UNIVERSITI PUTRA MALAYSIA

KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS IN FAMILY MEDICINE CLINIC, HOSPITAL PENGAJAR UNIVERSITI PUTRA MALAYSIA (HPUPM)

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BACHELOR OF NURSING

UNIVERSITI PUTRA MALAYSIA

SEPTEMBER 2022

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MUHAMMAD ALIF BIN MOHD ZAWAWI

Thesis Submitted to the Faculty of Medicine and Health Sciences,

University Putra Malaysia, in Fulfilment of the Requirements for the

Degree of Bachelor in Nursing

2021/2022

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ABSTRACT

KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS IN FAMILY MEDICINE CLINIC, HOSPITAL PENGAJAR UNIVERSITI PUTRA MALAYSIA (HPUPM)

Alif Zawawi, Ruthpackiavathy R. D., Navin,K. D.

Introduction: Uncontrolled hypertension among hypertensive patients is known to be caused by many factors and cause a significant amount of burden towards vascular and renal disorders. Hence, this study was conducted to investigate the association between knowledge, attitude, and practice regarding hypertension among hypertensive patients. ***Objective:*** To determine the level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in FMC, HPUPM. ***Methods:*** A cross-sectional study was carried out among 101 hypertensive patients in FMC, HPUPM. By using SPSS version 27.0, descriptive analysis, and Pearson's Chi-Square Test will be used to evaluate the resulting data. The independent variable is the sociodemographic data, level of knowledge and attitude regarding hypertension while the dependent variable is practice regarding hypertension among hypertensive patients. **Results:** This study found that generally the level of KAP among respondents are high. In addition, there was an association between the level of knowledge and level of attitude with practice, as evidenced by *p*-value = 0.042 and *p*-value = 0.000, respectively. The level of knowledge also were found to be significantly associated with employment status evidenced by *p*-value = 0.008, while the attitude were significantly associated with age (*p*-value = 0.043). For level of practice regarding hypertension, it was significantly associated with gender (*p*-value = 0.043), employment status (*p*-value = 0.012), and years of diagnosed hypertension (*p*-value = 0.043). **Conclusion:** This study showed that the knowledge, attitude, and practice regarding hypertension among hypertensive patients in FMC, HPUPM is high. A therapeutic education and an establishment of support groups and patient associations may needed to enhance the attitude among hypertensive patients in order to improve their management of hypertension.

Keywords: Knowledge, Attitude, Practice (KAP), Hypertension, Hypertensive patients, Inadequate self-management; vascular and renal burden.

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ABSTRAK

PENGETAHUAN, SIKAP, DAN AMALAN BERKAITAN HIPERTENSI DALAM KALANGAN PESAKIT HIPERTENSI DI KLINIK PERUBATAN KELUARGA, HOSPITAL PENGAJAR UNIVERSITI PUTRA MALAYSIA (HPUPM)

Alif Zawawi, Ruthpackiavathy, R. D., Navin,K. D.

Latar Belakang: Hipertensi yang tidak terkawal dalam kalangan pesakit hipertensi berpunca daripada banyak faktor dan peningkatan jumlah pesakit akan menyumbang kepada beban penyakit vaskular dan buah pinggang. Justeru, kajian ini dijalankan untuk mengkaji perkaitan antara pengetahuan, sikap dan amalan mengenai hipertensi dalam kalangan pesakit hipertensi di FMC, HPUPM. **Objektif:** Untuk mengetahui tahap pengetahuan, sikap, dan amalan mengenai hipertensi dalam kalangan pesakit hipertensi di FMC, HPUPM. **Kaedah:** Kajian keratan rentas menggunakan pensampelan secara kebetulan (*convenience sampling)* telah dijalankan dalam kalangan 101 pesakit hipertensi di FMC, HPUPM. Dengan menggunakan SPSS versi 27.0, analisis deskriptif, dan Ujian Pearson's Chi-Square akan digunakan untuk mengkaji perkaitan setiap pemboleh ubah. Pemboleh ubah tidak di manipulasi adalah data sosiodemografi, tahap pengetahuan dan sikap mengenai hipertensi manakala pemboleh ubah di manipulasi adalah amalan mengenai hipertensi dalam kalangan pesakit hipertensi. **Keputusan:** Kajian ini mendapati secara amnya, tahap pengetahuan, sikap dan amalan dalam kalangan responden adalah tinggi. Sebagai tambahan, terdapat perkaitan antara tahap pengetahuan dan tahap sikap dengan amalan, dibuktikan dengan nilai $p = 0.042$ dan nilai $p = 0.000$. Tahap pengetahuan juga didapati mempunyai hubungkaitan yang signifikan dengan status pekerjaan dibuktikan dengan nilai $p = 0.008$, manakala sikap dikaitkan secara signifikan dengan umur (*nilai* $p = 0.043$). Untuk tahap amalan mengenai hipertensi, ia mempunyai hubungkaitan yang signifikan dengan jantina (*p-value = 0.043*), status pekerjaan (*p-value = 0.012*), dan bilangan tahun hipertensi yang didiagnosis (*p-value = 0.043*). **Kesimpulan:** Kajian ini menunjukkan bahawa pengetahuan, sikap dan amalan mengenai hipertensi dalam kalangan pesakit hipertensi di FMC, HPUPM adalah tinggi. Pendidikan terapeutik dan penubuhan kumpulan sokongan dan persatuan pesakit mungkin diperlukan untuk meningkatkan sikap di kalangan pesakit hipertensi sekaligus memperbaiki pengurusan hipertensi mereka.

Kata Kunci: Pengetahuan, sikap dan amalan (PSA), hipertensi, pesakit hipertensi, pengurusan diri yang tidak mencukupi; beban penyakit vaskular dan buah pinggang.

