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DO INDIVIDUAL CHARACTERISTICS AND FINANCIAL BURDEN CONTRIBUTE TO HEALTH PROBLEMS? EVIDENCE FROM MALAYSIA

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ABSTRACT

The rise in the cost of living is the leading cause of stress. Therefore, it is essential to investigate the impact of financial burdens on health. However, to date, limited studies have examined the relationship between financial burden and cardiovascular disease risk factors, the leading cause of death in the world, including Malaysia. Hence, this study examined the determinants of coronary heart disease (CHD). The study administered a questionnaire on CHD patients in Selangor, the most populated State in Malaysia. A total of 300 valid responses were obtained and analysed using multiple regression analysis. The

results showed that accommodation cost, salary, smoking habit, age, residential area, marital status and education level are associated with CHD. Nevertheless, the study did not find support for the relationship between education expenses and employment status on CHD. Based on the results, this study recommends that the government and housing developers increase housing affordability, particularly for low- and middle-income earners. Besides, everyone should enjoy a high quality of life regardless of job type or salary. Health awareness, particularly CHD risk, should be promoted regularly in all communication media to target a wider group, particularly the elderly.

Keywords: Age, coronary heart disease, accommodation cost, salary, education expenses

INTRODUCTION

Coronary heart disease (CHD) is a common cause of death. This disease is caused by the malfunction of the heart that prevents it from receiving oxygen, whereby the blood flow is blocked from reaching the heart muscles (Gander, Hazlett, Cai, Hebert & Blair, 2014). According to the World Health Organisation (2017), an estimated 17.9 million people died of cardiovascular disease in 2016, correlating to 31% of deaths worldwide. Malaysia is no exception; the country records a large number of patients suffering from CHD (Loh, 2019). In 2020, the number of deaths due to CHD stood at 16,325 people or 15% of total deaths (Department of Statistics Malaysia, 2020). This figure has alarmed the government, forcing them to find solutions to counter these deaths and prevent this disease from growing among Malaysians.

A survey conducted by YouGov and Bayt.com found that 66% of UAE residents stated that an increased cost of living had affected their lives significantly (Maceda, 2017). A Malaysian study found that the majority of the T20[1] income group with incomes above RM8,319 (USD2,377) expressed anxiety about the rising cost of living despite

[1] The definitions of T20, M40, and B40 are based on the Department of Statistics Malaysia (DOSM, 2014). The T20 (top 20%) income group is the household that has an income above RM8,319 (USD2,377), the income of M40 (middle 40%) group ranges between RM3,856 (USD1,102) and RM8,318 (USD2,376) and B40 (bottom 40%) income groups are households earning monthly incomes below RM3,855 (USD1,101).

their lucrative income. The perception of the rising cost of living by the M40 and B40 income groups also showed the same trend (Che Sulaiman, Sanusi & Muhamad, 2020). The pressure on the rising cost of living would be more glaring among the low- and middle-income earners. The rise in average food prices and housing costs leads lower-income earners to greater financial burdens. According to the World Bank (2020), young workers in Malaysia are facing stagnant growth in employment income even though education qualifications are rising. Most households do not have sufficient financial savings, and financial pressures are felt by most working adults regardless of their age group and location. Therefore, they tend to use debt as a substitute for income to finance growing consumption.

Moran, Ommerborn, Blackshear, Sims, and Clark (2019) found that those with moderate to high financial burdens tend to have a higher risk of CHD. Individuals with moderate financial burdens are twice more likely to get CHD, while those with high financial stress are three times more likely to get CHD. This result proves that financial burden or financial stress might lead to adverse physical health, as demonstrated by previous research.

