

A Conceptual Model: The Impact of Sociodemographic on Coronary Heart Disease

Aza Azlina Md Kassim¹, Juliza Mohamed², Zainal Azhar Zainal Azim³, Mohamad Hafiz Rosli⁴
Mohd Azrin Abd Rahim⁵ Mohd Nazil Salleh⁶

¹Associate Professor, Faculty of Business and Accountancy, Universiti Selangor, Malaysia

^{2,3,4,5}Lecturer, Faculty of Business and Accountancy, Universiti Selangor, Malaysia

⁶Professor, PICOMS International University College, Malaysia

Abstract:

The paper aims to examine the conceptual model on the impact of sociodemographic towards coronary heart disease. There is still limited study on the association between cost of living particularly the cost of food and housing and its impact on coronary heart disease. Therefore, this study incorporates five essential sociodemographic attributes namely, cost of food, children education cost, housing cost, smoking habit and gender. The study provides greater understanding on how the cost of living and lifestyle may give impact to coronary heart disease. It may provide the awareness among the regulators as the society faces burden of high cost of living. The burden may threaten the Malaysians quality of life particularly the lower income group.

Keywords: coronary heart disease, cost of food, children education cost, housing cost, smoking habit, gender

Introduction

The coronary heart disease is the leading cause of death worldwide, and it will continue to dominate future trends in global mortality. Stress level and unhealthy lifestyle are among the risk factors for heart disease. The stress derives from dealing with a higher cost of living. A new survey conducted by YouGov and Bayt.com has recently asked UAE residents about the major causes of stress in their lives. About 66 per cent said the increase in the cost of living contributed the most to stress levels (Maceda, 2017). As the coronary heart disease become more prevalent, it leads to a sharp rise in the health costs and reductions in quality of life. This paper discusses the conceptual model on the effect of financial distress, smoking habit and gender towards coronary heart disease.

Literature Review

Coronary Heart Disease

In the United States, one of every 6 deaths is caused by coronary heart disease (Cheng et al., 2019). China has shown serious concern towards the disease as the statistic indicates 11 million out of 290 million of its population have coronary heart disease (Li et al., 2016). In Malaysia, heart disease has remained the principal cause of death among Malaysians in 2016. This constitutes to about 13.2% (21,410) of the total deaths in the country (Department of Statistics Malaysia, 2017).

The common symptoms among heart disease patients are pain, fatigue and breathlessness (Solano, Gomes & Higginson, 2006). The factors that associate with the disease are high blood pressure, high blood glucose, overweight, high low-density lipoprotein cholesterol, less physical activity and males who smoke (Li et al., 2016). Stress might also be a risk factor for heart disease. The chronic stress exposes the body to unhealthy, persistently elevated levels of stress hormones like adrenalin and cortisol. Studies also link stress to changes in the way blood clots, which increases the risk of heart attack. The main common stressors that affect people at all stages of life is financial concern (Maceda, 2017).

Financial Distress

Financial distress creates negative effects on one's health. The more stressed an individual become over his or her finances, the more irritable, anxious, worrisome he or she may become. The main factor which generates financial burden to an individual is due to higher costs of living that include cost of food, children education and housing.

Cost of Food

The cost of living is associated with the Consumer Price Index (CPI), which includes housing, transportation and food. CPI of the country has increased. The significant increases in costs are seen in the food and beverage (F&B) sector (Hoo, 2018). Besides, between 2011 and 2015, food price inflation in Malaysia was 3.6 per cent on average, whereas overall inflation was 2.4 per cent over the same period (Hamid, 2017). It indicated a higher Food and Beverage Index as compared to overall inflation.

Among the factors that affect the food price in Malaysia are the increase in population where more than two million are immigrants, the changing of nutrition pattern and differing lifestyle had pushed up the demand for all food items. Among the low-income consumers, the demand is increasing for rice and daily food items such as fish, vegetables, chicken and fruits. The rise in food prices is also induced by the increase of inputs price such as fertilizers, labour, chemicals, machinery and land (Fatimah, 2018). However, the domestic food productions are not able to meet the demand for food even though the government has made an effort to increase the imported food (Fatimah, 2018). As a result, the food price increases as the supply is insufficient.

A report by Khazanah Research Institute's State of Households II in 2014 indicated that 94.6 per cent of households spent their money on food (Hamid, 2017). The increases in food price cause difficulties in the life of poor and low income households. They have to reduce available income for other expenses such as cost of transportation, education and parents' allowance. The households may also reduce their food consumption.

