UNIVERSITI PUTRA MALAYSIA

KNOWLEDGE AND ATTITUDE OF HYPERTENSION AMONG ADULT COMMUNITY IN SELANGOR: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Hypertension is becoming a global epidemic and threat to the world population. The key finding from NHMS (2019), found that in Malaysia, 3.4 million people were living with two major risk factors (diabetes and high cholesterol) for hypertension. People's knowledge and attitude (KA) about hypertension are the cornerstone of hypertension control and/or prevention. Thus, the aim of this cross-sectional study is to assess the level of Knowledge and attitude (KA) of hypertension among adult community in Selangor, Malaysia. ***Objective:*** To investigate the association of knowledge and attitude of hypertension among the adult community in Selangor. ***Methods:*** This study's design is a cross-sectional study. A convenient sampling method will be used to recruit the adult respondent and data were collected online using Google Form. SPSS version 22 will be used for data entry and analysis. Determining knowledge and attitude towards Hypertension will be analysed using appropriate statistical procedure depending on the study objectives. Descriptive analysis and inferential analysis are used to analyze the data's nature. ***Results:*** A total of 224 respondents had participated in the study. The findings in this study showed that the mean ± SD for a total score of knowledge about Hypertension is 9.74 ± 2.45 while the mean ± SD for a total score of attitudes towards hypertension is 4.19 ± .89. There were significant positive correlations between knowledge and attitude on hypertension (R^2=.126; p<0.001). There were significant fair positive correlations between age (B=.03; p=.041) and family history of hypertension B=1.45; p<0.001) with knowledge attitude regarding hypertension. Meanwhile, gender, educational level and employment status had no significant association with knowledge and attitude regarding hypertension. ***Conclusion:*** This study found an acceptable level of KA regarding hypertension among the study respondents. There were also significant positive correlations between knowledge with attitude and practice regarding hypertension, which means that better knowledge will improve the attitude of the respondents.

Keywords: Hypertension, Knowledge, Attitudes, Adult community, Health Promotion, Lifestyle

PENGETAHUAN DAN SIKAP HIPERTENSI DI KALANGAN MASYARAKAT DEWASA DI SELANGOR: KAJIAN SILANG BAHAGIAN

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ABSTRAK

Latar belakang: Hipertensi menjadi wabak global dan ancaman kepada penduduk dunia. Penemuan utama daripada NHMS (2019), mendapati bahawa di Malaysia, 3.4 juta orang hidup dengan dua faktor risiko utama (diabetes dan kolesterol tinggi) untuk tekanan darah tinggi. Pengetahuan dan sikap orang ramai (KA) mengenai tekanan darah tinggi adalah asas kawalan tekanan darah tinggi dan/atau pencegahan. Oleh itu, matlamat kajian rentas bahagian ini adalah untuk menilai tahap pengetahuan dan sikap (KA) hipertensi di kalangan masyarakat dewasa di Selangor, Malaysia. ***Objektif:*** Menyiasat persatuan pengetahuan dan sikap hipertensi di kalangan masyarakat dewasa di Selangor. ***Kaedah:*** Reka bentuk kajian ini adalah kajian rentas bahagian. Kaedah pensampelan yang mudah akan digunakan untuk merekrut responden dewasa dan data dikumpulkan dalam talian menggunakan *Google Form*. SPSS versi 22 akan digunakan untuk kemasukan data dan analisis. Menentukan pengetahuan dan sikap terhadap Hipertensi akan dianalisis menggunakan prosedur statistik yang sesuai bergantung kepada objektif kajian. Analisis deskriptif dan analisis inferens digunakan untuk menganalisis sifat data. ***Keputusan:*** Seramai 224 orang responden telah mengambil bahagian dalam kajian ini. Penemuan dalam kajian ini menunjukkan bahawa min ± SD untuk skor keseluruhan pengetahuan mengenai Hipertensi adalah 9.74 ± 2.45 manakala min ± SD untuk jumlah skor sikap terhadap tekanan darah tinggi adalah 4.19 ± .89. Terdapat korelasi positif yang ketara antara pengetahuan dan sikap mengenai tekanan darah tinggi (R^2=.126; p<0.001). Terdapat korelasi positif yang ketara antara umur (B=.03; p=.041) dan sejarah keluarga hipertensi B=1.45; p<0.001) dengan sikap pengetahuan mengenai tekanan darah tinggi. Sementara itu, jantina, tahap pendidikan dan status pekerjaan tidak mempunyai kaitan yang signifikan dengan pengetahuan dan sikap mengenai tekanan darah tinggi. ***Kesimpulan:*** Kajian ini mendapati tahap KA yang boleh diterima mengenai tekanan darah tinggi di kalangan responden kajian. Terdapat juga korelasi positif yang signifikan antara pengetahuan dengan sikap dan amalan mengenai tekanan darah tinggi, yang bermaksud bahawa pengetahuan yang lebih baik akan meningkatkan sikap responden.

Kata kunci: Hipertensi, Pengetahuan, Sikap, Komuniti Dewasa, Promosi Kesihatan, Gaya Hidup

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DECLARATION BY STUDENT

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LIST OF ABBREVIATIONS

BP : Blood pressure

HPT : Hypertension

H_o : Null hypothesis

JKEUPM : Jawatankuasa Etika Untuk Penyelidikan Melibatkan Manusia

NHMS : National Health & Morbidity Survey

PhD : Doctor of Philosophy

UPM : Universiti Putra Malaysia

WHO : World Health Organisation

CHAPTER 1

INTRODUCTION

1.0 Background Of The Study

An estimated 1.13 billion people worldwide suffer from hypertension, most of whom live in low- and middle-income countries (WHO, 2019) In health conditions such as brain and kidney injury, hypertension can cause considerable complexity and also cause cardiovascular disease, which can be fatal (Akshaya et al, 2020). According to Gong et al., (2020) hypertensive individuals are at greater risk of disability and earlier death on a population-based basis than people with regular blood pressure. Hence the reinforcement on the importance of having regular blood pressure monitoring is very essential. In line with modernization and a growing economy, many innovations are made to ease blood pressure monitoring, as the existence of new blood monitoring devices is compatible and friendly user. Therefore, this device will directly help people self-monitor their blood pressure. With self-monitoring, people can have an early picture of their risk for cardiovascular disease. (Moon et al., 2020).

The key finding from NHMS (2019), found that in Malaysia, 3.4 million people were living with two major risk factors (diabetes and high cholesterol) for hypertension. Given the above, Health workers and mass media, including TV/radio, should play a role in proving information as they are the primary credible source of hypertension data. Promoting awareness about hypertension in the primary healthcare setting in society will promote individual understanding and dedication to a healthy lifestyle. It is also supported by A H Mohammed et al., (2020), healthcare worker should also educate patient regularly about the

nature of the disease and possible complication if HPT is left untreated, as most patients fail to follow doctor's instructions are associate with a lack of knowledge about their disease.

In addition, most patients are lacking of motivation to change their lifestyle is one of the negative attitudes toward hypertension. Even though it is clear that risk factors of hypertension include overweight, lack of physical activity, excessive alcohol intake, smoking, and poor diet that can be avoided by practicing a good lifestyle (Farshidi et al., 2018). Although improved knowledge is vital to the occurrence of behaviour change, knowledge alone does not change behaviour. The person must understand why a change is required, and the reasons must make sense from his/her point of view (not only from the point of view of the health planner or health worker) (Ohara, 2010).

1.2 Problem Statement

Untreated hypertension can lead to serious consequences such as heart attacks, stroke, and other cardiovascular diseases (NHMS, 2019). Also, the same survey concludes that 3 in 10 or 6.4 million people in Malaysia have hypertension, only half of it is aware that they have a blood pressure problem, among these 90% are on medication but only 45% have their blood pressure controlled. A previous report by the Ministry of Health Malaysia (2018) stated that the overall prevalence of hypertension in Selangor in 2015 was 25.5%.

According to a study by Paczkowska et al., (2021) found that the ideal blood pressure (BP) range was not recognized for most respondents (79 %). Elderly respondent has poor knowledge as they are unaware of hypertension symptoms, which affect their attitude toward managing hypertension as they are reluctant to make lifestyle changes, and some were poorly aware of hypertension therapy in the absence of symptoms. This reflects their poor knowledge about hypertension. The same author also concludes that education and awareness on hypertension should be done by the authorities especially among elderly patients and low educational people in the rural area.

The study done by Kurnia et al., (2020) stated that the negative attitude toward hypertension such as poor diet and lack of physical activity is influenced by several factors such as the lack of source of the information obtained by the respondent in the mass media and health education sector. This is also supported by research Afrida et al., (2019) mentioned that the attitudes of respondents may be affected by health education if respondents have clear, basic, and easy-to-understand details. The more often health information is

provided, the easier it is to affect their attitude toward the treatment of hypertension.

Therefore, the current study highlights the need to pay more attention to educate people in Malaysia to improve their knowledge and attitude about hypertension, also to minimize the prevalent risk of hypertension, and enhancing their awareness and adherence to treatments.

1.3 Significant Of Study

This study's purpose is also to helps nurses identify the level of knowledge and attitude of hypertension among the adult community in Selangor. Therefore, it can be a key solution to reach out to the public to enforce treatment guidelines. If the result is poor, a program or campaign needs to be conducted to increase the community's knowledge and attitude regarding hypertension.

1.4 Research Questions

1. What is the level of knowledge and attitude of hypertension among the adult community in Selangor?
2. What is the association between level of knowledge and attitude of hypertension among the adult community in Selangor?

1.5 Research Objectives and Hypotheses

1.5.1 General Objective

To investigate the association of knowledge and attitude of hypertension among the adult community in Selangor.

1.5.2 Specific Objectives

a. To determine the level of knowledge and attitude on hypertension among adult community in Selangor
b. To determine the association between the level of knowledge and attitude on hypertension among the adult respondents in Selangor
c. To determine the association between socio-demographic data and the level of knowledge of hypertension among adult community in Selangor.
d. To determine the association between socio demographic data and attitude of hypertension among adult community in Selangor.

1.6 Hypothesis

H_o = Null Hypothesis

H_{o1} = There is no significant association between the level of knowledge and attitude about hypertension among the adult community in Selangor.