Smoking habits contribute to bad health and buying cigarettes also adds to the cost of living (Hiscock et al., 2012). Furthermore, smoking is an important risk factor for heart disease (Wang et al., 2019). This habit will worsen the increased cost of living on health. Previous studies emphasised the influence of education loans on stress levels (Rachel, 2017) and financial burden (Williams, 2016). However, little knowledge is available on the association of financial burden, particularly the accommodation cost and education expenses with CHD (Davey et al., 2022; Safford, 2021). Hence, this study examines the association of individual characteristics (smoking habit, age, residential area, marital status, education level, employment status) and financial burden (accommodation cost, salary, education expenses) with CHD.

LITERATURE REVIEW

Coronary Heart Disease

Individuals with CHD are more likely to experience chest pain, shortness of breath, pain or coldness in the legs or arms, and chest

tightness (Rahman, Akter, Zohora & Shibly, 2019; Yang, Wang, Wang & Gong, 2019; and Hertz et al., 2019). These individuals easily feel tired from exercising or engaging in any activity. Other symptoms of CHD include swollen legs, ankles, and feet, as well as feeling weak (Vijayashree & Parveen Sultana, 2020). Researchers have thoroughly investigated the risk factors that lead to CHD, showing that the factors consist of modifiable and non-modifiable risk factors. According to Gander et al. (2014), the modifiable risk factors that lead to arterial damage are hypertension, hypercholesterolemia, diabetes, and smoking. Meanwhile, the non-modifiable risk factors of CHD are age, sex, and a personal or family history of CHD (Assmann, Cullen, Jasa, Lewis & Mancini, 1999).

Adults are shouldered with many financial burdens or financial stress. Very few studies have investigated the relationship between financial burden and CHD. Numerous CHD cases due to modifiable and non-modifiable risk factors have been reported, but not many have linked CHD to financial stress due to the high cost of living. Therefore, it is not clear whether financial burden or financial stress is a factor that leads to CHD. Cohen, Janicki, and Miller (2007) reported stress as being associated with CHD; it triggers the pathogenic process and inflammatory and coagulatory mechanisms. Thus, stress can trigger arterial damage. A lower income and a lack of health insurance are significant causes of financial stress and result in poor or worsening health (Ross, Bradley & Busch, 2006).

Accommodation Cost

Maslow's Hierarchy of Needs explains that every human being needs a good quality of life. This model also cites physiological need (i.e., shelter) as a basic need (Martin & Joomis, 2007). A house is a shelter that keeps human beings safe from harm. However, it is not easy to own property in this era, as Malaysia's housing prices increase yearly (Zamri, 2019). Besides, most households in Malaysia have low- or middle-income, which makes it even more difficult for them to own any property (Surendran, 2018). Because of their low income, some adults have to rent a house instead of buying it. Low-income earners are now burdened by the cost of rent (Goodman & Ganesh, 2017). Hence, accommodation cost is a significant financial burden among adults (Rowley, Ong & Haffner, 2015) that causes them financial stress.

Vidyattama, Tanton, and Nepal (2013) noted that housing-related financial stress is associated with income and accommodation costs, namely mortgage repayments and rents. A lower-income earner usually spends 30% cent of his income on accommodation costs, leading to a term called 'housing stress' (Yates, 2007). Household debt service in Malaysia is becoming more worrying. This problem affects young adults (Osman, Madzlan & Ing, 2018), doubling their bill payment problems. It could also lead to poverty because most of a person's earnings to survive day-to-day life.

Not much has been reported on accommodation cost stress and health problems. Rodgers et al. (2019) and Bills, West, and Hargrove (2019) recognised accommodation cost burden as one of the main issues affecting human health. When a person feels the difficulty of settling a housing debt, he or she experiences housing stress. Housing stress can be defined as a situation where the household is negatively affected because of their limited income, which hinders them from covering housing costs (NAHP, 2004). Consequently, physical and emotional housing stress leads to poor physical and mental health (Rodgers et al., 2019).