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LIST OF ABBREVIATIONS

BP	: Blood pressure
FMC	: Family Medicine Clinic
HPUPM	: Hospital Pengajar Universiti Putra Malaysia
HPT	: Hypertension
H_o	: Null hypothesis
JKEUPM	: Jawatankuasa Etika Untuk Penyelidikan Melibatkan Manusia
KAP	: Knowledge, attitude, and practice
NHMS	: National Health & Morbidity Survey
UPM	: Universiti Putra Malaysia
WHO	: World Health Organisation

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CHAPTER 1

INTRODUCTION

1.1 Background of study

Globally, around 1.28 billion persons aged 30 to 79 years are affected by hypertension, with the majority (two-thirds) living in low- and middle-income countries (WHO, 2021). In the previous two decades, high-income countries witnessed a moderate decline in hypertension incidence, whereas low- and middle-income nations suffered significant rises (Mills et al., 2020). According to the global health survey report that was published in Lancet by NCD Risk Factor Collaboration (NCD-RisC), (2021), which comprised patient data from 194 countries reported, from 1990 till 2019, it was found that the global prevalence of hypertension has doubled, with most of the increases happening in low-income and middle-income countries. In another research done by Muntner et al. (2018) as cited in Mohammed et al. (2021), global disparities in hypertension are widening, and long-term forecasts estimate that 29 per cent of adults, or 1.56 billion individuals, will have hypertension by 2025.

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Hypertension is one of the most frequent single factors that cause chronic illnesses and health conditions which affect mortality rates in developed and underdeveloped nations (Ezzati et al., 2002; Bromfield & Muntner, 2013 as cited in Buang et al., 2019). It remains one of the most significant risk factors that are responsible for cardiovascular disease, including coronary disease, valvular heart disease, left ventricular hypertrophy; cardiac arrhythmias such as atrial fibrillation, cerebrovascular accident, and renal failure (Williams. et. al, 2018). If hypertension remains untreated, life-threatening complications of hypertension can happen at any time which can affect and damage the vital organs such as the brain, eye, heart, and kidneys (Buang et al., 2019).

Hypertension also is known to be a significant health concern among developing nations that are undergoing an epidemiological shift from communicable to chronic non-communicable diseases (Patnaik et al., 2017). He further explains that together with the rising incidents of individuals who have been diagnosed with hypertension, these poor diagnosis and treatment proportions will transfer an escalating amount of vascular and renal disorders burden to these regions. Furthermore, non-adherence towards therapy for chronically ill patients such as hypertension has been proven to increase the probability of illness's severity, increase health expenses, and diminish the quality of life, even leading to further hospitalizations (Estrada et al., 2020).

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A developing country such as Malaysia needs collaborative efforts to reduce the burden of hypertension towards the nation, particularly the increment of health expenditure and illness severity, to improve the overall quality of life of its citizens. Ministry of health of Malaysia through its Non-Communicable Disease Section from Disease Control Division and other agencies have done various national strategic plan for NCD specifically hypertension prevention program including awareness publications and Salt Reduction Strategy Programme. However, the assessment of the level of knowledge, attitude and practice of the hypertensive population also needs to be done from time to time to evaluate the effectiveness of the current national strategic plan. Thus, the level of knowledge, attitude and practice among hypertensive patients will be an important topic for research that serves as an evaluation for further improvement can be done in the government health campaign.

1.2 Problem statement

In the management of hypertension, knowledge and attitude regarding hypertension play a critical role in altering their lifestyles, including modifiable risk factors to prevent hypertension. Unfortunately, most of the population that are having hypertension are either unaware of their disease or have a poor level of knowledge regarding hypertension (Rashidi et al., 2018). According to Chow et al. (2013), as cited

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in Mohammed et al., (2021), it is estimated globally, only 57% of individuals are aware that they have been diagnosed with hypertension, with 40.6% on antihypertensive drugs, yet only 13.2% projected an adequate management in controlling their blood pressure.

Hypertension and its complications may be managed by altering lifestyle-related risk factors and educating hypertensive individuals about these risk factors (Lugo-Mata et. al., 2017). Hence, the assessment of knowledge, attitudes, and practices (KAP) is an essential component in the management of hypertension by means of identifying the areas of in need further interventions. Unfortunately, less information was found regarding the KAP of hypertension among hypertensive patients in the developing countries, where hypertension has been recognised as a serious health issue (Aubert et. al., 1998 as cited in Patnaik et al., 2017).

In Malaysia, most of the research about knowledge, attitude and practice regarding hypertension was done on the general population instead of the hypertensive population. There is only one research that the authors have known that has similar interest done by Mohammed et al. (2021), on the hypertensive patient. Therefore, this study was designed to fill the research gap and investigate the association between knowledge, attitudes, and practice of hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

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1.3 Significant of the study

Taking into consideration that there is limited literature regarding the levels of knowledge, attitude, and practice (KAP) among hypertensive patients in Malaysia, the authors decided to conduct this study in the hope to be able in providing quantitative evidence about the levels of KAP regarding hypertension among hypertensive patients in FMC, HPUPM. It also helps in establishing an association between the level of knowledge and attitude with practice among hypertensive patients in the prevention and management of hypertension. The findings from this study also will provide baseline information regarding hypertension among hypertensive patients and uncover misunderstandings or misbehaviours about the practice of hypertension. Moreover, the key factors assessed by the KAP studies are not always consistent across the hypertensive groups. Thus, the results from this KAP study may also establish reference values on various health care parameters for use in future assessments of KAP of hypertension among hypertensive patients in Malaysia.

Indirectly, the result from this study may guide healthcare teams including nurses to plan for an appropriate approach to promote patient-centred care such as an improvement and/ or other alternative methods in the health education programs among hypertensive patients. According to Naderi et al. (2012), as cited in Aydin et al. (2021), promoting a healthy lifestyle as early as possible is critical due to the

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possibility for improved outcomes, such as efficiently raising and spreading awareness, earlier identification of potential health risk factors, and properly managing any associated issues, resulting in the reduction of the burden for the nation's healthcare system and its economy.