H_{o2} = There is no significant association between socio-demographic factors and the level of knowledge and attitude on hypertension among the adult respondents in Selangor

H_a = Alternative Hypothesis

H_{a1} = There is a significant association between the level of knowledge and attitude about hypertension among the adult community in Selangor.

H_{a2} = There is a significant association between socio-demographic factors and the level of knowledge and attitude on hypertension among the adult respondents in Selangor

1.7 Operational Definition

1.7.1 Hypertension

Hypertension is the term used to describe elevated blood pressure. Hypertension is a major risk factor for, stroke, heart failure, heart attack, and many other cardiovascular diseases. According to Malaysia Clinical Practice Guidelines (2018), on the management of hypertension, hypertension is defined as a persistent elevation of systolic BP of 140mmHg or greater and/or diastolic BP of 90 mmHg or greater.

1.7.2 Knowledge on Hypertension

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject. This study will assess the knowledge of hypertension among the adult community in Selangor by using an instrument of hypertension knowledge scale. The level of knowledge on hypertension among respondent is measure by the value between 0-4 (poor knowledge), 5-9 (fair knowledge) and 10-13 (good knowledge).

1.7.3 Attitude on Hypertension

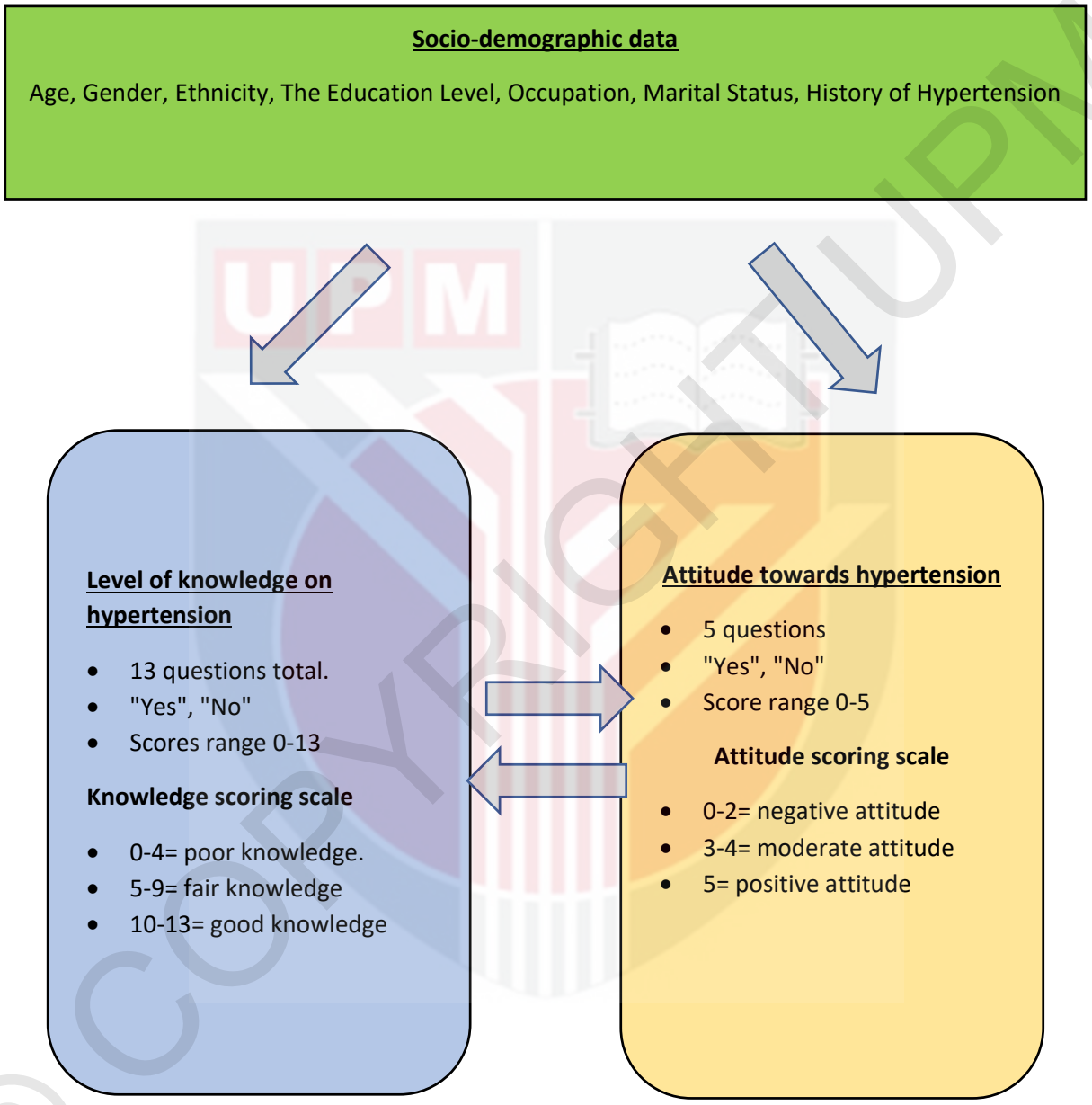
Attitude is an action of the adult respondent taken from Sepang, Petaling, and Hulu Langat towards hypertension. This section are defined by determining the attitude of the respondent towards hypertension through 5 questionnaires with the answer choice were ‘yes’ and ‘no’. The scoring method is calculated by giving a score of one for the correct answer and zero for the incorrect. The total score is 5. 0-2 (negative attitude), 3-4 (moderate attitude), 5 (positive attitude).

1.7.4 Adult Community in Selangor

The adult community is a group of people who were divided into age classes that included young adulthood (18 to 35 years), middle-aged (36 to 55 years), and older adulthood, which were narrowly specified (56 years and older). In this study, it was conducted toward adult with age 18 above and adult community that was living in Sepang, Petaling, and Hulu Langat, which are in the state of Selangor.

1.8 Conceptual framework

FIGURE: 1 CONCEPTUAL FRAMEWORK



CHAPTER 2

LITERATURE REVIEW

2.1 Hypertension

According to the latest Malaysia Clinical Guideline for The Management of Hypertension (2018), hypertension is characterized as persistent systolic blood pressure (BP) elevation of or greater than 140 mmHg and/or diastolic BP of or greater than 90 mmHg. Hypertension can be categorized into 3 stages: stage 1 (mild) with systolic of 140-159 mmHg and/or diastolic of 90-99 mmHg, stage 2 (moderate) with systolic of 160-179 mmHg and/or 100-109 mmHg, and stage 3 (severe) with systolic of ≥ 180 mmHg and/or diastolic of ≥ 110mmHg. If not treated, high blood pressure can lead to complications and a risk of heart attack, stroke, kidney failure, and blindness (Nor et al., 2020). Based on NHMS, (2019), an increasing trend in the prevalence of hypertension for adults aged 30 and above has increased to 43.5%.

Over the years, the emergence of the problem of hypertension has caused mortality in Malaysia to increase in parallel with the expansion of growth that changes socio-demographic behavior (Abdul Razak et al., 2016). For the development of prevention and treatment strategies, recognizing the risk factors for hypertension is very crucial (WHO, 2021). Individuals are at risk of getting hypertension if their first-degree family has a history of hypertension, it is due to some reasons. Blood relatives tend to have the same genes that predispose a person to hypertension and another critical disease. Discovery from several studies about monogenic hypertension concludes that there are currently 12 genes that have been identified, leading to 8 distinguishable

Mendelian syndromes causing hypertension (Ehret & Caulfield, 2013). In Malaysia research done by Ghodsian et al (2016), found that there is a significant association of Ala589Ser polymorphism of With-no-lysine (K) Kinase-4 (WNK4) gene and hypertension.

Most hypertensive patients in Malaysia are from a group of older age, it is commonly due to aging process that will stiffen the arteries which will increase the systolic pressure (Naing et al., 2016). On the one hand, cities and towns might protect the treatment of hypertension. However, the pressures of life may be greater in cities and towns than in rural areas. Living in cities is hard and stressful as the living cost is high compared to in rural areas. Most of them faced high workload, financial stress to sustain their life which led them to stress (Mahadir Naidu et al., 2019). Strong evidence of the relationship between stress and hypertension has been found. Liu et al (2017), stated that stress response can cause cascade changes in our body system especially the cardiovascular and nervous systems. A chronic SNS stimulation of the cardiovascular system can lead to an elevation in blood pressure.

Moreover, clinical and observational research has found that individual lifestyle factors are linked to cardiovascular morbidity and mortality. Emerging data show that lifestyle improvements are useful and effective to reduce blood pressure and global cardiovascular risk (Cosimo Marcello et al., 2018). Practicing a poor diet such as excessive salt intake can cause the body to retain fluid which increases blood pressure. WHO (2018), recommends a reduction in sodium intake (<2 g/day) to reduce blood pressure and risk of cardiovascular disease, stroke, and coronary heart disease in the adult. Experimental studies stated that high sodium intake increases arterial pressure, which affects the left

ventricular mass and intima-media thickness of large arteries. Having said that, a salt reduction can help improves artery flow-mediated dilation (Graudal et al., 2020).

Furthermore, the mechanism lying under the effect of physical activity on hypertension is proved by several studies that described that exercising can reduce systolic and diastolic blood pressure. The reduction in blood pressure is related to depletion in peripheral vascular resistance that may due to a reduction to neuro hormonal and increase in arterial lumen diameters (O'connor, 2016). Additionally, K. et al (2018) stated that there is a strong, predictable direct relationship between alcohol consumption and blood pressure. A J-shaped association in light-to-moderate intake of alcohol can modestly lower hypertension risk, whereas heavier consumption of ≥4 drinks per day significantly increased hypertension risk. Therefore, the public needs to have enlightenment on the effect of excessive alcohol intake on hypertension.

2.2 Knowledge on Hypertension

Knowledge is described as the depth of real understanding of specific subjects and personal effectiveness in completing a task. Knowledge requires understanding and skills learned through experience and education (Greene et al., 2018). Ministry of Health Malaysia has done many initiatives to spread and provide awareness and knowledge about hypertension. However, Risso-Gill et al (2015) describe that educational materials produced are often criticized by health professionals as they provide only a little input from target audiences

such as the patient. They did not take into consideration of the deeply established health belief of Malaysians. Only a little impact on raising awareness of hypertension due to the information is too general and not strong enough.