Increases in cost of living particularly the food price gives effect to individual or family behaviour (Chien & Mistry, 2013) and stress (Ng, Yeung & Gao, 2019; Maceda, 2017). The cost of living is unpredictable and uncontrollable. It creates stress as there is an imbalance between demand and the individual capacity to cope with such event. The stagnant or slow growth in disposable income and wages makes the scenario worse. The hard life leads them to have multiple jobs (Bouwhuis, Hoekstra, Bongers, Boot, Geuskens & Van der Beek, 2019). The challenges in tight work schedules and various job responsibilities may contribute to stress (Bamberry & Campbell, 2012). Besides, long working hours and less leisure time may give effect to health (Marucci-Wellman, Lombardi & Willetts, 2016).

Continuous stress contributes to health problem (Holden, Harris, Hockey, Ferrai, Yong, Dobson & Lee, 2019; Starrin, Aslund & Nilsson, 2009; Skinner, Zautra & Reich, 2004) including coronary heart disease (Buckland, Pozehl & Yates, 2019). The coronary heart disease is known as the leading cause of death worldwide (Shu, et al., 2019). Thus, this study proposes that financial distress has significant effect on coronary heart disease.

Children Education Cost

Education nowadays is essential for everyone to pursue either the youth or adults in the aspects for human resource development (Karande & Kulkarni, 2005). It also plays an important role of growing and developing a country's economic at the national level (Malaysia Education Blueprint, 2013). In attaining 'Wawasan 2020', the government of Malaysia had spent and invested lots of capital for education development. As reported in 2012, RM37 billion was allocated for education sector and that indicates the largest portion in its budget for that particular year. Thus, it shows that Malaysia put education as national priority in attaining the national goals (Malaysia Education Blueprint, 2013).

Public schools in Malaysia are governed by the Government of Malaysia and parents just need to pay an annual school fees and few miscellaneous fee. However, the cost of education is burdening for the low and middle-income families (Hassan & Rasiah, 2011). Parents nowadays are striving to survive with the

financial burden which includes the costs to be paid for children's education (Loh, 2004). First down payment, uniform cost, footwear expenses, additional kit expenses, high school expenses, additional private tuition expenses, foods and transport expenses are the costs a parent should bear when it comes to children's education (Loh, 2004). The costs were also mentioned in a study by Hassan and Rasiah, (2011). Similarly, Ahlstrom (2013) and Jenkner and Hillman (2005) noted that sending children to school is financially burdening to parents. Uniforms and books were reported to be the high costs and marked as intolerable load towards parents.

Financial burden has brought adults to the psychology effects that could harm the individual's health (Kementerian Kesehatan Malaysia, n.d). Since children's education cost is notified as a financial burden to parents, it might lead to health problem among the parents who struggle to bear the costs. An individual is likely to experience neither moderate nor severe stress which can trigger risk of heart disease if it gets prolonged (McEwen and Sapolsky, 2006). In addition, stress also could response to other heart problems such as obesity and damage on digestive system, immune system, and nervous system.

Housing Cost

Maslow's hierarchy of needs explains the needs of every human being in this world for a better living and one (1) of the basic things in the needs is physiological need which is shelter (Martin & Joomis, 2007). A house acts as a shelter for the human being to be safe from any harm that might occur (Samaratunga, 2013). However, in this era, to own a property is not easy as the price of a house in Malaysia hike up every year (EdgeProp.my, 2018) and most of the household in Malaysia is rated as low and middle-income earners which have made difficult to them to own a property (Malay Mail, 2018). Since the income is stumpy, some of the adults have to rent a house instead of buying. In conjunction to the matter, low income earners are burdened by the rent cost (Goodman & Ganesh, 2017). Hence, housing costs became a financial burden to the adults (Rowley, Ong & Haffner, 2015).

Vidyattama, Tanton and Nepal (2013) noted that housing related financial stress is associated with income and housing costs—mortgage repayments and rents. Spending 30 percent from the income for the housing cost especially for the lower income earner can be categorized in housing stress (Yates, Randolph & Holloway, 2006). Household debt service in Malaysia is a hot topic and worrying nowadays as it is affecting the young adults (Osman, Madzlan & Ing, 2018). Thus, it doubles the problems for the young adults when it comes to bill payments. It also can lead to poverty when most of the earnings are spent for living. Mimura (2008) conducted a study which investigated the poverty between housing cost burden and economic hardship. The findings showed that the poverty status was not due to a housing cost burden instead of economic hardship. This explain, in the study, economic hardship among the groups (White, Black & Hispanic) examined were different.

Little happen to be reported regarding the housing cost stress has significant relationship towards health problems. Jackson (2003) mentioned that housing is recognized as one of the main issues that influence human health. Nobari, Whaley, Blumenberg, Prelip and Wang (2019) in their study, reported that there was an association between housing cost burden and health. Children who lived in severe housing-cost burden have high chances to early childhood obesity and the size of the household was the moderator. When a person finds difficulty in settling house debt, he is experiencing housing stress. Housing stress can be defined as a situation where the household signify the negative effects when they have scarce income to assure sufficient housing cost (NAHP, 2004). Consequently, physical and emotional housing stress correlates to poor physical and mental health.