Salary

Salary often leads to financial stress, especially when a person is incapable of fulfilling his or her financial well-being. Financial stress affects not only the low-income group in Malaysia but also all income levels (Osman, Madzlan & Ing, 2018). According to Akram (2012), salary is an essential financial aspect that supports a family's livelihood. Usman, Akbar, and Ramzan (2013) reported salary as a significant determinant of job satisfaction, but stress had no significant effect. This result indicates that salary is a primary determinant of human well-being. A low salary might reflect poor life management and subsequently cause financial burden.

Few studies have explored the link between salary (or income) and health problems, specifically cardiovascular disease. Elfassy et al. (2019) found that people who experienced a drop in income tended to have double the risk of contracting heart problems and early death. This situation contradicts the results of those with increased salaries or stable incomes. On top of that, researchers have also reported that

respondents who were subjected to income reduction had a bigger chance of having a heart attack, stroke, or heart failure. Also, those who earned a low salary had a higher risk of disease and injury rather than high salary earners (Leigh & De Vogli, 2016). Monteiro, Mura, Conde and Popkin (2004) conducted a study on low- and middle-income countries and found that countries earning below $2500 per capita gross domestic product (GDP) were likely to exhibit higher rates of obesity and vice versa. Rehkopf et al. (2018) found contrasting findings in their cross-sectional study. They examined whether or not people who received a higher income tended to have a higher risk of contracting cardiovascular disease. Their results showed that the respondents did not show any risk of getting cardiovascular disease.

Franks, Winters, Tancredi and Fiscella (2011) used the Framingham risk score and confirmed that people with low socioeconomic status (SES) tended to have an increased risk of CHD. Meanwhile, Cottini (2011) suggested that low pay could lead to health issues at the workplace, especially for men. A study on a group of Americans found that those with low incomes likely had higher heart disease rates and chronic diseases than those with a stable income (Woolf et al., 2015). One study suggested increasing workers' wages to improve their health (Leigh & De Vogli, 2016). In so doing, the workers would have reduced stress-related anxiety and depression. Moreover, as for health benefits, higher wages have been linked to improved workers' attendance and productivity.

Individuals may experience financial stress for various reasons, including having to bear the cost of education. The rising cost of higher education has received considerable attention recently (Hemelt & Marcotte, 2011). In Malaysia, people who rely heavily on the study loans provided by the National Higher Education Fund Corporation (PTPTN) are also affected by financial distress (Wong, Ahmad & Kamisah, 2015). The PTPTN is a Malaysian authority responsible for issuing study loans to students pursuing tertiary education. Although the number of PTPTN borrowers has increased, the loan repayments from graduates are much lower than expected (Wong et al., 2015). This begs the question of whether or not graduates can pay their education loans. This scenario could also stem from the uncertain economic situation nowadays. An HSBC survey revealed an 83% working rate among university students globally. Nine out of ten students work while studying in Malaysia because they need additional money to

pay fees and living costs (HSBC, 2018). Graduates with debts have become a serious issue, with many facing difficulties repaying their education loans and other debts they have accumulated since entering the job market (Zainal & Ismail, 2012).

Financial distress such as mental or physical discomposure occurs when an individual cannot handle economic resources such as generating income or settling debt repayments or bill payments. A survey conducted by Muslim Volunteer Malaysia (MVM), a student group, indicates that ninety-six per cent of the respondents viewed the economic situation as a burden. Most of them also said that their money was spent paying education fees, especially those studying in private universities, while the balance was spread thinly (Williams, 2016). A survey of 1,500 undergraduates at Universiti Putra Malaysia revealed that many students perceived education loans as a burden. Besides, a significant proportion of the students had a negative attitude towards loan repayment (Abu Bakar, Masud, & Md Jusoh, 2006). Financial distress may influence an individual's many aspects of life, such as saving attitude, health condition, emotion, productivity level at the workplace, retirement planning, and family (McCarthy, 2011). Sky-high tuition fees and the rising cost of living are among the factors that influence individual stress levels and also lead to health problems (Rachell, 2017).