Patients need to have adequate knowledge of hypertension so that they can control their hypertension and are more compliant with their treatment. People who have knowledge are more aware of their health status and precaution steps can be taken promptly (Kilic et al., 2016). A higher level of educational people is easily understood about the complication of hypertension. According to a study done among hypertensive patients in Pakistan, 80% from higher educational levels (college and higher) understand what is hypertension. It is also reported that these major groups is compliant with their hypertensive medication rather than only 30.9% from lower educational levels (Eshah & Al-daken, 2016). People with adequate health literacy can understand, evaluate, and act on health-care information. Thus, with a high level of education, better knowledge may affect the attitude towards the management of hypertension.

However, knowledge on hypertension is still unfavorable insufficient and partly associated with educational level, leaving much room for improvement by health educational campaigns. A previous study was done by Naing et al (2016) among adults in Malaysia found out that a low level of educational level leads to a lower understanding of health. People from lower educational level are maybe having difficulty in understanding on health issues which make them fail to recognize early sign and symptoms of hypertension (Carey et al., 2018). This will lead to further complications especially when treatment is not received.

2.3 Attitude on Hypertension

Attitude is a psychological concept, a mental and emotional entity inherent in or characterizing a person. They are complex and are an acquired state through experiences. It is the predisposed state of mind of an individual concerning to a value and is precipitated by a reactive expression towards oneself, a person, position, thing, or event (the object of attitude), which in turn influences the thinking and behavior of the individual (Perloff, 2020). An example of negative attitude shown by the hypertensive patient are they stop going for follow-up when their blood pressure is under control but come back months later with dangerously high blood pressure reading. Also, some of the patients did not adhere to medication as they are unable to see positive effects as obvious as the side effect from the medication. Some patient thinks that having to spend money on medication is equal to money loss (Risso-Gill et al., 2017).

According to Feurer (2020), people of urban community has a good knowledge of hypertension, however, they did not practice it. The majority practice unhealthy lifestyles such as eats food that is high in sodium, not exercise, smoking, which puts their health status at threat and increases their prevalence of getting hypertension. The most frequent explanations were they are lacking time to take care of themselves and did not think that behavior change would make any difference. Healthcare providers need to put more effort into educating hypertensive patients about their disease status, especially in urban areas to change the public attitude toward hypertension.

In addition, the early adult generation pay less attention to this disease as they think that are not included in the risk factor group, hence no improvement in their lifestyle. It is very important to change good attitudes at an early stage,

as optimistic attitudes have been correlated with health-promoting activities that decreases the prevalence of the disease (Dayal, 2018). Attitude towards hypertension also has a major effect on disease symptom treatment, drug adherence, blood pressure regulation, and decrease the rate of morbidity and mortality (Bollampally et al., 2016). One of the factors that affect the attitudes of people includes personal belief toward complications of hypertension. A previous study shows that there is a small percentage of respondents strongly believe with the opinion that hypertension could be caused by evil spirits or charms. Some of them believe that only God has the power to determine their health (Akinlua et al., 2016; Azubuike & Kurmi, 2014). Such belief tends to seek traditional treatment that ignores modern scientific medicine, which indirectly slows down the process of early detection of hypertension (Abrams et al., 2020).

Preventive measures on hypertension were dependent on individuals' behavioral intentions. Knowledgeable alone is insufficient without attitude. Thus, reinforce attitudes even in highly educated and highly knowledge is needed. Health behavior is simply the decisions taken by individuals that affect health status. Choices can include negative or positive behaviors (Akbarpour et al., 2018). Some examples of positive behaviors include go for a medical check-up, have adequate sleep each night and eating fruits and vegetables. A regular medical check-up can act as a stepping stone in managing hypertension. Individuals need to be committed to the management process, starting from gaining efficient knowledge followed by positive attitudes (Sa'adeh et al., 2018). However, symptoms of hypertension or its complication are usually found only at late stages, where these signs were ignored at early stages, especially when

individuals are not aware of hypertension. A study revealed that it was very hard for a working person with mild hypertension to make time for check-ups (Nguyen et al., 2018).

Exercising is a health behavior that is influenced by many factors such as family support and confidence. Exercising can help in blood pressure control as it can rise and redistributes cardiac output to maintain perfusion of active muscles. Systolic blood pressure increase as cardiac output rises, while diastolic blood pressure decreased peripheral vascular resistance (Ghadieh & Saab, 2017). Nevertheless, a study found out that most individuals with hypertension are linked to sedentary behavior and are poor exercise behavior which concludes that the attitude of patients towards exercise for blood pressure control was negative (Awotidebe et al., 2019). Many factors may contribute to the negative attitude towards exercising such as low counseling rates, limited access to recreational facilities, unable to recognize the benefit of exercise, and overdependence on medication. A mostly only higher level of education was found to have more knowledge about benefits of exercise. Also, advice such as regular exercise that is given by healthcare workers to a hypertensive patient may not be effective enough to influence patients in taking a formed decision on control of blood pressure (Awotidebe et al., 2019).

2.4 Relationship between knowledge and attitude toward hypertension

Assessment of knowledge and Attitude towards hypertension is essentially required for a new development of knowledge- and attitude-enhancing programs to reduce the burden of hypertension in Malaysia (Ali Haider Mohammed et al., 2019). According to Gong et al (2020), there is an inverse

association between socioeconomic status and hypertension has been found in several developed and developing countries. The same author also concludes that socio-demographic factors had important influences on hypertension-related knowledge and attitudes, which was consistent with previous studies (Bosque-Prous et al., 2015; Zambrana et al., 2014). Moreover, a study done by Sadeq & Lafta (2017), found that the knowledge score is significantly associated with age, gender, level of education, and the existence of a positive history of hypertension in the family.

Most individuals have gained sufficient knowledge, but only a few display real motivation (wish and attempt) to improve, and very few have achieved the stages of skills and action where people actively participate in an improved attitude (Aubert et al., 2018). In the current study, men displayed better knowledge than women, which could be because they can interact with health professionals more easily (from the psychological point of view) and ask about their illness to learn more information, but their attitude and practice scores were almost identical to those of women (Everett & Zajacova, 2019).

According to Buang et al (2019), knowledge had a significant fair positive correlation with attitude ($r=+0.393$; $p<0.001$) regarding hypertension. Knowledge seems to affect the fundamental indicator of (behavioral) adherence, the pre-requisites of adherence (i.e., knowledge and attitude), and some clinical outcomes of medication adherence, such as blood pressure regulation (Eghbali-Babadi et al., 2018). In summary, this chapter discussed the knowledge and attitude toward hypertension. Furthermore, the methodology of this study will be discussed in the next chapter.

Despite Malaysia's high level of hypertension awareness, the attitude toward handling hypertension remains unsatisfactory (Nor et al., 2020). A considerable number of people with hypertension continue to be underserved. Nurses play a critical role in patient care by preventing, recognizing, and responding to problems, ensuring long-term adherence and blood pressure regulation (Himmelfarb et al., 2016). This research would aid nurses and other healthcare providers in providing patient education, counseling, and capacity development, as well as facilitating nurses management of patients' attainment toward the following four essential behaviors that are required to obtain and maintain long-term blood pressure control: (1) Decide to keep the blood pressure under control; (2) Accept care guidelines for hypertension (such as prescription and lifestyle changes) exactly as directed; (3) monitor progress toward the optimum blood pressure goal; and (4) resolve barriers that prevent reaching the blood pressure desire goals. In summary, this chapter discussed the knowledge and attitude toward hypertension. Furthermore, the methodology of this study will be discussed in the next chapter.

CHAPTER 3

METHOD

3.1 Research Design

This study is a cross-sectional design. A cross sectional study can be defined as an observational study designed for investigation of a population at one specific point in time where the outcomes and exposure of the study present at the same time (Wang & Cheng, 2020). Besides that, cross sectional study enables the researcher to look at various characteristics of participant at once and investigate the association between these variables (Setia, 2016). Thus, it is suitable to determine knowledge and attitude of hypertension among adult community in Selangor.

3.2 Study location & duration

The data of the study was collected from March 2021 until May 2021. This study was carried out at areas in Selangor (Sepang, Petaling, and Hulu Langat).

3.3 Study Population

My target population is among adult community in Selangor (Sepang, Petaling, and Hulu Langat).

3.4 Subject Criteria

Inclusion Criteria	Exclusion Criteria
• Participant must be adults ≥ 18 years old	• Individuals with cognitive dysfunction
• Malaysian citizen	• Pregnant women
	• Patient who is diagnosed and undergo treatment for hypertension

Rationale for the inclusion criteria:

- Participant must be adults ≥ 18 years old: In Malaysia, three in ten adults aged ≥ 18 years have hypertension (Man J et al., 2020)

Rationale for the exclusion criteria:

- Individuals with cognitive dysfunction: Have problem such as deficits in attention, short-term and working memory, visual and auditory processing, problem solving, processing speed, and motor functioning (Lam et al., 2014). Therefore, their answer toward questionnaire is not accurate.
- Pregnant women: Gestational hypertension has a different aetiology of hypertension compared to a hypertensive person (Duley, 2008). Therefore, they are not suitable to be included in my study.
- Patient who is diagnosed and undergo treatment for hypertension: Patient's treatment may effect on high knowledge and good attitude toward hypertension management.

3.5 Sample Size Estimation

The sample size was calculated by using single sample proportions which the proportions needed will be obtained from previous study. The formula for determining the sample sizes required is derived from https://goodcalculators.com/sample-size-calculator/

After calculation done by using sample size calculator, the estimated number of participants needed in this study is 221 respondents.

Formula sample size:

- $$n = \frac{z^2 p(100 - p)}{d^2}$$

Where:

n = Sample size

z = Standard normal deviate (considered 1.96 for 95% confidence interval)

d = Margin of error (0.05)

p = Estimated prevalence

According to Buang et al., (2019) the proportion of residents in housing area at Selangor which have good score in knowledge and attitude regarding hypertension is 84.5 % and 87.3 % respectively. Sample size is calculated as below:

Good Knowledge (84.5%)	***Good Attitude*** (87.3%)
$n = \frac{(1.96^2)(84.5)(100 - 84.5)}{5^2}$ n = 201.26 n = 201	$n = \frac{(1.96^2)(87.3)(100 - 87.3)}{5^2}$ n = 170.37 n = 170

The highest number is selected. Adjusted with 10% non-response rate of 201. Hence, the total sample size needed is 20 which rounded off as 221. So, the samples of 221 out of adult respondents under 3 out of 9 districts in Selangor were chosen to participate as representative of the population to warrant accurate generalization.