1.4 Research questions

I. What are the socio-demographic characteristics of hypertensive patients in Family Medicine Clinic, HPUPM.

II. What are the level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

III. What are the relationship between the level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

IV. What are the association between socio-demographic characteristics and the level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

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1.5 Research objectives

1.5.1 General objectives:

To determine the level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

1.5.2 Specific objectives:

I. To assess socio-demographic characteristics of the hypertensive patients in Family Medicine Clinic, HPUPM.

II. To determine the level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

III. To identify the association between level of knowledge, attitude, and practice of hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

IV. To identify the association between socio-demographic characteristics and the level of knowledge, attitude, and practice of hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

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1.6 Research Hypothesis

1.6.1 Null hypothesis

I. H_0 There is no association between level of knowledge, and attitude towards practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

II. H_0 There is no association between socio-demographic characteristics and level of knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

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1.7 Conceptual Framework

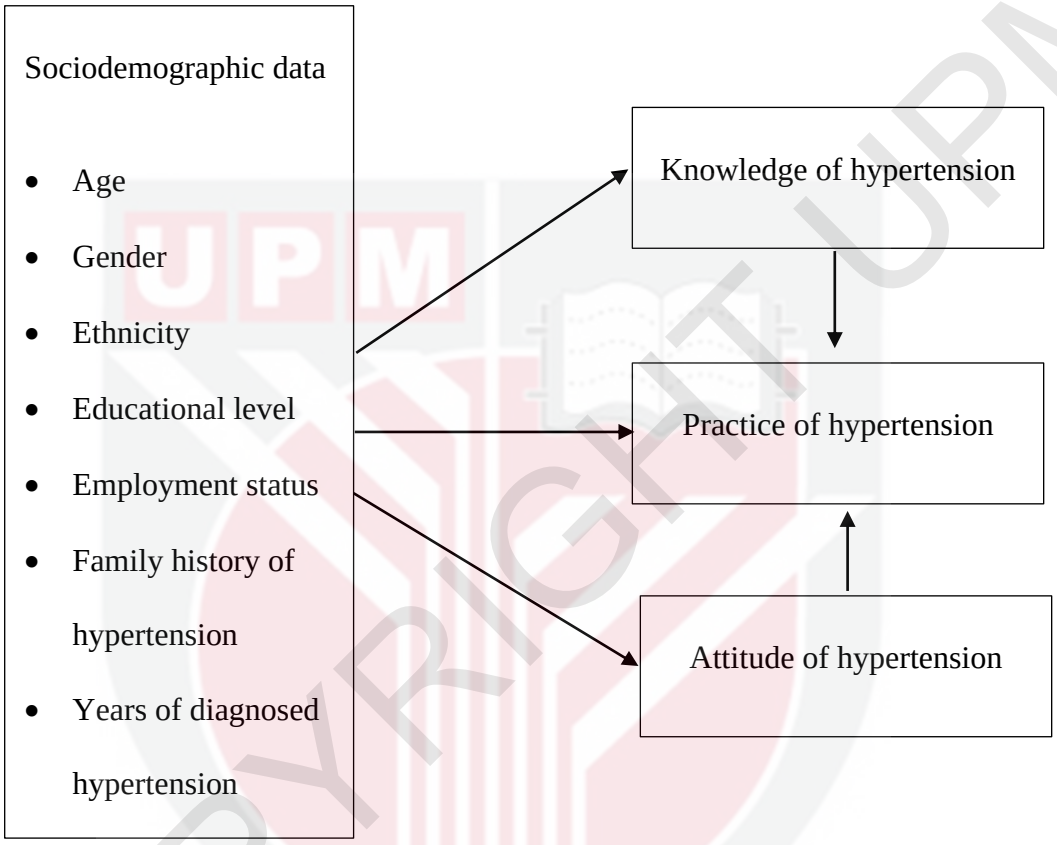

Figure 1: Conceptual Framework

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1.8 Operational definition

Table 1: Operational definition

Terms	Conceptual definition	Operational definition
Hypertension	Hypertension can be defined as blood pressure that is higher than normal. (CDC, 2021).	Hypertension is diagnosed from two distinct days' readings of the systolic blood pressure that are equal to or greater than 140 mmHg and/ or two distinct days measurements of the diastolic blood pressure that are equal to or higher than 90 mmHg.
Socio-demographic	Socio-demographics are the characteristics of a population (Dobronte, 2013).	The socio-demographic provides information about a person's age group, gender, ethnicity, education levels, employment status, family history of hypertension and years of diagnosed hypertension. The data was gathered to draw comparisons between the research population's various subgroups regarding the knowledge, attitude, and practice of hypertension.

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Knowledge of hypertension	Understanding about a topic gained via experience or study, whether known to a single individual or a large group of people (Cambridge University Press, n.d.).	In this study, knowledge is defined as the respondent's understanding of hypertension from the aspect of hypertension risk factors, diseases and conditions related to hypertension and hypertension information sources.
Attitude of hypertension	A feeling or judgment about something or someone, or a manner of conducting oneself (Cambridge University Press, n.d.).	In this study, attitude is defined based on respondents' perception of hypertension regarding medical check-ups, and modifiable risk factors that cause hypertension.
Practice of hypertension	Anything that is often or routinely done, frequently as a result of a custom, tradition, or a habit (Cambridge University Press, n.d.).	In this study, attitude is defined based on respondents' practice regarding hypertension including medical check-ups, and modifiable risk factors that can cause hypertension.

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1.9 Summary

This research intended to investigate the level of knowledge, attitude, and practice of hypertension among hypertensive patients in Family Medicine Clinic, HPUPM by using a cross-sectional study. As most prior studies on knowledge, attitude, and practice of hypertension targeted the general population in public, there was a need to evaluate hypertensive patients regarding their knowledge, attitude, and practice particularly modifiable risk factors that can prevent the progression of hypertension. The outcomes of this research may help numerous stakeholders such as physicians, pharmacists, and nurses to give health education and even hypertensive patients themselves to promote patient-centred care regarding hypertension.

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CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this chapter, the researcher discussed in detail about the knowledge, attitude, and practice regarding hypertension among hypertensive patients. This chapter also covered topics such as the association between knowledge, attitude, and practice regarding hypertension among hypertensive patients as well as the association between sociodemographic characteristics and knowledge, attitude, and practice regarding hypertension among hypertensive patients.