Age

Age refers to lifespan. The risk of heart disease increases with increasing age. Most heart disease cases can be seen in those aged 60 years and above (Kamel Abd**,** Naser Abd, & Raman, 2019). One possible factor is that ageing people tend to exercise less daily (Sun et al., 2019). Light physical activity is a key factor in reducing CHD risk in older individuals (LaCroix et al., 2019). Less physical activity and increases in age will lead to a higher risk of being overweight and obese. Individuals with obesity have a high risk of contracting hypertension, diabetes, stroke, cancer, and cardiovascular diseases (Wenger, 2014).

Smoking

All tobacco products contain nicotine, which is a highly addictive psychoactive ingredient. The dried leaves of tobacco are used in

cigarettes, *bidis*, water pipes, and cigars (Muhammad Zubair, 2019). Smoking affects the lungs and the body's immunity (Muhammad Zubair, 2019). Every year, tobacco kills more than seven million people globally, of which more than 6 million are caused by direct tobacco use. People who smoke have a really bad effect on their surroundings. Around 890,000 deaths are non-smokers that have been exposed to second-hand smoke. The statistics show that 80% of the world's 1.1 billion smokers are from low- and middle-income countries (World Health Organisation, 2018).

Stress resulting from work or studies determines smoking uptake (Wang et al., 2019). Individuals experiencing high stress levels are more likely to smoke and find quitting difficult (Bergman et al., 2019; Wang et al., 2019). Besides, residents with a low socioeconomic status often face depression because of the increased cost of living. Unfavourable living conditions may also increase stress levels (Ng, Yeung & Gao, 2019), forcing this group to smoke (Hiscock, Bauld, Amos, Fidler & Munafo, 2012). Those who smoke will feel as if their emotions are under control. They also smoke to protect themselves from undesirable emotions, including stress. In turn, this group will have a higher risk of heart disease (Safford et al., 2021; Wang et al., 2019).

Control Variables

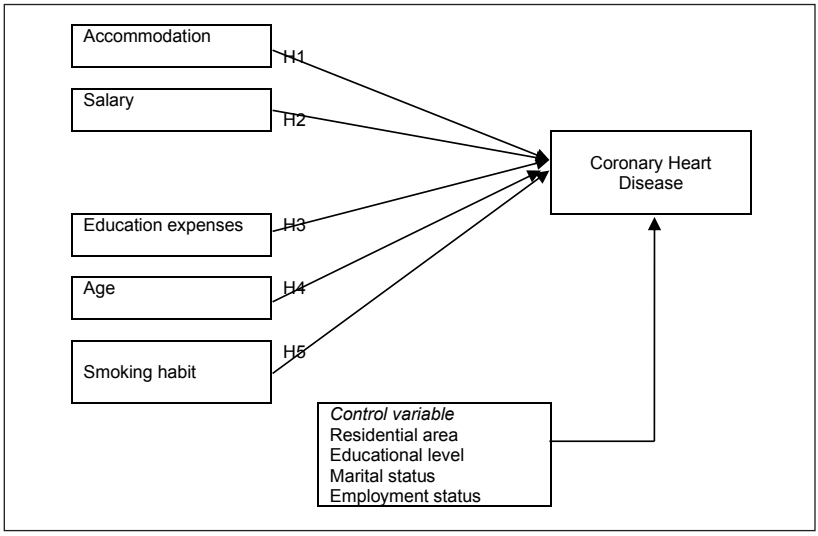
Regarding the control variables, prior literature, for example, Gupta, Prakash, Gupta & Gupta (1997), suggests that residential area, educational level, marital status and employment status influence CHD. Gupta et al. (1997) suggest that rural area populations are more likely to be correlated with CHD prevalence. CHD cases are significantly greater among uneducated persons (Davey, 2021). Low-income earners have been associated with worse CHD outcomes as those patients are unable to cover their medical expenses (Safford et al., 2021).