3.6 Sampling Method

The random sampling method is a method of selecting a sample from a statistical population in such a way that every potential might be selected has a determined probability of being selected. The spinning wheels method was used to select districts in Selangor that involved in the study. The spinning wheel is generated by using this link https://pickerwheel.com/ on 20th January of 2021. This website provides a very handy online random wheel decision tool that can spin the wheel and pick a choice from a bunch of inputs, only 3 spins are allowed for one set of data input. This method involves 9 districts in Selangor and only 3 spins are done by the researcher. Districts that are pointed were selected to participate in this study, while districts that are not pointed were excluded from the study. 2 witness (Firdaus and Hafiz) is present during

the selection as an observer to avoid bias. As a result, Sepang, Hulu Langat, and Petaling are selected to participate in this study:

1. Sepang
2. Hulu Langat
3. Petaling

Convenience sampling was used to distribute the questionnaire as it is more convenient for me as a researcher. To reach the participants, the researcher will use online platforms to distribute the questionnaire such as WhatsApp, Telegram or Facebook via Google form online survey.

3.7 Research Tools/Instrument

The questionnaire is adopted from a study conducted by Shrestha et al (2016) that is used to measure the Knowledge, Attitude, and Practice (KAP) of blood pressure. The permission for the questionnaire is granted from the original author on the 28th of January 2021. The Cronbach's Alpha for this questionnaire is = 0.708 (Shrestha et al., 2016). Consists of 3 sections, Section A: Demographic data consists of socio-demographic characteristics of subjects such as gender, age, marital status, educational level, employment status, and family history of hypertension.

Section B: Questionnaire consist of 13 statements on knowledge towards hypertension. The answer choice was 'yes' and 'no'. The scoring method is

calculated by giving a score of one for a correct answer and zero for an incorrect. The total score is 13. Scores ranging from 0-4 indicate poor knowledge, 5-9 would be considered as fair knowledge and 10-13 would be considered as good knowledge.

Section C: Consists of a questionnaire to evaluate attitude towards blood pressure among respondents. The questionnaire consists of 5 statements. The answer choice was ‘yes’ and ‘no’. The scoring method is calculated by giving a score of one for a correct answer and zero for an incorrect. The total score is 5. Scores ranging maximum of 5 consider as a positive attitude. 0-2 (negative attitude), 3-4 (moderate attitude) 5 (positive attitude)

3.8 Data Collection

After the ethical approval is obtained, data collection were collected online by using Google form as the physical data collection shall be minimize during this pandemic situation in Malaysia. The Google form link were distributed and share online through the social platforms (WhatsApp, Facebook, and Twitter) among the adult community in the selected district in Selangor. The researcher identify the eligible respondent from an unofficial online community group and approach them if they would like to participate in this study voluntarily. Another alternative is that by asking help from social media influencer that lives in the district chosen in Selangor to help in distributing the questionnaires. For confirmation of participant's district, only participants who click on the option for district location, Sepang, Hulu Langat, and Petaling will able to access the questionnaire. A complete Participant Information Sheet (PIS) was provided on the first page of the online survey form to make sure the participants meet the

inclusion criteria of the study. Besides that, the participants have to click agree after they have read through all the information to provide the willingness in participating the study. Thus, consent will be automatically obtained when the participants click agree and submit the survey. To ensure the confidentiality of the participants, all data collected will only available for the researcher only.

3.10 Data analysis

The data is analysed by using Statistical Packages for Social Sciences (SPSS) version 22.0. The appropriate statistical procedure is used depending on the study objectives. Descriptive analysis and inferential analysis are used to analyse conclusion of the study.

DEMOGRAPHIC DATA			
Objectives	**Variables**	**Type of variables**	**Statistical Measurement**
To determine the demographic data of the respondents	Gender	Categorical	Frequency and percentage
	Age	Continuous	Mean and standard deviation
	Marital status	Categorical	Frequency and percentage
	Educational level	Categorical	Frequency and percentage
	Employment status	Categorical	Frequency and percentage

	Family history of hypertension	Categorical	Frequency and percentage

DESCRIPTIVE DATA			
Objectives	**Variables**	**Type of variables**	**Statistical Measurement**
To assess knowledge of hypertension among adult community in Selangor	Knowledge of hypertension	Continuous	Standard deviation (SD) and mean
To assess attitude among adult community in Selangor on hypertension	Attitude towards hypertension	Continuous	Standard deviation (SD) and mean

INFERENTIAL DATA			
Objectives	**Dependent Variables**	**Independent Variables**	**Statistical Measurement**
To determine the association between the level of knowledge and attitude on hypertension among the adult respondents in Selangor	Attitude toward hypertension (continuous)	Knowledge on hypertension (continuous)	Linear Regression
To determine the relationship between demographic data and knowledge of hypertension	Knowledge of hypertension (continuous)	Gender (categorical)	Multiple Regression

among adult community in Selangor		Age (continuous)	
		Maritial status (categorical)	
		Educational level (categorical)	
		Employment status (categorical)	
		Family history of hypertension (categorical)	
To determine the relationship between demographic data and attitude toward hypertension among community adult in Selangor	Attitude towards hypertension (continuous)	Gender (categorical)	Multiple Regression
		Age (continuous)	
		Marital status (categorical)	
		Educational level (categorical)	

		Employment status (categorical)	

3.11 Ethical Considerations

Institution

A written approval and permission obtained from the Jawatankuasa Etika Universiti untuk Penyelidikan Melibatkan Manusia (Ethics Committee for Research Involving Human Subjects), Universiti Putra Malaysia (JKEUPM).

Participant

The Participant Information Sheet and Informed Consent will be included in the questionnaire. Participants are compulsory to fill the sheet as it shows participant agree to participate in the study. Participants also have the right to be excluded from this study at any time.

CHAPTER 4: RESULTS

4.1 INTRODUCTION

In this chapter, the researcher will explain about the statistical findings of this study. The statistical analyses that were used in this study were descriptive statistics, reliability using Cronbach's alpha, simple linear regression, and multiple regression. This chapter discussed on the respondents' background, the normality of the scales' reliability, the association between knowledge of hypertension and attitude toward hypertension, and the relationship between demographic data and other variables.

4.2 Demographic Information

A total of 224 respondents participated in this study. Referring to table 4.1, 95 respondents were males (42.4%), and 129 respondents were females (57.6%), with age mean of 34.17 years (SD = 10.40). Most of the respondents were married (50.9%), and had no family history of hypertension (75.4%). 111 respondents had academic backgrounds of Bachelor, Master or Doctor of Philosophy (49.6%), followed by those with Diploma (27.7%), secondary school graduates (12.1%), and Certificate (10.7%). In term of employment status, 44 respondents were government employees (19.6%), 90 respondents were non-government employees (40.2%), 34 respondents were self-employed (15.2%), 29 respondents were unemployed (12.9%), and 27 respondents were students (12.1%).

Table 4.1 Respondents' demographic background

Variable		M	SD	f	%
Gender	Male	.42	.495	95	42.4
	Female			129	57.6
Age		34.17	10.40	-	-
Marital Status	Single	1.63	.642	98	43.8
	Married			114	50.9
	Divorced			8	3.6
	Widowed			4	1.8
Education Level	Bachelor / Master / Doctor of Philosophy	2.02	1.12	111	49.6
	Certificate			24	10.7
	Diploma			62	27.7
	Secondary School			27	12.1
Employment Status	Government Employees	2.58	1.28	44	19.6
	Non-Government Employees			90	40.2
	Self-Employed			34	15.2
	Unemployed			29	12.9
	Student			27	12.1
Family History of Hypertension	Yes	.25	.431	55	24.6
	No			169	75.4
Grand Total				**224**	**100.0**

4.3 Descriptive Statistic

Based on Table 4.2, the average total score for Knowledge of Hypertension variable was 9.74 with SD = 2.45. 7 respondents were regarded as having poor knowledge (3.1%), 80 respondents with fair knowledge (35.7%), and 137 respondents with good knowledge (61.2%). Next, the average total score for Attitude Toward Hypertension variable was 4.19 with SD = .89. 8 respondents were regarded as having negative attitude (3.6%), 112 respondents with moderate attitude (50.0%), and 104 respondents with positive attitude (46.4%).

Table 4.2 Descriptive statistic of variable

Variable		M	SD	f	%
Knowledge of Hypertension	Poor knowledge	9.74	2.45	7	3.1
	Fair knowledge			80	35.7
	Good knowledge			137	61.2
Attitude Toward Hypertension	Negative attitude	4.19	.89	8	3.6
	Moderate attitude			112	50.0
	Positive attitude			104	46.4

4.4 Linear Regression

A simple linear regression analysis was conducted to assess the association between level of knowledge and attitude on hypertension. From table 4.4, a significant regression equation was found; $F(1, 223) = 31.95$, $p < .001$, with an R^2 of .126. Based on Table 4.5, knowledge of hypertension was a significant predictor of attitude toward hypertension ($B = .13$, $p < .001$). Attitude toward hypertension increased 0.13 unit for each unit increment of knowledge of hypertension.

Table 4.4 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	22.24	1	22.24	31.95	.000	.126
Residual	154.51	222	.70			
Total	176.75	223				

Table 4.5 Regression coefficients

Predictor	B	SE	Beta	t	P
Constant	2.94	.23		12.81	.000
Knowledge of Hypertension	.13	.02	.35	5.65	.000

4.6 Multiple Regression

4.6.1 Association between sociodemographic data and Knowledge of Hypertension

A multiple linear regression analysis was computed to assess knowledge of hypertension based on gender, age and family history of hypertension. From Table 4.6, the results indicated that the three variables explained 12.6% of the variance, and that the model was a significantly correlated with of knowledge of hypertension; $R^2 = .126$, $F(3, 220) = 10.57$, $p < .001$. Based on Table 4.7, age ($B = .03$, $p = .041$) and family history of hypertension ($B = 1.45$, $p < .001$) were both significant correlate with knowledge of hypertension, where age was measured in years, and family history of hypertension was coded as 0 = No and 1 = Yes. Knowledge of hypertension increased .03 unit for each year increment of age, and those who had family history of hypertension scored 1.45 units

higher than those with no history. However, gender did not significantly correlated with knowledge of hypertension.