According to WHO (2021), hypertension is diagnosed when two distinct days' readings of the systolic blood pressure are equal to or greater than 140 mmHg and/ or two distinct days' measurements of the diastolic blood pressure are equal to or higher than 90 mmHg. Frequently, the primary cause of the hypertension cases is unknown, in which the hypertension is known as essential hypertension (Buang et al., 2019). Although essential hypertension cannot be cured, blood pressure may be regulated to

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a normal physiological level with medication. Nonetheless, since hypertension seldom causes symptoms, it might go untreated for a long period of time which is why hypertension is often known as a silent killer illness as it is typically discovered by chance during medical check-ups (Buang et al., 2019). Conversely, secondary hypertension or called non-essential hypertension is caused by an underlying and possibly reversible aetiology. It accounts for just a limited percentage (5 to 10%) of hypertensive patients (Charles et al., 2017).

2.1 Hypertension in Malaysia

According to Zaki et al. (2021), the prevalence of hypertension in their study involving 1047 respondents is currently at 49.39%. This number is quite alarming as it may represent nearly half of the country's population and our general national health is worsening over the course of years. However, in the National Health and Morbidity Survey (NHMS) 2019 report by MOH (2019), involving 10,463 respondents, the overall prevalence of hypertension among adults aged 18 years and older is 30.0 % (95 per cent confidence interval). Since the sample size in NHMS 2019 is larger, the report will be more reliable as it provides more precise mean values and any deviations that might distort data in a smaller sample can be detected, with a lower margin of error. From this survey, it is safe to conclude that the prevalence of hypertension in Malaysia

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is slightly decreased from the previous reports which are 30.3% in NHMS 2015 and 32.7% in NHMS 2011.

According to MOH (2019), in Malaysia, the prevalence of high blood pressure was 14.1% among individuals who were not known to have hypertension. In that survey, this respondent was defined as having "undiagnosed hypertension" which they were not known to have hypertension and had a systolic blood pressure equal to or greater than 140 mmHg and/or a diastolic blood pressure equal or greater than 90 mmHg. Many hypertensive individuals may be unaware of it earlier because it is infrequently accompanied by symptoms and is often detected through routine screening or when seeking treatment for an unrelated illness (Ikasaya et al., 2018). Symptoms such as headache (especially at the back of the head), palpitations, light-headedness, vertigo, tinnitus (buzzing or hissing in the ears), dizziness, distorted vision, or fainting episodes occur only in very severe conditions (Longo et al., 2012 as cited in Ikasaya et al., 2018).

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2.2 Knowledge

Knowledge requires comprehension and the acquisition of skills throughout experience and education (Greene et al., 2018). That is why hypertensive patients are often associated with higher knowledge regarding the hypertension because of the experience that they had throughout their life having hypertension including its pathophysiology, early signs and symptoms, risk factors and practice to treat or manage hypertension.

Nevertheless, most of the literature reviews regarding the field of this study describe that the hypertensive patients that have good knowledges regarding hypertension just merely almost reach 50% or slightly lower. According to Bacha & Abera (2019), only 22.3 % of the participants correctly answered all the knowledge questions, while only 26.2% correctly answered 5 out of 6 questions. He conclude that just 48.6% among hypertensive patients had a solid understanding regarding hypertension.

This is supported by Estrada et al. (2020), in her research to assess hypertensive patients' knowledges, she emphasises that only 42.3% of respondents aware that a person is diagnosed with hypertension when their blood pressure exceeds 140/90

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mmHg; 35.8% were unaware of hypertension is a life-long courses of action; and only 42.3% knew the objectives of blood pressure readings. In the section related to the complications of hypertension, the biggest lack of knowledges among hypertensive patients regarding hypertension is it can cause complications on the kidney, followed by complications on the eyes. She further explained that diabetes was the least recognised risk factor for hypertension, followed by smoking, and high cholesterol levels. Her findings on the treatment knowledges are 41.4% of patients indicated that hypertension can be treated alone with medication which explains there are some patients presented with uncontrolled blood pressure. Meanwhile, three-quarters of these patients believed they would be unable to change or quit their medication after their blood pressure was under control. Additionally, some patients assume that once their blood pressure is under control, they may lower or discontinue their medication, which can have a negative effect on their health. Despite of that, she also found that most of the patients had a high level of knowledges on the diet and lifestyle changes. She then concludes that to have better control of their blood pressure, hypertensive patients must have firm knowledges of their disease, as well as be aware of the benefits of their medication adherence, which eventually, contribute to a longer and higher quality of life. The findings collected from this study indicate that knowledge regarding the condition itself remains low which indicate that patients may not be familiar with the disease.

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In Malaysia, there is only one research that assess hypertensive patient done by Mohammed et al. (2021), indicated that participants among population diagnosed with hypertension in Kuala Lumpur and rural areas in Selangor typically had a reasonable degree of knowledge regarding hypertension, in which 51.3% of them had a moderate understanding regarding hypertension.

2.3 Attitude

According to Mohammed et al. (2021), most of the population diagnosed with hypertension in Kuala Lumpur and rural areas in Selangor have a fair attitude, and the remains expressed as poor attitude followed by only a minority of favourable attitude towards hypertension. Contrary with research done by Kurnia et al. (2020), most of hypertensive patients in rural areas in Indonesia had a favourable attitude toward hypertension treatment, despite some of them are still in the "fair" group. But she further explains that there are still some respondents claimed that they pay less attention to frequent blood pressure readings, medication adherence, and regular medical consultations since they are not used to interacting with health professionals and would not happen if they did not take the medicine on a regular basis. Respondents are still unable to discontinue these behaviours, and as a result, they often have a rebound of hypertension.

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A research done by Bacha & Abera (2019), in Addis Ababa suggesting that only 47.8 % of the hypertensive patients show a positive attitude toward hypertension management. Participants' attitudes toward hypertension management were extremely positive for salt restriction, as manifested by 91.9 % of respondents. In contrast, research done in rural areas of Indonesia recorded hypertensive patients have a negative attitude toward hypertension control by continually eating foods rich in salt, smoking, drinking coffee, and attending rare activities such as gymnastics events (Kurnia et al., 2020).