Research Framework

The research framework of this study is as follows.

Figure 1

Determinants of Coronary Heart Disease



METHODOLOGY

Sample Size and Data Collection

The main objective of this study was to examine the association of financial burden (accommodation cost, education expenses, salary) and individual characteristics (age and smoking habit) with coronary heart disease (CHD). This study employed a cross-sectional method with purposive sampling involving 307 CHD patients in Selangor, Malaysia (Hejazi, Rajikan & Choong, 2015).

This research distributed the self-administered questionnaires to CHD patients in Selangor. Selangor is located on the South-West Coast of Peninsular Malaysia. The population of Selangor was estimated at more than 9.5 million in 2019. According to the Department of Statistics Malaysia (2020), Selangor has been recorded as the state with the highest number of CHD cases at 16,325. The researcher approached the respondents from nine different districts in Selangor, namely Gombak, Hulu Langat, Hulu Selangor, Klang, Kuala Langat, Kuala Selangor, Petaling, Sepang, and Sabak Bernam, to ensure that

each district represents the sample population. This step made it easy to collect the data using disproportionate stratified sampling. The patients with CHD are being approached during their visits to the government hospital.

Sekaran (2003) suggests that the number of respondents required for regression analysis is ten times the number of variables. For this study, there are ten variables. Thus, at least 100 (10 x 10) subjects are needed. After four (4) months of data collection, the total returned questionnaire was 307. Out of these, seven questionnaires were incomplete, leaving only 300 usable questionnaires. The 300 samples for this study are sufficient for analysis as proposed by Sekaran (2003).

Questionnaire Design and Measurements

The questionnaire was divided into two sections. The first section consists of respondents' demographic profiles, including their individual characteristics (age and smoking habit). Meanwhile, the second section consists of questions on CHD, accommodation costs and education expenses.

Demographic Profile

The questionnaire requires the respondents to provide their demographic profile pertinent to the present study, including salary, age, smoking habit, residential area, marital status, education level and employment status. Salary was measured using three categories; RM3,000 and below; RM3001 to RM7,000; and RM7,001 and above. Meanwhile, age was measured using the mean age of the respondents. Residential area was categorised into rural and urban (Yong & Mahadir Naidu, 2012). The marital status was categorised into married and unmarried (Cheah, Lim & Mohd Yusoff, 2021). Meanwhile, education level was categorised into primary, secondary and tertiary (Cheah, Lim & Mohd Yusoff, 2021; Yong & Mahadir Naidu, 2012). Concerning employment status, it was categorised into government, private, self-employed, unemployed, and pensioner. The categorisation of the demographic information was kept straightforward.

Coronary Heart Disease

For CHD, five statements were designed and adapted from Rahman, Akter, Zohora, and Shibly (2019), Yang, Wang, Wang, and Gong

(2019), and Hertz et al. (2019). These statements include, "I sometimes feel chest pain/discomfort," "I sometimes feel shortness of breath," I sometimes feel pain in my arms," "I sometimes feel chest tightness," and "I have acute coronary heart disease". The statements were measured using a Likert scale ranging from Strongly disagree (1) to Strongly agree (5). Higher scores indicate more severe CHD conditions.

Accommodation Cost

Four statements were adapted from Rowley, Ong, and Haffner (2015) to represent accommodation costs. These statements include, "I have difficulties in paying my accommodation cost," "I have difficulties paying the expenses (instalment, taxes, insurance, maintenance) related to my house," "I spend most of my salary on housing," and "I feel stressed because of my accommodation cost". The statements were measured using a Likert scale ranging from Very poor (1) to Outstanding (5). Higher scores indicate a higher level of difficulty in paying accommodation expenses.

Education Expenses

Regarding education expenses, four statements were adapted from Zainal and Ismail (2012). The statements are "I feel burdened because of having to pay the education expenses," "I have difficulties paying the education expenses every month," "I cannot afford to pay the education expenses every month," and "It is very hard for me to exclude some portion of my salary to pay the education expenses".