Table 4.6 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	168.28	3	56.09	10.57	.000	.126
Residual	1167.18	220	5.30			
Total	1335.46	223				

Table 4.7 Regression coefficients

Variable	B	SE	Beta	t	P
Constant	8.12	.58		14.04	.000
Gender	.19	.31	.04	.62	.535
Age	.03	.02	.15	2.05	.041
Family History of Hypertension	1.45	.41	.26	3.57	.000

A multiple linear regression analysis was computed to assess knowledge of hypertension based on education level. The conditions were comprised of Bachelor, Master or PhD, Certificate, Diploma, and Secondary School. From Table 4.8, a non-significant regression equation was found; F (3, 220) = 2.55, p = .057 with an R^2 of .034. Education level did not significantly correlate with knowledge of hypertension.

Table 4.8 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	44.84	3	14.95	2.55	.057	.034
Residual	1290.62	220	5.87			
Total	1335.46	223				

Table 4.9 Regression coefficients

Reference Variable		B	SE	Beta	t	p
Bachelor / Master / PhD	Constant	10.02	.23		43.58	.000
	Certificate	-.73	.54	-.09	-1.33	.184
	Diploma	-.87	.38	-.16	-2.27	.024
	Secondary School	.31	.52	.04	.61	.545
Certificate	Constant	9.29	.49		18.79	.000
	Diploma	-.15	.58	-.03	-.25	.802
	Secondary School	1.04	.68	.14	1.53	.127
	Bachelor / Master / PhD	.73	.54	.15	1.33	.184
Diploma	Constant	9.14	.31		29.73	.000
	Secondary School	1.12	.56	.16	2.13	.034
	Bachelor / Master / PhD	.87	.38	.18	2.27	.024
	Certificate	.15	.58	.02	.25	.802
Secondary School	Constant	10.33	.47		22.17	.000
	Bachelor / Master / PhD	-.31	.52	-.06	-.61	.545
	Certificate	-1.04	.68	-.13	-1.53	.127
	Diploma	-1.19	.56	-.22	-2.13	.034

A multiple linear regression analysis was computed to analyze knowledge of hypertension based on employment status. The conditions were comprised of Government Employees, Non-Government Employees, Self-Employed, Unemployed, and Student. From Table 4.10, a non-significant regression equation was found; F (4, 219) = 1.09, p = .363 with an R^2 of .019. Employment status did not significantly correlated with knowledge of hypertension.

Table 4.10 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	26.04	4	6.51	1.09	.363	.019
Residual	1309.42	219	5.98			
Total	1335.46	223				

Table 4.11 Regression coefficients

Reference Variable		B	SE	Beta	t	p
Government Employees	Constant	10.34	.37		28.05	.000
	Non-Government Employees	-.62	.45	-.12	-1.37	.170
	Self-Employed	-.75	.56	-.11	-1.35	.179
	Unemployed	-.79	.58	-.11	-1.35	.179
	Student	-1.16	.60	-.15	-1.93	.054
Non-Government Employees	Constant	9.72	.26		37.72	.000
	Self-Employed	-.13	.49	-.02	-.27	.786
	Unemployed	-.17	.52	-.02	-.33	.744
	Student	-.54	.54	-.07	-1.00	.318
	Government Employees	.62	.45	.10	1.37	.170
Self-	Constant	9.59	.42		22.86	.000

Employed	Unemployed	-.04	.62	-.00	-.06	.953
	Student	-.40	.63	-.05	-.64	.523
	Government Employees	.75	.56	.12	1.35	.179
	Non-Government Employees	.13	.49	.03	.27	.786
Unemployed	Constant	9.55	.45		21.04	.000
	Student	-.37	.65	-.05	-.56	.576
	Government Employees	.79	.58	.13	1.35	.179
	Non-Government Employees	.17	.52	.03	.33	.744
	Self-Employed	.04	.62	.00	.06	.953
Student	Constant	9.18	.471		19.52	.000
	Government Employees	1.16	.598	.19	1.93	.054
	Non-Government Employees	.54	.54	.11	1.00	.318
	Self-Employed	.40	.63	.06	.64	.523
	Unemployed	.37	.65	.05	.56	.576

A multiple linear regression analysis was computed to analyze knowledge of hypertension based on marital status. The conditions were comprised of Single, Married, Divorced, and Widowed. From Table 4.12, a significant regression equation was found; F (3, 220) = 5.98, p = .001 with R^2 of .126, indicating that marital status was found significantly correlated with of knowledge of hypertension. Based on Table 4.13, Widowed group scored 3.67 units higher than Single group (B = -3.67, p = .003) and 2.58 units higher than Married group (B = -2.58, p = .033). Besides that, Married group scored 1.08 units higher than Single group (B = -1.08, p = .001)

Table 4.12 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	100.65	3	33.55	5.98	.001	.075
Residual	1234.80	220	5.61			
Total	1335.46	223				

Table 4.13 Regression coefficients

Reference Variable		B	SE	Beta	t	p
Single	Constant	9.08	.24		37.95	.000
	Married	1.08	.33	.22	3.32	.001
	Divorced	1.04	.87	.08	1.20	.232
	Widowed	3.67	1.21	.20	3.03	.003
Married	Constant	10.17	.22		45.82	.000
	Divorced	-.04	.87	-.00	-.05	.962
	Widowed	2.58	1.20	.14	2.14	.033
	Single	-1.08	.33	-.22	-3.32	.001
Divorced	Constant	10.12	.84		12.09	.000
	Widowed	2.62	1.45	.14	1.81	.072
	Single	-1.04	.87	-.21	-1.20	.232
	Married	.04	.87	.01	.05	.962
Widowed	Constant	12.75	1.18		10.76	.000
	Single	-3.67	1.21	-.74	-3.03	.003
	Married	-2.58	1.20	-.53	-2.14	.033
	Divorced	-2.62	1.45	-.20	-1.81	.072

4.6.2 Association between Sociodemographic data and Attitude toward Hypertension

A multiple linear regression analysis was computed to assess the attitude toward hypertension based on gender, age and family history of hypertension. From Table 4.14, the results indicated that there was no significant relationship found between the sociodemographic data and attitude toward hypertension; R^2 = .023, F(3, 220) = 1.73, p = .161. Gender, age and family history of hypertension did not significantly related with attitude toward hypertension.

Table 4.14 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	4.08	3	1.36	1.73	.161	.023
Residual	172.66	220	.78			
Total	176.75	223				

Variable	B	SE	Beta	t	p
Constant	4.08	.22		18.37	.000
Gender	.08	.12	.04	.67	.505
Age	.00	.01	.00	.01	.993
Family History of Hypertension	.29	.16	.14	1.85	.066

A multiple linear regression analysis was computed to assess the attitude toward hypertension based on education level. The conditions were comprised of Bachelor, Master or PhD, Certificate, Diploma, and Secondary School. From Table 4.16, a non-significant regression equation was found; F(3, 220) = 1.98, p = .118 with an R^2 of .026. Education level was did not correlate significantly with attitude toward hypertension.

Table 4.16 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	4.64	3	1.55	1.98	.118	.026
Residual	172.11	220	.78			
Total	176.75	223				

Table 4.17 Regression coefficients

Reference Variable		B	SE	Beta	t	p
Bachelor / Master / PhD	Constant	4.31	.08		51.40	.000
	Certificate	-.27	.20	-.09	-1.37	.171
	Diploma	-.31	.14	-.16	-2.25	.026
	Secondary School	-.06	.19	-.02	-.29	.768
Certificate	Constant	4.04	.18		22.39	.000
	Diploma	-.04	.21	-.02	-.20	.845
	Secondary School	.22	.25	.08	.88	.381
	Bachelor / Master / PhD	.27	.20	.15	1.37	.171
Diploma	Constant	4.00	.11		35.61	.000
	Secondary School	.26	.20	.09	1.27	.205
	Bachelor / Master / PhD	.31	.14	.18	2.25	.026
	Certificate	.04	.21	.01	.20	.845
Secondary School	Constant	4.26	.17		25.02	.000
	Bachelor / Master / PhD	.05	.19	.03	.29	.768
	Certificate	-.22	.25	-.08	-.878	.381

	Diploma	-.26	.20	-.13	-1.27	.205

A multiple linear regression analysis was computed to assess attitude toward hypertension based on employment status. The conditions were comprised of Government Employees, Non-Government Employees, Self-Employed, Unemployed, and Student. From Table 4.18, a non-significant regression equation was found; F (4, 219) = 1.10, p = .359 with an R^2 of .020. Employment status did not correlate significantly with attitude toward hypertension.

Table 4.18 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	3.47	4	.87	1.10	.359	.020
Residual	173.28	219	.79			
Total	176.75	223				

Table 4.19 Regression coefficients

Reference Variable		B	SE	Beta	t	p
Government Employees	Constant	4.16	.13		31.01	.000
	Non-Government Employees	.05	.16	.03	.32	.751
	Self-Employed	-.13	.20	-.05	-.64	.524
	Unemployed	-.06	.21	-.02	-.26	.794
	Student	.32	.22	.12	1.48	.140
Non-Government Employees	Constant	4.21	.09		44.91	.000
	Self-Employed	-.18	.18	-.07	-1.01	.311

	Unemployed	-.11	.19	-.04	-.57	.571
	Student	.27	.19	.10	1.38	.167
	Government Employees	-.05	.16	-.02	-.32	.751
Self-Employed	Constant	4.03	.15		26.41	.000
	Unemployed	.07	.22	.03	.33	.742
	Student	.45	.23	.17	1.97	.050
	Government Employees	.13	.20	.06	.64	.524
	Non-Government Employees	.18	.18	.10	1.01	.311
Unemployed	Constant	4.10	.16		24.84	.000
	Student	.38	.24	.14	1.59	.113
	Government Employees	.06	.21	.02	.26	.794
	Non-Government Employees	.11	.19	.06	.57	.571
	Self-Employed	-.07	.22	-.03	-.33	.742
Student	Constant	4.48	.17		26.18	.000
	Government Employees	-.32	.22	-.14	-1.48	.140
	Non-Government Employees	-.27	.19	-.15	-1.38	.167
	Self-Employed	-.45	.23	-.18	-1.97	.050
	Unemployed	-.38	.24	-.14	-1.59	.113

A multiple linear regression analysis was computed to analyze attitude of hypertension based on marital status. The conditions were comprised of Single, Married, Divorced, and Widowed. From Table 4.20, a non-significant regression

equation was found; F(3, 220) = 2.58, p = .054 with R^2 of .034. Marital status did not correlate significantly with the attitude toward hypertension.

