabetes is a risk factor for developing CHD	170 (44.3)
High blood sugar make the heart work harder	236 (61.5)
A person who has diabetes can reduce their risk of developing CHD if they keep their blood sugar levels under control	244 (63.0)
Abdominal obesity is a risk factor for developing CHD	244 (63.5)
Stress may cause increase in blood sugar, blood pressure, and cholesterol levels	344 (89.6)
Slow deep breath, counting to 10 before speaking and going for a walk are examples of stressing inhibitors	309 (80.5)
Women higher CHD's risk factor if menopause	119 (31.0)

The main risk factors of CHD is high blood pressure, followed by smoking, high cholesterol levels, overweight, and diabetes (Peters, 2018). In Indonesia, the major CHD's risk factors in men because of smoking and high blood pressure. But in women, it is associated with high cholesterol levels, high blood pressure, and overweight. The high cholesterol levels became the main risk factors among both genders (Ghani, 2016). In Aceh Province, the risk factors of CHD is similar, there are overweight, smoking behavior, and high cholesterol levels (Hadil, 2015).

The participants have a high awareness of the major CHD's risk factors in Indonesia. Majority of participants in this study have the right answer to the following of modifiable CHD risk factors statements, there are smoking (92.4%), stress (89.5%), being overweight (86.5%), LDL levels (81.5%), high cholesterol levels (77.3%), high blood pressure (76.6%), and central obesity (63.5%). For the non-modifiable CHD risk factors, most of them aware about the aged (69.8%) and family history (52.1%) become the CHD's risk factor. But must of them don't aware about a woman with menopause as the CHD's risk factor. Whereas, in Indonesia the prevalence of CHD more common in aged women than men (Riskesdas, 2013). The CHD's risk factors increased in an elderly woman due to the estrogen decrease and followed by the increased of lipid profile (Agrinier, 2010).
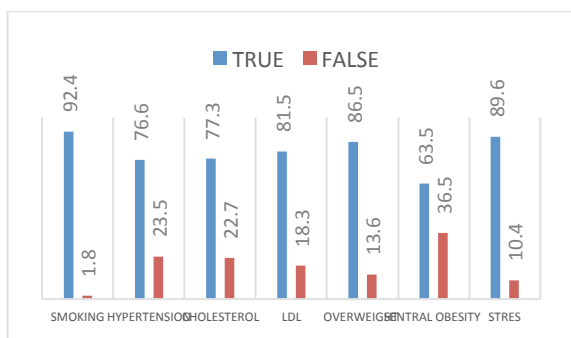
Figure 1: The high knowledge level of modifiable CHD's risk factors.

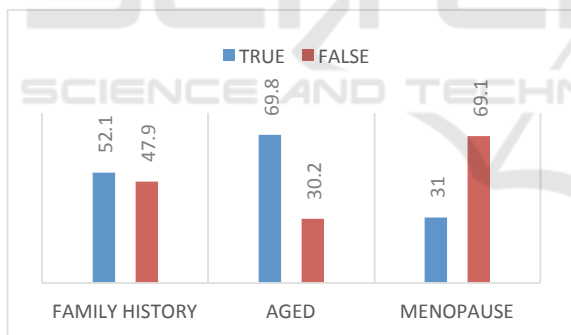Figure 2: The low knowledge level of modifiable CHD's risk factors.

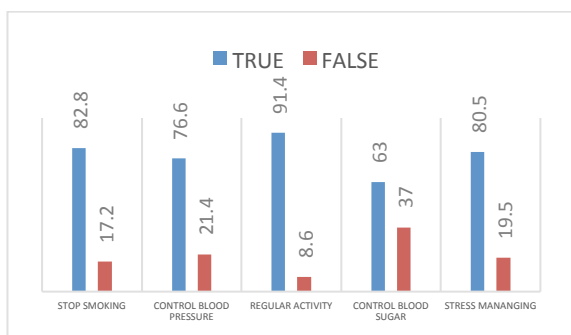Figure 3: The knowledge level non-modifiable of CHD's risk factors.

Figure 4: The knowledge level of preventive action to CHD's risk factors.

Although the participants have sufficient knowledge of cholesterol as the CHD's risk factors, they just aware that high LDL/ 'bad' cholesterol levels as the CHD's risk factors. Most of them don't know about the low HDL/ 'good' cholesterol levels became the CHD's risk factors. The low level of HDL is associated as an important factor in atherosclerosis formation because HDL becomes atheroprotective which can protect blood vessels from plaque formation (Alrawi, 2017; Tousoulis, 2018).

In this study, the participants have a low knowledge of diabetes as CHD's risk factors. Although in Indonesia diabetes is one of the main risk factors for CHD, which is 5.6% in men and 7.7% in women (Ghani, 2016). And the risk factors of CHD increased 8 times in Indonesian with a history of diabetes compared to without a history of diabetes (Hussain, 2016).

4 CONCLUSIONS

The data in this study indicate a low-knowledge level of CHD's risk factors among people in Banda Aceh community. The participants have a deficient knowledge about some risk factors of CHD such as, diabetes, HDL levels, and menopause in women. On contrary, they have sufficient knowledge about the major risk factors of CHD's among Indonesian such as smoking, high blood pressure, high cholesterol levels, and inactivity.

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