Assessment of Reliability, Normality and Collinearity Diagnostics Test

Cronbach's alpha coefficient was used to assess the reliability of the questionnaire. The results, shown in Table 1, indicate that all items in the questionnaire had a Cronbach's alpha coefficient of more than 0.70. Hair, Black, Babin, and Anderson (2010) stated that Cronbach's alpha coefficient above 0.70 is acceptable, while a value above 0.8 is considered good. The results indicate that the questionnaire was reliable at measuring the targeted variables for this study.

Table 1

Reliability Test Analysis

Construct	Cronbach's Alpha	Number of Items	Number of Cases Deleted
Coronary heart disease	0.810	5	-
Accommodation cost	0.922	4	-
Education expenses	0.949	4	-

Further, the assessment of normality of the metric variables in this study involves empirical measures of a distribution's shape characteristics (skewness and kurtosis). Table 2 shows that the normality assessment values for accommodation cost, salary, education expenses, age, smoking habit and coronary heart disease (CHD) are between ±2.00 as suggested by Hair et al. (2015). Therefore, this assessment confirmed that the data of this study is normally distributed.

Table 2

Normality Test

Construct	Skewness	Kurtosis
Coronary heart disease	-0.916	1.961
Accommodation cost	-0.219	-0.809
Salary	-0.105	-0.635
Education expenses	0.548	-0.994
Age	-0.127	0.675
Smoking habit	0.912	-1.175
Residential area	-1.101	-0.426
Marital status	-1.864	1.485
Education level	0.351	-1.002
Employment status	0.311	-0.952

Next, a collinearity diagnostics test (tolerance and VIF values) was conducted to check for multicollinearity. The results from Table 3 show that the tolerance values are greater than 0.10, and the VIF values are lower than 10; hence, no multicollinearity problem exists (Pallant, 2016).

Table 3

Collinearity Diagnostics Results

Construct	Collinearity Statistics	
	Tolerance	VIF
Accommodation cost	0.889	1.125
Salary	0.918	1.090
Education expenses	0.890	1.123
Age	0758	1.320
Smoking habit	0.938	1.006
Residential area	0.921	1.086
Marital status	0.828	1.208
Education level	0.872	1.147
Employment status	0.839	1.191

FINDINGS

Respondents' Profiles

The profiles of the respondents are summarised in Table 4. In this study, Klang District represented the most number of respondents (98 respondents, 32.7%), followed by Petaling (42 respondents, 14%). In terms of gender, the majority of the respondents were male (181 respondents, 60.3%). Nearly 75% of the respondents were 46 years and above, and most were married. Regarding education, 127 respondents or 42.4% of the sample had tertiary education level. Most of the respondents (61%) earned RM3,000 and below. In terms of employment, majority of the respondents worked in the Private Sector. The data shows that 82 respondents (27%) were from the Private Sector, followed by 64 respondents (21.3%) that were self-employed.

The result also indicates that 64.3% of the respondents had family members with CHD, and 63% has had the disease for less than five years.

Table 4

Respondent Profile

Characteristic		Frequency	Percentage (%)
Locality	Gombak	38	12.7
	Hulu Langat	25	8.3
	Hulu Selangor	20	6.7
	Klang	98	32.7
	Kuala Langat	15	5.0
	Kuala Selangor	33	11.0
	Petaling	42	14.0
	Sepang	23	7.7
	Sabak Bernam	6	2.0
Residential area	Urban	201	67.0
	Rural	99	33.0
Gender	Male	181	60.3
	Female	119	39.7
Age	20 and below	1	0.30
	21–35	41	13.7
	36–45	34	11.3
	46–55	105	35.0
	56–65	88	29.4
	66 and above	31	10.3
Marital status	Married	248	82.7
	Unmarried	52	17.3
Education level	Primary	38	12.7
	Secondary	135	44.9
	Tertiary	127	42.4
Household income	RM3,000 and below	183	61.0
	RM3,001–RM7,000	101	33.7
	RM7,001 and above	16	5.3
Employment status	Government Sector	60	20.0
	Private Sector	82	27.3
	Self-employed	67	22.3
	Unemployed	53	17.7
	Pensioner	38	12.7
Do you have any family members with coronary heart disease?	Yes	193	64.3
	No	107	35.7