Table 4.20 Summary table of ANOVA

Model	SS	df	MS	F	p	R^2
Regression	6.01	3	2.00	2.58	.054	.034
Residual	170.74	220	.78			
Total	176.75	223				

Table 4.21 Regression coefficients

Reference Variable	Predictor	B	SE	Beta	t	p
Single	Constant	4.21	.09		47.36	.000
	Married	-.11	.12	-.06	-.90	.370
	Divorced	.54	.32	.11	1.65	.100
	Widowed	.79	.45	.12	1.75	.082
Married	Constant	4.10	.08		49.76	.000
	Divorced	.64	.32	.13	2.00	.047
	Widowed	.89	.45	.13	2.00	.047
	Single	.11	.12	.06	.90	.370
Divorced	Constant	4.75	.31		15.25	.000
	Widowed	.25	.54	.04	.46	.644
	Single	-.54	.32	-.30	-1.65	.100
	Married	-.64	.32	-.36	-2.00	.047
Widowed	Constant	5.00	.44		11.35	.000
	Single	-.79	.45	-.44	-1.75	.082
	Married	-.89	.45	-.50	-2.00	.047
	Divorced	-.25	.54	-.05	-.46	.644

CHAPTER 5

DISCUSSION AND CONCLUSION

5.0 Introduction

The findings of this study are discussed further in this chapter based on the objective set. The discussion includes all the results of the descriptive findings of the respondents' socio-demographic characteristics. The descriptive data of knowledge and attitude towards hypertension will also be discussed. On the other hand, the association between demographic data and level of knowledge on hypertension will be explored in this study. The same goes for the association between demographic data and attitude toward.

5.1 Socio-Demographic Characteristics

One of the major platforms to distribute the questionnaire was on Facebook such as the Facebook district's community group. In this study, female participation numbers are slightly higher compared to males. This is most probably because of the longer time screen surfed by the female in social media especially in Facebook, this statement is supported by a study done by Azizi et al., (2019) stated that Female used Facebook more than male, according to the findings of a survey of Polish students. However, an online global statistic data from *Statistica* (2021) mentioned that the distribution of Facebook users worldwide as of the early quarter 3 (Q3) of 2021 is slightly dominated by males (56.4%) compare to females (43.6%). The majority of females respondent from our study might be influence by external factors that researcher incapable to control.

Next, finding from our study describes more than half of the respondents were married followed by the respondent with the marital status of single which are similar to the studies done by Sabouhi et al., (2011), Ghazali et al., (2015), Kilic et al., (2016), Nguyen et al., (2018), Eghbali-Babadi et al., (2018), Sathya et al., (2020), Zhang et al., (2021), the significant majority of the married respondent can be due to the objective of our study to collect data among the adult community that age 18-year-old and above. Even so, this factor is inadequate to support the conclusion as typical marriage age varies hugely across the world.

In terms of employment status, the majority of the respondents were non-government employees (40.2%), followed by government employees (19.6%), self-employed (15.2%), were unemployed (12.9%), and students (12.1%). This may be due to most of the members from the Facebook community group are using the platform to promote their product, selling and buying items that can be highly related to online business and services from non-government sectors. However, this situation is just an assumption made by the researcher based on the data presented in this study, further specific studies need to be conducted to discuss the factor that affects the distribution of respondent's employment status on the Facebook community's group. Furthermore, the majority of the respondents for this study had no family history of HPT. These results are similar to researches conducted by Ulasi et al., (2011), Ranasinghe et al., (2015), Dhakal et al., (2021), and Leung et al., (2017). Nonetheless, there are also similar studies that show contra outcome such as Tedesco et al., (2001) and (Li et al., 2021) with majority respondent have family history of hypertension

5.2 Knowledge about Hypertension

Individual correct responses to each item question are recorded as frequency and percentage, as well as a composite total score; mean and standard deviation (SD). In this study the average total score for Knowledge of Hypertension variable was 9.74 with SD = 2.45. 61.2 % (n= 137) of respondents have a good basic knowledge of HPT, 35.7% (n=80) have a fair knowledge and only 3.1% (n=7) have poor knowledge. This knowledge of HPT includes the basic understanding of the normal range of BP reading, high BP reading, BP control, and complication of High BP. According to Almas et al., (2012), patients with sufficient understanding of hypertension have been linked to better drug adherence and blood pressure control. However, this result does not imply that respondents have a thorough understanding of HPT theory. A study was done by Everett & Zajacova, (2019), Afrida et al., (2019), and Aubert et al., (2018) showed similar result where the respondent have a good level of knowledge of HPT.

However, Chimberengwa et al., (2019) did a study in Southern Zimbabwe and came to the opposite conclusion. According to their findings, there was an identified risk of consuming too much salt with meals in the population, which was caused by a lack of understanding of hypertension as a risk factor. Another conclusion of this study was that the majority of respondents had inadequate understanding about hypertension because the early stages of hypertension are asymptomatic. A research done in Canada by Gee et al., (2012) found a similar finding of low HPT knowledge. According to their findings, a significant number of respondents have little interaction with health-care system activities such as regular medical check-ups and adherence to pharmacotherapy,

indicating a lack of knowledge and the need for resources and educational messages promoting systolic blood pressure control.

5.3 Attitude towards Hypertension

Next, the average total score for Attitude toward Hypertension variable was 4.19 with SD = 0.89. 8 respondents were regarded as having negative attitude (3.6%), 112 respondents with moderate attitude (50.0%), and 104 respondents with positive attitude (46.4%). This study result showed that majority respondent has a moderate attitude toward HPT. The moderate level of attitude might be influenced by several factor such as moderate lifestyle, salt intake, and moderate compliance with regular health check-up. This result also appeared in studies conducted by Afzal et al., (2018) in Pakistan, Vaidya et al., (2013) in Nepal, Eghbali-Babadi et al., (2018), Sadeq & Lafta, (2017) in Iraq

Farshidi et al., (2018) on the other hand, came to a different conclusion. The responder has an optimistic attitude, according to the findings report, with a Mean ± SD= 5.50 ± 0.05. This positive attitude is linked to the physician's inspiration and encouragement of hypertension patients' attitudes toward treatment and illness management, which increases their desire to further their careers by attending training courses.

A study conducted by Cherfan et al., (2020), suggest that modifiable unhealthy lifestyle factors such as high alcohol consumption, overweight, and non-adherence to dietary guidelines are related with an elevated risk of uncontrolled hypertension in hypertensive treated persons from a population-based

perspective. Busy schedules, low socioeconomic status, low education level, beliefs, health condition, severe weather condition, cost of medications, side effects of medications, poor memory, lack of motivation, lack of social and family support, and unwillingness were found to be the major reasons for non-adherence to hypertension control (Wee et al., 2013).

5.4 Association between Socio-Demographic Characteristics and Knowledge about Hypertension

Age and family history of HPT has a significant predictor of knowledge of hypertension, this is further supported by the regression coefficient test with the value of age ($B = .03$, $p = .041$) and family history of hypertension ($B = 1.45$, $p < .001$). Knowledge of hypertension increased 0.03 unit for each year increment of age. Studies conducted by Zhang et al., (2021), Cuschieri et al., (2017), Boledovičová et al., (2013), Almas et al., (2012), and Naing et al., (2016) also show significant association between age and knowledge of HPT. This might be because older individuals visit health facilities more frequently, and older persons have the highest prevalence of hypertension (Lugo-Mata et al., 2017).

Next, in this study, those who had family history of hypertension scored 1.45 units higher than those with no history. which has similar findings from researchers conducted by McEniery et al., (2007), Noor Hassim et al., (2016), and Nor et al., (2020), Li et al., (2021), Ranasinghe et al., (2015), Buang et al., (2019). According to study conducted by Sadeq & Lafta, (2017), the participants that have a family history of hypertension tend have higher curiosity resulting in

them to start seeking knowledge, read and gather information about the disease to promote their health and wellbeing in the long term.

Other than that, in this study a significant regression equation was found; F (3, 220) = 5.98, p = .001 with R^2 of .075, indicating that marital status was a significant predictor of knowledge of hypertension. This significant finding was also similar to studies conducted by Cherfan et al., (2020), Ramezankhani et al., (2019), and Schultz et al., (2021). Research conducted by Tuoyire & Ayetey, (2019) in Ghana explained that the hypertensive women's knowledge increase as they expose to two factor associate with HPT which is salt in intake and physiological stress related to double burden. Women gain considerable socioeconomic benefits from being married, notably through spousal financial support. Women's affordability and consumption of meals with a high Dietary Guidelines Index might be increased as a result of such "improvements" in their socioeconomic situation. Moreover, women are sometimes expected to combine work with traditional obligations like caring for their spouse, children, and, in certain cases, relatives, a physiological stress situation known as the "double burden."

5.5 Association between Socio-Demographic Characteristics and Attitude towards Hypertension

Based on sociodemographic data, a multiple regression analysis was used to predict attitude toward HPT in this study. However, no significant link was seen between socio-demographic data and attitudes regarding HPT. In contrast, research was done by Gong et al., (2020) found that the rates of correct

attitudes in the population at risk for hypertension in Eastern China were high, however the creation of healthy habits needed to be promoted further. Moreover, a population-based survey conducted by Huang et al., (2021) also shows a significant association between socio-demographic data (education level) and attitude toward hypertension. Individual with low education tended to have poorer health behavior (e.g. smoking, inadequate exercise). Which is the opposite outcome of our study. Last but not least, few studies (Annamalai et al., 2011; Lipowicz & Lopuszanska, 2005; Ali Haider Mohammed et al., 2019; Sa'adeh et al., 2018) proved that individual with higher education qualifications will have a better attitude towards HPT prevention .