According to Paczkowska et al. (2021), hypertensive patients place a high value on being informed on the disease's causes and effects, as well as the disease's fundamental core. It must be emphasised that, as many writers concur, patients showed a considerable interest in learning more (good attitude) about the condition despite having chronic arterial hypertension and being under the medical care of a highly specialised cardiac clinic. Different attitude in hypertensive individuals are normal since it is impacted by numerous variables such as the source of information acquired especially through mass media either printed and electronic media, and health education initiatives (Kurnia et al., 2020). She further explains that the amount of time individual has been suffering from hypertension can also influence their point of views toward hypertensive therapy. According to the research, most hypertensive individuals had been diagnosed for more than one-year survival and it can be conclude that the longer respondents were experiencing hypertension, the better attitudes in the

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management of hypertension in which receiving treatment for hypertension (Kurnia et al., 2020).

2.4 Practice

According to Chia et al. (2017); Ministry of Health of Malaysia (2015) as cited in Chia et al. (2021), several Asian countries have high treatment rates (69.7% - 81%), but only less than half of patients achieved in controlling blood pressure. In Malaysia, among 83.2% of hypertensive patients in Malaysia that received treatment, only 37.4% achieved in controlling hypertension, while in many other low- and middle-income Asian countries, the rates of control are significantly lower, with several below 20 per cent (Vrijens B. et al., 2008; Hill MN. et al., 2011; Ramli A. et al., 2012; Yusoff NHM. et al., 2020 as cited in Chia et al., 2021). Hence, it can be implicated that hypertensive patients still are lacking in controlling hypertension which raises interest in whether they are having good or bad practices to manage or treat hypertension.

According to research done in Addis Ababa, by Bacha & Abera (2019), only 8.1% of hypertensive patients correctly answered all questions in the practice category. He further concluded that only 39.5% of hypertensive patients had an excellent practice of hypertension management. A study by Patnaik et al. (2017), found that half of the hypertension patients were sedentary and only 13.7 per cent engaged in regular physical activity. Around 41% of research participants had never used tobacco in any

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form, whereas 22.5% were regular smokers. Additionally, a study in Zambia by Ikasaya et al. (2018), found that only 37.8% reduced their salt consumption and consult their health care professionals often. The only good practice that the hypertensive patients did are adherence to hypertensive drugs and frequent follow-up for hypertension. In terms of compliance with antihypertensive medications, patients in Zambia showed significantly good practice with only 27.8% regularly missed a dosage, whereas 53.3% and 18.9 per cent rarely and never missed a dose, respectively. Contrary to the research done by Chia et al. (2021), they describe that even though hypertension guidelines emphasise the importance of addressing treatment adherence around the world, including in Malaysia, only slightly more than half of the hypertensive patients adhere towards medication. The available data from Van De Vijver et al. (2012); Tran and Sojobi (2020) as cited in Aydin et al. (2021), also indicate the benefits of risk-reducing treatments may wear off with time, and the persons may have difficulty adhering to intervention-induced lifestyle modifications. Besides, the hypertensive patients also continually eat foods rich in salt, smoke, drink coffee, and attend rare activities such as gymnastics events (Kurnia et al., 2020). Chia et al. (2021); Rashidi et al. (2018), also concluded that self-management practices such as adhering to prescribed drug regimens, quitting smoking, reduction of salt intake, increasing physical activity level, and follow-up appointment have been shown to be critical for hypertensive individuals in managing hypertension.

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2.5 Association between knowledge and attitude with practice

According to Paczkowska et al. (2021), regular self-monitoring blood pressure at home was reported by 98.9% of patients with excellent knowledge, 17.4 per cent among hypertensive patients with moderate knowledge, and none among hypertensive patients with low knowledge. In terms of salt limitation, 99.6 per cent of patients with high knowledge, 53.3 per cent of patients with moderate knowledge, and only 3.9 per cent of hypertensive patients with low knowledge have restricted the intake of salt. The detected changes were statistically significant.

The attitude of people with hypertension has an impact on the compliance of blood pressure control and diet adherence; the more positive the patient's attitude, the better the hypertension management (Tarigan AR et. al, 2018 as cited in (Kurnia et al., 2020). Meanwhile, research done by Paczkowska et al. (2021), shown that the hypertensive patients with lower attitude do not trust their doctors and often dismiss the need for therapy if there are no symptoms. As a result of their lack in participation, the chances in lowering their overall risk of cardiovascular illnesses including hypertension will reduces up to 40%.

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According to Malik et al. (2014), as cited in Mohammed et al. (2021), inadequate knowledge and awareness regarding hypertension may contribute to poor adherence to hypertensive drugs, contributing to the high rates of uncontrolled blood pressure. Research in Italy done by Fanelli et al. (2021), also shown that hypertensive patients or individual with uncontrolled hypertension that undergoing treatment through the pharmacy evaluation had a significantly lower level of knowledge. This association can be confirmed from the findings of the study done by Paczkowska et al. (2021), in which he describes that the patient's level of knowledge on arterial hypertension had a substantial influence on compliance towards the treatment. Hypertensive patients with high knowledge (99.6 %) took hypertensive medications as prescribed more often than patients with average knowledge (53.3 %) or poor knowledge (3.9 %).

Among the causes of fail to comply physicians' prescriptions, the most frequently stated causes are those directly connected to the patient, such as a lack of knowledge about one's condition and disease, a lack of knowledge about the nature of a chronic disease, insufficient knowledge about the possible consequences of untreated hypertension, and demotivation in continuing treatment and the obligation of lifestyle modification (Mohammed et al., 2020). The difference between knowledge and practise may be related to the fact that they are aware that in order to treat high blood pressure, they should lower their weight via diet and increase physical activity, but they may not be aware of the best approaches to do so (Rashidi et al., 2018).

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Numerous research also has highlighted several challenges to hypertension care, including patient attitude and cultural preferences, availability of medicine and other resources, simple reasons for negligence, and noncompliance with special treatment (Karakurt & Kasikci, 2012; Thomas et al., 2011 as cited in Calano et al., 2019). This is supported by Chia et al. (2021) and Rashidi et al. (2018), who describes that self-management practice such as adhering to prescribed drug regimens, quitting smoking, reduction of salt intake, increasing physical activity level, and follow-up appointment have been shown to be critical for hypertensive individuals in managing hypertension.