(continued)

Characteristic		Frequency	Percentage (%)
How long have you had heart disease?	Less than 5 years	189	63.0
	More than 5 years	111	37.0
Housing occupancy status	Owner	226	75.3
	Tenant	65	21.7
	Others	9	3.0
Do you have any education loan?	Yes	56	18.7
	No	244	81.3
Are you smoking?	Yes	88	29.3
	No	212	70.7

As shown in Table 5, the result indicates that the mean figure for coronary heart disease is 3.46. The mean value for accommodation cost is 2.8, ranging from 1.00 to 5.00. The mean value for salary and education expenses is 2.98 and 2.91, respectively. Regarding control variables, the mean marital status, education level and employment status are 0.820, 2.306 and 2.790, respectively.

Table 5

Descriptive Statistics

Variables	Mean	SD	Min	Max
Coronary heart disease	3.46	0.74	1.00	5.00
Accommodation cost	2.80	1.02	1.00	5.00
Salary	2.98	0.89	1.00	5.00
Education expenses	2.91	1.07	1.00	5.00
Age	51.92	14.25	17.00	97.00
Smoking	0.293	0.456	0.00	1.00
Residential area	0.7567	0.4298	0.00	1.00
Marital status	0.820	0.382	0.00	1.00
Education level	2.306	0.6837	1.00	3.00
Employment status	2.790	1.344	1.00	6.00

Multiple Regression Analysis

The research hypotheses were tested via multiple regression analysis. This step helps answer the main objective of the study. The reported measures of variation, R^2, indicate that 17.0% of the total variation in CHD can be explained by accommodation cost, salary, age, smoking

habit, residential area, marital status and education level. This low value indicates many other factors that contribute to CHD. The multiple regression result and significant coefficients are shown in Table 6.

Table 6

Regression Model Summary Statistics

Predictor	B	SE	t-statistics
Constant	2.107	0.322	6.542***
Accommodation cost	0.125	0.040	3.068***
Salary	0.151	0.046	3.277***
Education expenses	-0.056	0.042	-1.336
Age	0.012	0.003	3.655***
Smoking	0.164	0.089	1.841**
Residential area	-0.199	0.094	-2.110**
Marital status	0.125	0.073	1.724**
Education level	-0.030	0.017	-1.770**
Employment status	0.021	0.032	0.650
R-squared (R^2)	0.170		
Adjusted R-squared	0.144		
F-statistic	6.601		
Significance F	0.000		

***, **, * respectively indicate that the regression analysis is statistically significant at 1%, 5%, 10%

In Table 6, the result shows that the relationship between accommodation cost and CHD is positive (B = 0.114, t = 2.833, $p < 0.01$) and is statistically significant at a 1% level. Therefore, this finding leads to the acceptance of H_1. This signifies that when accommodation costs increase, CHD cases also increase. Further, as it can be observed from the results in Table 6, salary is positively related to CHD (B = 0.125, t = 2.833, $p < 0.01$), and it is significant at the 1% level. Therefore, H_2 is supported. This result indicates that high-income earners are exposed to high responsibilities and excessive stress, leading to a high risk of a heart attack.