5.6 Association between Knowledge about and Attitude towards Hypertension

Next, a simple linear regression analysis had found that there was a correlation between level of knowledge and attitude toward hypertension. Specifically, our study show attitude was significantly influenced by the level of knowledge on attitude toward hypertension increased 0.13 unit for each unit increment of knowledge of hypertension. Hence the alternative hypothesis is accepted. It's possible that participants' considerably favorable attitude toward risk factors stems from their knowledge of healthy lifestyles advocated in the media. Another cause might be the increased use of advertising healthy diet, as well as the decrease in the use of traditional medications, and physical fitness programmers, all of which have raised public awareness(Baig et al., 2015).

It is also supported by study findings from Sa'adeh et al., (2018) stated that, increasing understanding and attitude are important elements in maintaining a healthy lifestyle, adhering to medication regimens, and avoiding risk factors that aggravate Chronic Kidney Disease (CKD) development, such as smoking and eating a high-sodium diet. Hence, showing that respondents who have good attitude will practice a healthy lifestyle. If the individuals had a better understanding of hypertension, they would be better prepared for secondary prevention, such as screening. This is simple to understand: human conduct is determined by their attitudes about each activity, and these attitudes are based on what they know about the results. In addition, preventative techniques were based on behavioral intentions, intentions were based on attitudes and norms, which were developed using theoretical knowledge (Shen et al., 2017).

5.7 Conclusion

In conclusion, this study had found that the respondents in this study have good knowledge and moderate attitude towards HPT with the mean score for knowledge is 9.74 ±SD 2.45 while the mean score for attitude is 4.19 ±SD 0.89. Next, a significant regression equation was found; $F(1, 223) = 31.95$, $p < .001$, with an R^2 of .126. Knowledge of hypertension was a significant predictor of attitude toward hypertension ($B = .13$, $p < .001$). Attitude toward hypertension increased 0.13 unit for each unit increment of knowledge of hypertension.

Besides, based on the multiple regression analysis, age ($B = .03$, $p = .041$) and family history of hypertension ($B = 1.45$, $p < .001$) were both significant predictors of knowledge of hypertension. Furthermore, a significant regression

equation was found indicating that marital status was a significant predictor of knowledge of hypertension. As a result, it's critical to improve knowledge and raise attitude and positive behavioral changes about the significance of HPT. This is because nurses were able to understand their patients' needs and, as a result, were more attentive to them. As a result, it is advised that retraining courses be organized to improve their knowledge and attitudes, and that the Ministry of Health prioritize blood pressure control.

CHAPTER 6

LIMITATION AND RECOMMENDATION

6.0 Introduction

This study is a cross-sectional study that had been conducted within a short period by using the convenience sampling method for data collection. Thus, there are several limitations identified during the research period that will be discussed in this chapter.

6.1 Limitations

This is a cross-sectional which limits the causal inference of the results. Furthermore, the convenience sample method utilised cannot guarantee that the results will be applicable to the whole research population. As a result, for a better conclusion of the study data, a cohort or experimental study with adequate random sampling is advised.

Due to movement control order (MCO), approaching respondents from targeted districts are difficult. The process of recruiting adult respondents from the selected district can only be achieved through online platforms such as district community groups on Facebook. Also, the pre-test for this study among students in Universiti Putra Malaysia was not done because of time constraints, late approval from Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia (JKEUPM) is also one of the reasons unable to complete the pre-test.

6.2 Recommendation

More effective health education initiatives are needed to raise community awareness and understanding about this condition in order to prevent additional problems. As for nursing practice, Nurses shall continue to play a vital role in

patient care by avoiding, identifying, and responding to issues, as well as maintaining long-term compliance and blood pressure control. For a better conclusion of the study results, a cohort or experimental study with adequate random sampling is advised.

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Permission to use questionnaire

Report message · Block user

Azwan Ruslan 17 days ago

Greetings,

I am Azwan Ruslan, from Bachelor of Nursing University Putra Malaysia

Right now I am doing a research which title "Knowledge and Attitude toward hypertension among adult community in Selangor", therefore I would like to ask your permission to use the questionnaire from the article "Knowledge, Attitude and Practice on Hypertension Among Antihypertensive Medication Users"
I hope you consider my request. Feel free to contact me thru here or email me at 194849@student.upm.edu.my or my personal email: azwxnrsln@gmail.com

SHAKTI Shrestha to you 17 days ago

Dear Azwan,

Please feel free to use the questionnaire with appropriate citation to the study.

Best wishes for your research.

SHAKTI

Appendix B: Participant Information Sheet and Informed Consent Form

PARTICIPATION INFORMATION SHEET

1. STUDY TITLE: KNOWLEDGE AND ATTITUDE OF HYPERTENSION AMONG ADULT COMMUNITY IN SELANGOR

2. INTRODUCTION:

This study will investigate knowledge and attitudes towards hypertension. Hypertension is one of the risk factors for heart disease in the world that is a major cause of stroke and heart attack. There are many reports of deaths worldwide due to heart disease. However, there is still low knowledge and attitude among adults towards hypertension.

3. WHAT WILL YOU HAVE TO DO?

This questionnaire will be given to individuals from various specific locations throughout Selangor. This questionnaire is divided into 3 sections, Section 1, Section 2 and Section 3. You are required to answer all the questions in sections and take about 10-15 minutes. Your feedback on all questions is greatly appreciated.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

Non-Malaysian citizens, individual with cognitive dysfunction, pregnant mother, and individuals under 18 years of age.

5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT?

Your contribution is invaluable in providing information on knowledge and attitudes towards hypertension in identifying how adults in Selangor respond to hypertension. This is student research, so no payment will be given to participants. Participants were only selected voluntarily in this study.

(b) TO THE INVESTIGATOR?

Information and data from the results of this study will be used to increase knowledge and assess the attitudes of adults towards hypertension.

6. WHAT ARE THE POSSIBLE RISKS?

It is expected that there will be no risk to participants.

7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?

All the information of the participants will be kept confidential. Only the researcher and the supervisor are allowed to assess the information that is collected.

8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

If you have any inquiries or want to know further development of the research, you can contact me during working hours or my supervisor.

Student researcher,	**Supervisor**,	**Co- Supervisor**,
Azwan Bin Ruslan,	Prof. Madya Dr. Lee Khuan,	Dr. Lim Poh Ying
Department of Nursing and Rehabilitation,	Department of Nursing and Rehabilitation,	Department of Epidemiology,
Faculty of Medicine and Health Sciences,	Faculty of Medicine and Health Sciences,	Faculty of medicine and health sciences,
University Putra Malaysia,	University Putra Malaysia,	University Putra Malaysia,
43400 UPM Serdang,	43400 UPM Serdang,	43400 UPM Serdang,
Selangor, Malaysia	Selangor, Malaysia	Selangor, Malaysia.
Phone: 010-9581318	Phone: +603-8947 2438	Phone: +603-97692950
Email: azwxnrsln@gmail.com	Email: leekhuan@upm.edu..my	Email: pohying_my@upm.edu.my,

9. CONSENT

I …… Identity Card No. ……

address……
……...

……. hereby voluntarily agree to take part in the research stated above *(clinical /drug trial/video recording/ focus group/interview-based/ questionnaire-based).

I have been informed about the nature of the research in terms of methodology, possible adverse

effects and complications (as written in the Respondent's Information Sheet). I understand that I have the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to my identity will remain private and confidential.

I* wish / do not wish to know the results related to my participation in the research

I agree/do not agree that the images/photos/video recordings/voice recordings related to me be used in any form of publication or presentation (if applicable)

* Delete where necessary

Signature ……..…… Signature ……..…….

(Respondent) (Witness)

Date :…….. Name ……. …..

I/C No. :……..

I confirm that I have explained to the respondent the nature and purpose of the above-mentioned research.

Date ……..…… Signature ……..…….

(Researcher)

RISALAH MAKLUMAT PESERTA

1. TAJUK KAJIAN:

PENGETAHUAN DAN SIKAP TERHADAP HIPERTENSI DALAM KALANGAN KOMUNITI ORANG DEWASA DI SELANGOR.

2. PENGENALAN

Kajian ini akan menyiasat pengetahuan dan sikap terhadap hipertensi. hipertensi adalah salah satu daripada faktor risiko penyakit jantung didunia yang menjadi punca utama strok dan serangan jantung. Terdapat banyak laporan kematian dilaporkan di seluruh dunia akibat penyakit jantung. Walau bagaimanapun, masih terdapat pengetahuan dan sikap yang rendah di kalangan orang dewasa terhadap hipertensi.

3. APAKAH YANG PERLU ANDA LAKUKAN?

Soal selidik ini akan diberikan kepada individu dari pelbagai lokasi tertentu di serata Selangor. Soal selidik ini terbahagi kepada 3 bahagian, Bahagian 1, Bahagian 2 dan Bahagian 3. Anda dikehendaki menjawab semua soalan yang disediakan dengan anggaran masa 10-15 minit. Kesudian anda menjawab soal selidik ini sangat dihargai.

4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?

Bukan warganegara Malaysia, pesakit Dis-fungsi kognitif, wanita mengandung, individu yang berusia bawah dari 18 tahun.

5. APAKAH FAEDAH MENYERTAI KAJIAN INI?

a) KEPADA ANDA SEBAGAI PESERTA?

Sumbangan anda tidak ternilai dalam menyediakan maklumat mengenai pengetahuan dan sikap terhadap hipertensi dalam mengenal pasti bagaimana orang dewasa di Selangor bertindak balas terhadap hipertensi. Ini adalah penyelidikan pelajar, jadi tiada bayaran akan diberikan kepada peserta. Peserta hanya dipilih melalui sukarela dalam kajian ini.

b) KEPADA PENYELIDIK?

Maklumat dan data dari hasil kajian ini akan digunakan untuk meningkatkan pengetahuan dan menilai sikap orang dewasa terhadap hipertensi.

6. **ADAKAH IA BERISIKO?**

Adalah dijangkakan bahawa tidak akan ada risiko kepada peserta.

7. **ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?**

Semua maklumat adalah rahsia. Penemuan dari kajian ini hanya akan digunakan untuk tujuan laporan penyelidikan. Hanya penyelidik utama dan jawatankuasa penyeliaan (penyelidik) mempunyai akses penuh kepada penemuan kajian ini.

8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEMASA MENGIKUTI PENYELIDIKAN INI?