2.6 Association between sociodemographic and KAP

Knowledge requires comprehension and the acquisition of skills throughout experience and education (Greene et al., 2018). That is why hypertensive patients are often associated with higher knowledge regarding hypertension because they had experienced it throughout their life and are familiar with its pathophysiology, early signs and symptoms, risk factors and practice to treat or manage hypertension.

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Different attitudes among hypertensive individuals are normal since it is impacted by numerous variables such as the source of information acquired especially through mass media either printed and electronic media, and health education initiatives (Kurnia et al., 2020). They further explain that the amount of time an individual has been suffering from hypertension can also influence their point of view toward hypertensive therapy. Most hypertensive individuals that had been diagnosed for more than one year of survival have a favourable attitude and the longer respondents were experiencing hypertension, the better their attitudes toward the management of hypertension in which receiving treatment for hypertension (Kurnia et al., 2020).

According to NCD-RisC (2021), due to the population increasing and ageing, the absolute number of individuals with hypertension aged 30–79 years old has more than doubled from 331 million women and 317 million men in 1990 to 626 million women and 652 million men in 2019. The research from Fanelli et al., 2021, revealed the worst performance among participants with a lower education level and an older age, indicating sociodemographic disparities and a possible exacerbating factor for health care inequalities.

This is supported by Bacha & Abera (2019), which found out that participants' educational level was directly affecting their knowledge on hypertension; those with

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primary education had 4.3 times more knowledge, the participant who finished high school had 12 times more knowledge; undergraduate and postgraduate had about 16 times more knowledge than those with no formal education. When compared to rural dwellers, self-identified urban residents had 11 times the knowledge. Another factor influencing participants' understanding of hypertension was their age. The age group of 36-45 years old had 3.6 times more knowledge than the age group of 76-85 years old. Male participants also were found to have 2.5 times more knowledge of hypertension than female ones.

After controlling for age, gender, and educational level, urban residents were shown to have 7.4 times the chances of having strong awareness of hypertension as rural residents. Similarly, after controlling for all other factors, the probability of having strong knowledge increases with educational level, although multiple regression analysis revealed that age and gender were not related to the participants' knowledge status.

In his univariate analysis, gender influences attitude toward hypertension management, with male individuals having double the chances of having a positive attitude toward hypertension control. In the multivariable study, all factors except age were linked with attitude. When all other characteristics were controlled for, being male, urban resident, and having formal education had double the chances in projecting

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a positive attitude about hypertension than being female, rural resident, and having no formal education, respectively.

Furthermore, numerous factors were discovered in his research that can influence participants' practise of hypertension management. Males had a 1.76-fold greater chance of having excellent practise than females. Being an urban resident increased the likelihood of having excellent practise by thrice when compared to rural dwellers. Educational status was another factor identified to influence hypertension individuals' practice. In univariate analysis, those who finished high school had a fourfold increase in the likelihood of having excellent practise, while undergraduate and postgraduate participants had a 3.8-fold increase in the likelihood of exhibit a good practise, compared to those with no formal education. Males had about twice the probability of conducting excellent practise as females. In comparison to rural residents, urban residents had a threefold increased likelihood of engaging in excellent practise. The likelihood of engaging in excellent practise rose with educational level; people with no formal education engage in ineffective hypertension treatment.

He further concludes that patients with hypertension in his research who were older, female, and had a lower degree of education were more adherent to blood pressure therapy. Thus, creating, implementing, and evaluating intervention

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programmes to enhance adherence should not be "one-size-fits-all," but should take gender into account when making treatment-related decisions (Chia et al., 2021)

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CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discussed in detail the research methodology that has been used in this study to determine the association between socio-demographic characteristics, knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

3.1 Research design

The research design for this study was a cross-sectional study by using the survey method to determine the level of knowledge, attitude, and practice of hypertension among hypertensive patients in Family Medicine Clinic, HPUPM. This study involved quantitative research data which can be defined as research based on traditional scientific methods that generate numerical data and typically aim to establish causal correlations or associations between two or more variables using statistical methods to assess the strength and significance of the relationships (Apuke,

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2017). According to Almeida et al. (2017), a survey is a type of research method that involves the collecting of data directly from a respondent by use of a set of questionnaires structured in a predetermined sequence. A survey is one of the most used quantitative research methodologies as it allows the collection of data on a particular phenomenon by formulating questions that signify the opinion, attitudes, and behaviours of a group of people. Surveys provide several noteworthy advantages which are the method is excellent representativeness for the whole population and it is low-cost in comparison to other choices. Thus, the cross-sectional study specifically the survey method was selected to determine knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.

3.2 Study Location

This study was carried out at the Family Medicine Clinic in Hospital Pengajar Universiti Putra Malaysia (HPUPM), which is a teaching hospital for UPM since it can provide a greater number of hypertensive patients who are attending follow up or treatments.

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3.3 Sampling frame

3.3.1 Study population

The population selected were the hypertensive patients who were attending medical treatment or follow up at the Family Medicine Clinic in the HPUPM.

3.3.2 Study Duration

The duration of the study lasted around 11 months (November 2021 to September 2022). While the estimated duration for data collection was between 3 months from 27/06/2022 till 29/08/2022.

3.4 Participants criteria

3.4.1 Inclusion criteria

I. Participants must be adults ≥ 18 years old.
II. Patients who were on at least 1 type of antihypertensive medication

3.4.2 Exclusion criteria

I. Pregnant women.
II. Individuals with mental health issues.

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3.5 Sample size estimation

In the National Health and Morbidity Survey (NHMS) 2019 report by MOH (2019), the overall prevalence of hypertension among adults aged 18 years and older is 30.0 % (95 % confidence interval). By using Cochran's formula, the sample size needed was calculated. Cochran's formula, introduced in 1977, is used to estimate sample size when the population is infinite:

Table 3.1: Cochran's sample size formula

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where,

$n0$ = Cochran's sample size recommendation

Z = Z selected critical value of the desired level of confidence

p = estimated prevalence/ proportion of an attribute that represents the population

q = 1 – p

e = desired level of precision (or margin of error)

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Since the degree of variability of this study population was unknown, hence, the recommended sample size was calculated using a parameter that assumes the maximum variability. The estimated prevalence of proportion will be 30% (p = 0.3), 95% confidence level and the Z value will be 1.96. The level of precision selected is 10% (e = 0.10) which was based on the research by Haron et. al (2021), about Knowledge, Attitude and Practice (KAP) of Malay Elderly on Salt Intake and Its Relationship With Blood Pressure. This is also supported by Suresh, K., & Chandrashekara, S. (2012), in which he explains the general rule in survey research in which the acceptable margins of error should be between 5% to 10%.