Gender

Increases in cost of living give effect to individual level of stress (Ng, Yeung & Gao, 2019; Maceda, 2017). The stress responses among gender differences have become an essential issue which associated with various stressful life events. Previous studies have found significant association between stress and gender (Handa & Chung, 2019). Gentry, Chung, Aung, Keller, Heinrich and Maddock (2007) found that there is no difference between health and social stress among genders. However, their study indicated that men have more stress from personal factors such as challenges or conflicts at workplace. The result may due to long period of time in paid employment among men (Victor, Bilodeau, Demers, Marchand, Beauregard, Durand & Blanc, 2019). In contradict, Buckland, Pozehl and Yates (2019) found that females experienced more

depression than men. Females with less education and no employment were related to high stress (Chang, Tan & Schaffir, 2019).

With regards to health, World Heart Federation (2013) has reported that more females die of coronary heart disease than men in the US. Reasons being, female are more likely to have lack of physical fitness, hypertension and obesity. The World Heart Federation (2013) also mentioned that female with obesity may increase by 64% of its risk to have heart disease, but only 46% in men. In addition, female who suffer heart disease at a younger age (less than 50 years old) have double risk to die as compared to men. It is also stated that the risk is higher for female; where 42% female with heart attack die within a year, but by only 24% in men.

Females have more responsibilities and higher sense of belonging to the family. They are willing to sacrifice for their loved ones. At the same time, they are accumulating the stress in themselves due to internal and external factors that they have to face including financial issue (Ng, Yeung & Gao, 2019; Maceda, 2017). As a result, they tend to care less of their own health. It is found that, females with coronary heart disease tend to have less effective medical treatment, less education program enrolment and less prescription of diet (Chong-Nguyen, et al., 2019). It is assumed that, females experience more stress on the effect of insufficient financial resources (due to high cost of living) on health.

Smoking Habit

All tobacco products contain nicotine which have high addictive psychoactive ingredient. For smoking purposes, the dried leaves of tobacco are used in cigarettes, *bidis*, water pipe and cigar (Muhammad Zubair, 2019).

Smoking affects lungs and body immunity (Muhammad Zubair, 2019). Every year, tobacco kills more than 7 million people globally. More than 6 million of those deaths are caused by the direct tobacco use. The effect of being around people who are smoke is really bad. Around 890,000 deaths are the result of non-smokers being exposed to secondhand smoke. The statistical shows that 80% of the world's 1.1 billion smokers are from low and middle income countries (World Health Organization, 2018). Smoking is identified as the important risk factor for heart disease (Wang et al., 2019; Kelishadi, Sadry, Zadegan, Hashemipour, Sabet, Bashardoust, Ansari & Alikhassy, 2004).

There are various reasons that influence people to smoke. Preference for smoking among individuals whose parents (Kelishadi et al., 2004) and friends (Muhammad Zubair, 2019) are smoker were significantly more than other factors. Besides ages, number of smokers in the family and education level are considered as the contributing factors for an individual to take up smoking (Kelishadi et al., 2004). With regards to gender, the smoking habit is more dominant among males (Granja et al., 2019). Poor marital status and alcohol consumption also influence the smoking habits (Wang et al., 2019).

Individuals with high level of stress are more likely to smoke and difficult to quit (Bergman et al., 2019; Wang, et al., 2019). Stress resulting from work or studies is the determinants of smoking uptake (Wang et al., 2019). Besides, low socioeconomic status residents often face depression with the increases in cost of living. Unfavourable living conditions may increase their level of stress (Ng, Yeung & Gao, 2019) and they are more likely to smoke (Hiscock, Bauld, Amos, Fidler & Munafo, 2012). Those who smoke will feel that their emotions are under control or protect themselves from undesirable emotions including stress (Johnson et al., 2003). In turn, it develops a higher risk of heart disease (Wang et al., 2019).

Smoking habit is not only contributing to bad health, but the cost for buying cigarettes adding more expenses to an individual's cost of living (Hiscock et al. 2012). Thus, the habit will worsen the effect of increase in cost of living towards individual's health.

Potential Contributions and Conclusion

This study extends the coronary heart disease research. Prior studies have focused on the impact of education, cost of medication, physical activity, diabetes, cholesterol and hypertension on coronary heart disease (Moran, et al., 2019). However, there is still limited study on financial distress particularly on cost of living that associates with high cost of food and housing and its effect on the disease. A better understanding on how the cost of living and unhealthy lifestyle (smoking habits) contribute to coronary

heart disease risks may provide input to the regulators in determining the minimum wage level and giving awareness on public health and financial management.

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