Sekiranya anda mempunyai soalan tambahan mengenai kajian ini atau jika anda menganggap anda mempunyai kecederaan yang berkaitan dengan kajian dan anda ingin maklumat mengenai rawatan, sila hubungi:

Penyelidik	**Penyelia**	**Co- Supervisor,**
Azwan bin Ruslan Pelajar Kejururawatan , Jabatan Kejururawatan, Fakulti Perubatan Dan Sains kesihatan, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia Tel No: 0109581318 E-mel: 194849@student.upm.edu.my	Dr. Lee Khuan Pensyarah Kejururawatan, Jabatan Kejururawatan, Fakulti Perubatan Dan Sains Kesihatan, Universiti Putra Malaysia , 43400 UPM Serdang, Selangor, Malaysia. Tel No: 0162040157 E-mel: leekhuan@upm.edu.my	Dr. Lim Poh Ying Jabatan Epidemiologi, Fakulti Perubatan Dan Sains Kesihatan, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia. No. Tel: +603-97692950 E-mail: pohying_my@upm.edu.my

9. PERSETUJUAN

Saya……. no. kad pengenalan

……beralamat……
……

…….. dengan ini bersetuju untuk mengambil bahagian secara sukarela dalam penyelidikan yang tersebut di atas *(kajian klinikal/percubaan ubat-ubatan/rakaman video/kumpulan sasaran/temuduga/ soal selidik).

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi metodologi, risiko dan komplikasi (seperti tertulis pada Helaian Penerangan Responden). Saya memahami bahawa saya berhak menarik diri dari penyelidikan ini pada bila-bila masa tanpa memberi sebarang alasan. Saya juga memahami bahawa sebarang maklumat yang berkaitan identiti saya akan dirahsiakan.

Saya* berminat / tidak berminat untuk mengetahui keputusan kajian yang melibatkan saya.

*potong yang tidak berkenaan

Tandatangan …….…… Tandatangan ……..…….

(Responden) (Saksi)

No. K/P : …….

Tarikh :…… Nama :……..…..

Saya mengesahkan bahawa saya telah menerangkan kepada responden ini sifat dan tujuan penyelidikan yang tersebut di atas.

Tarikh ……..…… Tandatangan ……..…….

(Penyelidik)

Appendix C: Questionnaire

FACULTY OF MEDICINE AND

HEALTH SCIENCES

DEPARTMENT OF NURSING AND

REHABILITATION

NUR4999A: FINAL YEAR PROJECT

(QUESTIONNAIRE)

Research Title:

KNOWLEDGE AND ATTITUDE OF HYPERTENSION AMONG ADULT COMMUNITY IN SELANGOR

Student Name :

Azwan bin

Ruslan Matric no. :

194849

BAHAGIAN A *(PART A)*:
LATAR BELAKANG AM DAN MAKLUMAT AM
(GENERAL BACKGROUND AND GENERAL INFORMATION)

Arahan :Sila jawab semua soalan dengan menandakan (√) atau menulis jawapan yang sesuai.
Instructions: Please answer all questions by marking (√) or write the appropriate answer.

BIL	PERKARA *(ITEM)*	
A1	**Umur** *(Age)*	..... **tahun** *(years old)*
A2	**Jantina** *(Gender)*	□ **Male** *(Lelaki)* □ **Female** *(Perempuan)*
A3	**Kumpulan etnik** *(Ethnicity)*	□ **Melayu** *(Malay)* □ **India** *(Indian)* □ **Cina** *(Chinese)* □ **Lain-lain. Sila nyatakan** *(Others. Please state)* .....
A4	**Tahap pendidikan** *(Education level)*	□ **Sekolah Menengah** *(Secondary school)* □ **Sijil (Politeknik/kolej komuniti/dan lain-lain)** *Certificate (Polytechnic / community college / etc)* □ **Diploma** □ **Ijazah (Sarjana Muda/ Sarjana/Doktor Falsafah)** *(Bachelor / Master / Doctor of Philosophy)*
A5	**Pekerjaan** *(Occupation)*	□ **Tidak bekerja** *(Unemployed)* □ **Kerja sendiri** *(Self-employed)* □ **Kakitangan kerajaan***(Government employees)* □ **Kakitangan swasta** *(Non-government employees)* □ **Pelajar** *(Student)*
A6	**Status perkahwinan** *(Marital Status)*	□ **Berkahwin** *(Married)* □ **Bercerai** *(Divorced)* □ **Balu** *(Widowed)* □ **Lain-lain. Sila nyatakan** *(Others. Please state)* .....
A7	**Adakah anda mempunyai penyakit darah tinggi?** *(Do you have hypertension?)*	□ **Ya** *(Yes)* □ **Tidak** *(No)*

BAHAGIAN B *(PART B)*:

PENGETAHUAN TENTANG HYPERTENSI
(KNOWLEDGE OF HYPERTENSION)

Arahan :Sila jawab semua soalan dengan menandakan (√) pada petak yang sesuai.
Instructions: Please answer all questions by marking (√) in the appropriate box.

		YA (YES)	***TIDAK (NO)***
B1	**Adakah anda tahu berapa bacaan normal tekanan darah?** *(Do you know the normal* blood pressure *reading?)*		
B2	**Adakah anda tahu tentang berapa bacaan tekanan darah tinggi?** ***(Do you know what is the reading of high blood pressure?)***		
B3	**Adakah anda tahu komplikasi apa yang akan terjadi sekiranya tekanan darah tinggi tidak dikawal?** *(Do you know what complications can arise if* blood pressure *is not controlled?)*		
B4	***Adakah tekanan darah tinggi diwarisi?*** *(Is high* blood pressure *hereditable?)*		
B5	**Adakah pengambilan garam secara berlebihan merupakan salah satu penyebab tekanan darah tinggi?** *(Is excessive salt intake one of the risk factors for developing high* blood pressure*?)*		
B6	**Adakah pengambilan minuman keras secara berlebihan merupakan salah satu penyebab tekanan darah tinggi?** *(Is excessive alcohol intake one of the risk factors for developing high* blood pressure*?)*		
B7	**Adakah berat badan berlebihan merupakan salah satu penyebab tekanan darah tinggi?** *(Is being overweight one of the risk factors for developing high* blood pressure*?)*		

B8	**Adakah anda tahu tentang tanda-tanda tekanan darah tinggi?** *(Do you know about the symptoms of high* blood pressure*?)*		

B9	**Adakah anda tahu tentang tanda-tanda tekanan darah rendah?** *(Do you know about the symptoms of low* blood pressure*?)*		
B10	**Adakah anda tahu cara mengawal tekanan darah tinggi?** *(Do you know how high* blood pressure *is managed?)*		
B11	**Adakah anda perlu mengambil ubat darah tinggi sepanjang hayat?** *(Do you have to take antihypertensive medicines for life long?)*		
B12	***Adakah ubat darah tinggi adakalanya merendahkan tekanan darah di bawah paras normal?*** *(Do antihypertensive medicines sometimes lower your* blood pressure *below normal?)*		
B13	**Adakah pemeriksaan tekanan darah secara kerap perlu bagi pesakit darah tinggi?** *(Is regular BP measurement necessary for high* blood pressure *patients?)*		

BAHAGIAN C (PART C):

SIKAP TERHADAP HYPERTENSI
(ATTITUDE TOWARDS HYPERTENSION)

Arahan :Sila jawab semua soalan dengan menandakan (√) pada petak yang sesuai.
Instructions: Please answer all questions by marking (√) in the appropriate box.

		YA (YES)	***TIDAK (NO)***
C1	**Adakah kita patut mengurangkan pengambilan garam untuk mengelak daripada tekanan darah tinggi?** *(Should we reduce salt intake to prevent hypertension?)*		
C2	**Adakah anda fikir pemeriksaan tekanan darah secara kerap adalah penting?** *(Do you think regular checking of* blood pressure *is important?*		

C3	**Adakah kita patut berjumpa dengan pakar perubatan secara kerap?** *(Should we keep in touch with the physician regularly?)*		
C4	**Adakah anda fikir pengambilan ubat secara berterusan amat penting dalam penyakit darah tinggi?** *(Do you think regular medication is important in hypertension?*		
C5	**Adakah kita patut melakukan senaman secara kerap untuk hidup yang lebih sihat?** *(Should we exercise regularly for healthy life?)*		

TERIMA KASIH

THANK YOU

-SOALAN TAMAT-

-END OF QUESTIONS-

Appendx D: Gantt Chart

Project activities	2020			2021								
	Oct	Nov	Dec	Jan	Feb	Mac	April	May	June	July	Aug	Sept
Project implement Plan write up												
Proposal draft preparation												
Ethic application												
Data collection												
Data analysis												
Thesis preparation and discussion												
Final presentation												
Thesis submission												

APPENDIX E: Budget

NO.	ITEM	PRICE PER UNIT (RM)	ESTIMATED COST
1.	Printing document	50	Rm 50.00
2.	Transportation	40	Rm 40.00
3.	Calls and internet data	100	Rm 100.00
4.	Token of appreciation	50	Rm50.00
		Total	Rm240.00

APPENDIX F: Approval Letter from the *Jawatankuasa Etika Untuk Penyelidikan Melibatkan Manusia (JKEUPM)*

Ref. no: UPM/TNCPI/RMC/JKEUPM/1.4.18.2 (JKEUPM)
Date: 26 May 2021

Dear Prof./Dr./Mr./Ms.,

APPLICATION FOR JKEUPM ETHICAL CLEARANCE: APPROVED

With reference to the above, I am pleased to inform you that your application for ethical clearance for the research project entitled 'Knowledge and Attitude of Hypertension among Adult Community in Selangor' has been approved.

Please note that the official letter of approval will be issued as soon as possible. However, the ethical clearance is considered effective from the date of this email, and you may now proceed with your research.

Kindly remind the ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

Researchers should also complete a Study Final Report upon study completion. The form can be obtained from the Ethics Committee for Research Involving Human Subjects (JKEUPM) website (http://www.tncpi.upm.edu.my/faildokumen).

If you have any enquiries, please contact Ms. Nurulhasanah Ishak (03-97691605) or Ms. Nor Ellia Abd Ajis (03-97691244).

Note: Please use this reference number for any transaction.

- JKEUPM-2021-156

Thank you.

Yours faithfully,

Prof. Dr. Zamberi Sekawi
Chair
Ethics Committee for Research Involving Human Subjects
Universiti Putra Malaysia