Thus,

Cochran's sample size recommendation,

$$n_0 = \frac{Z^2 PQ}{e^2}$$

$$n_0 = \frac{(1.96)^2(0.3)(0.7)}{(0.10)^2}$$

$$n_0 \approx 81$$

The total sample size added with a 25% adjusted no-response rate of 20 is 101. Hence, 101 hypertensive patients that meet the eligibility criteria from the Family Medicine Clinic in HPUPM were selected to participate as a representative of the population to generate reliable statistical findings for the study.

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3.6 Sampling method

In this study, a non-probability sampling method, which is convenience sampling was used to distribute the questionnaire to the selected respondents that fulfil the inclusion criteria. This sampling method often chooses clinical cases or participants available in that area such as a hospital, and from medical records database which is useful in generating analysis to represent the group of hypertensive patients. It is commonly used by the researcher because it is less expensive, less time demanding, and more straightforward than other sampling methods (Stratton, 2021). Thus, a convenience sampling method will be used in this study to approach the hypertensive patients from the Family Medicine Clinic in HPUPM, Family Medicine Clinic, HPUPM.

3.7 Research instruments

3.7.1 Questionnaire

The series of questionnaires were adopted and modified from different studies conducted by Paczkowska et al. (2021) and Ikasaya et al. (2018), that were used to measure the Knowledge, Attitude, and Practice (KAP) regarding hypertension with additional practice questionnaires by Cheong et al. (2015), to assess patient's compliance to medication, appointment, and salt intake.

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3.7.2 Scoring System

Section A: Demographic data consists of socio-demographic characteristics of subjects such as age group, gender, ethnicity, educational level, employment status, family history of hypertension and years of diagnosed hypertension.

Section B: Questionnaires consist of 18 statements on knowledge regarding hypertension that were adapted and modified from a validated questionnaire by Paczkowska et al. (2021). The answer choice was 'Yes', and 'No' 'Unsure'. The scoring method is calculated by giving a score of one for a correct answer and zero for an incorrect and unsure answer. The total score is 18 which will be converted into a percentage. Using McDonald's standard of learning outcome measured criteria, the level of knowledge had been categorized into; bad (<69%), fair (70-79), good (80-100).

Section C: Consists of a questionnaire to evaluate attitudes regarding hypertension among respondents. The questionnaire consists of 7 statements that were adapted and modified by Ikasaya et al. (2018). The answer choice was 'Yes', and 'No' 'Unsure'. The scoring method is calculated by giving a score of one for a correct answer and zero for an incorrect and unsure answer.

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The total score is 7 which will be converted into a percentage. Using McDonald's standard of learning outcome measured criteria, the level of attitude had been categorized into; bad (<69%), fair (70-79), good (80-100).

Section D: Consists of a questionnaire to evaluate practice towards blood pressure among respondents. The questionnaire consists of 4 statements by Ikasaya et al. (2018), with the Likert scale answer choices of 'All of the time', 'Most of the time', 'Some of the time', and 'Less than once a month/ None of the time'. The scoring method is calculated by giving scores ranging from 4 to 16 according to the positive practice of hypertension. Additional questions were added with the Malay version of the Hill-Bone compliance to high blood pressure therapy scale by Cheong et al. (2015). The scale has 14 items with a four-point response format: (1) all the time, (2) most of time, (3) some of time, and (4) never. Items are assumed to be additive, and, when summed, the total score ranges from 14 (minimum) to 56 (maximum). The overall score for this section is summed up, with the scores ranging maximum of 68 which will be converted into a percentage. Using McDonald's standard of learning outcome measured criteria, the level of practice had been categorized into; bad (<69%), fair (70-79), good (80-100).

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3.8 Reliability and validity

Since the questionnaires were adapted and modified from different questionnaires, the content of these finalised questionnaires was validated by 2 primary care physicians, one public health specialist, one from the nursing field (supervisor) and one statistician. Then, a pilot study were conducted among 21 hypertensive patients (20% from the recommended sample size of this study) to verify its reliability. Cronbach's alpha and validation were carried out to measure the validity and reliability as well as the internal consistency of the questionnaire that was used in this study. The Cronbach Alpha value for KAP were 0.740, 0.649 and 0.796, respectively. However, the overall Cronbach Alpha were 0.787. The general rule of thumb is that Cronbach's alpha of 0.70 and above is considered good, 0.80 and above is considered better, and 0.90 and above is considered excellent (Rachel, n.d.). Hence, the questionnaire were reliable to be used in this study.

3.9 Data collection

The data collection was carried out right after the researcher received the ethical approval for the study. During any medical treatment and follow up of hypertensive patients at the Family Medicine Clinic in HPUPM, a self-administered questionnaire

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was distributed by the researcher. Respondents were informed and explained about the study to gain their cooperation. Next, the researcher secures the respondent's permission to enrol in this study by asking them to sign on respondent information sheet (RIS) and informed consent form (ICF). The respondents were next required to complete a series of questionnaires, which took around ten to fifteen minutes to complete. Respondents were welcome to ask the researcher any questions they may not understand, and clarification was provided. To avoid asking the same responder to answer the questionnaire repeatedly, the questionnaire was collected on the same shift. The researcher went through the questionnaire to ensure that the respondents answered all the questions before archiving it for data analysis. The responder simply must answer once, and there is no follow-up process after that.