With regards to age, the study finds a positive correlation between age and CHD (B = 0.015, t = 5.355, $p < 0.01$) at 1% significance level. Thus, H_3 is supported. It demonstrates that individuals of higher

age have more tendency to get CHD. Besides, the result shows a positive relationship between smoking habit and CHD ($B = 0.173$, $t = 1.980$, $p < 0.05$) at 5% significance, and it leads to the acceptance of H_5. It indicates that smokers have a higher risk of heart disease. Nevertheless, the result finds negative but insignificant relationship between education expenses and CHD ($B = -0.064$, $t = 1.512$, $p > 0.1$).

Meanwhile, the residential area and education level show negative relationship with CHD at 5% significance level. Regarding marital status, it indicates a positive association with CHD ($B = 0.125$, $t = 1.724$, $p < 0.05$). Nevertheless, employment status shows insignificant relationship with CHD ($B = 0.021$, $t = 0.651$, $p > 0.1$).

DISCUSSION AND CONCLUSION

This study aimed to determine the factors that influence CHD. The analysis of 300 CHD patients in Selangor generated interesting results. The results show that accommodation cost, salary, age, smoking habit, residential area, marital status and education level are associated with CHD. Nevertheless, education expenses and employment status did not influence CHD.

The current finding on accommodation cost is consistent with that of Rodgers et al. (2019), i.e., CHD is influenced by the burden of accommodation cost. Lower-income earners who spend a large portion of their income to pay for accommodation are more likely to consume unhealthy diets (Kirkpatrick & Tarasuk, 2011). This habit further impacts their health. Salary has been found to correlate with CHD positively, but Elfassy et al. (2019) and Leigh and De Vogli (2016) found the opposite. The reason may be that a high salary comes with high responsibilities. High-income earners are exposed to excessive work pressure and high expectations from various stakeholders, which, in turn, affect their health. Additionally, the result of this study showed that older people had a higher risk of getting CHD. As this group ages, their vascular elasticity reduces, blood viscosity increases, and the incidence of CHD increases, threatening their health (Wenger, 2014).

On the other hand, education expenses were not proven to affect CHD. One possible reason is that this loan is paid monthly, starting from

a small amount and increasing based on the agreement. Moreover, the education expenses are not as expensive as accommodation costs, so it is less burdensome. Rural residents have barriers to accessing high-quality health care and facilities compared to urbanites (Safford, 2021). It worsens the CHD outcomes. The result also indicates that low income and low education levels lead to a high risk of CHD due to severe stress in living under a cloud of money. In addition, married individuals are found to have more CHD prevalence than unmarried individuals. In essence, married individuals are likely to face more challenges with their spouses, children, finances, and employers. For instance, they need more money to provide good shelter, food, clothes, education and medical to their family members.

Based on the results and discussions above, this study recommends that the government introduce policies to lower accommodation costs. This step could lessen the CHD risk in the population. Furthermore, people with low income, disabilities, and unstable employment are the ones most in need of help from the government and the housing developers. Such help would alleviate their burden related to housing and health issues. Additionally, it is high time that all organisations implement flexible or reduced working hours. Long working hours have adversely affected workers' health (Wong, Chan & Ngan, 2019). This study shows the importance of having a good quality of life regardless of the type of job or salary. Health awareness, particularly CHD risk, should be disseminated regularly via every available communication media to target a wider group, especially the elderly.

As the cost of living keeps increasing faster than income growth, the health problem driven by financial burden is expected to be a significant issue in society. Financial burden, particularly the accommodation cost, does associate with individual health. Salary and individual age also contribute to health issues. Therefore, government, businesses and employers have essential roles in ensuring that all citizens/ employees are getting paid commensurate with their contributions.

There are several limitations to this study. Numerous other factors may influence CHD. For future research, a clinical diagnostic test should be conducted to diagnose CHD**.** Besides, researchers might increase the number of samples by using cluster sampling, including other states. In addition, other factors represent financial burdens such as medical costs, transportation costs, food and personal expenses that

could be investigated for future research. More moderating variables may also be included, for instance, categories of smokers, housing occupancy status and alcohol drinkers/non-drinkers to enhance the body of knowledge in CHD studies.

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