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3.10 Study flowchart

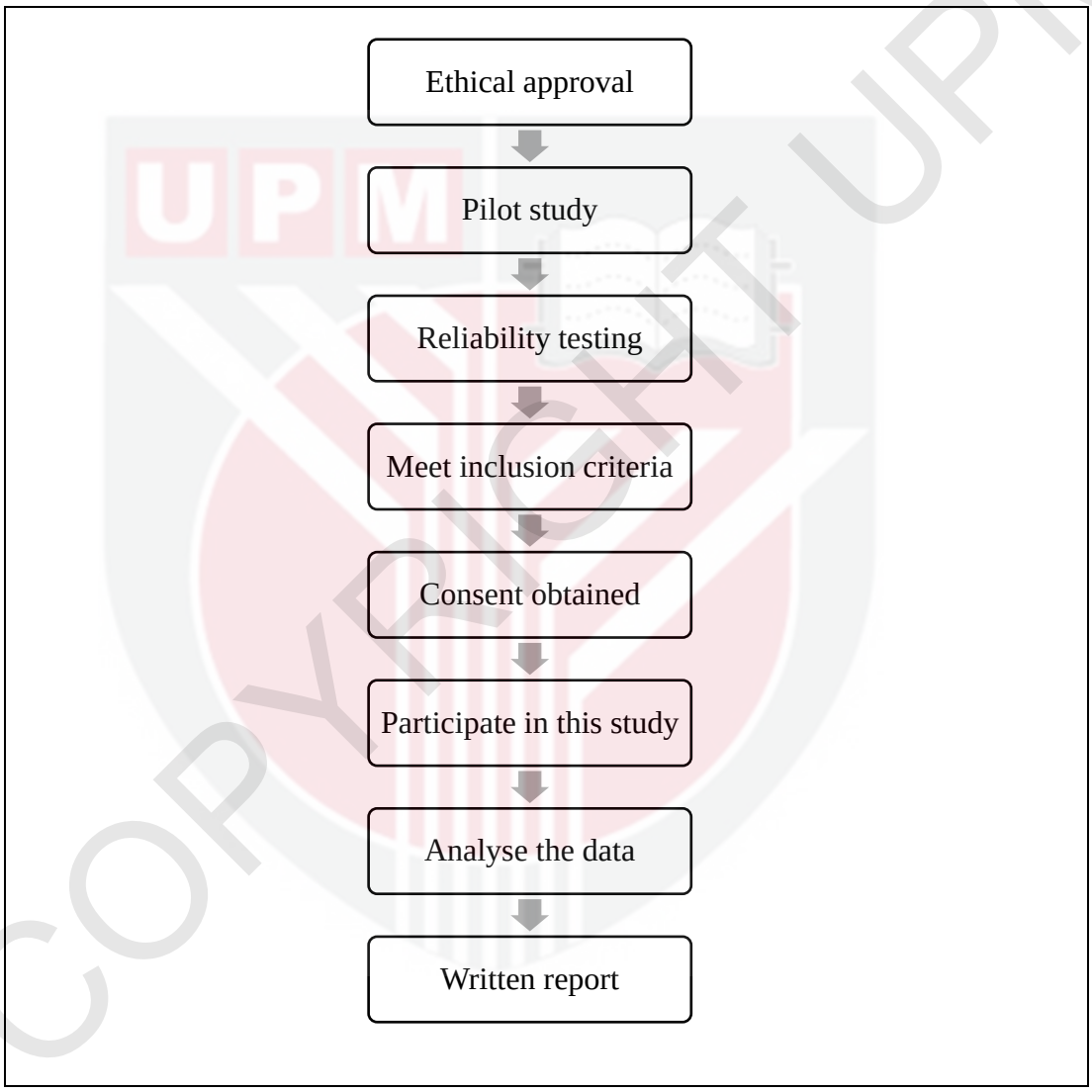

Figure 3.1: Study flowchart of Knowledge, Awareness, and Practice regarding Hypertension among Hypertensive Patients in Family Medicine Clinic, HPUPM

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3.11 Data analysis

The data was analysed by using Statistical Packages for Social Sciences (SPSS) version 27.0. The appropriate statistical procedure was used depending on the study objectives. Descriptive data then were expressed as frequency and percentage unless otherwise stated. For inferential analysis, all categorical data were analysed using the Chi-square test. The *p-value* obtained from the inferential analysis helped to determine the significance of the results from the study. *P-value* ≤ 0.05 was considered statically significant that indicating the existence of the association between dependent and independent variables. The details can be refer to Table 3.3 and Table 3.4.

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Table 3.3: Descriptive analysis

DESCRIPTIVE DATA			
Objectives	**Variables**	**Type of variables**	**Statistical Measurement**
To determine the demographic data of the hypertensive patients in Family Medicine Clinic, HPUPM.	Age group	Categorical	Frequency and percentage
	Gender		
	Ethnicity		
	Educational level		
	Family history of hypertension		
	Years of diagnosed hypertension		
To assess knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Knowledge of hypertension	Categorical	Frequency and percentage

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To assess attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Attitude towards hypertension	Categorical	Frequency and percentage
To assess practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Practice towards hypertension	Categorical	Frequency and percentage

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Table 3.4: Inferential analysis

INFERENTIAL DATA			
Objectives	**Dependent Variables**	**Independent Variables**	**Statistical Measurement**
To determine the association between the level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Practice toward hypertension (categorical)	Knowledge on hypertension (categorical)	Pearson Chi-Square
To determine the association between the attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Practice toward hypertension (categorical)	Attitude on hypertension (categorical)	Pearson Chi-Square

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To determine the association between demographic data and knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Knowledge of hypertension (categorical)	Age group Gender Ethnicity Education level Employment status Family history of hypertension Years of diagnosed hypertension	Pearson Chi-Square
To determine the association between demographic data and attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Attitude towards hypertension (categorical)	Age group Gender Ethnicity Education level Employment status Family history of hypertension Years of diagnosed hypertension	Pearson Chi-Square
To determine the association between demographic data and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM.	Practice towards hypertension (categorical)	Age group Gender Ethnicity Education level Employment status Family history of hypertension Years of diagnosed hypertension	Pearson Chi-Square

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3.12 Expected outcome

The expected outcome was there is an association between, sociodemographic, knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM. Besides, the hypertensive patients with a high level of knowledge and attitude regarding hypertension were expected to have more positive practices towards hypertension.

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3.13 Gantt Chart

Table 3.5: Gantt Chart

Project	2021		2022								
	NOV	DEC	JAN	FEB	MAC	APRIL	MAY	JUNE	JULY	AUG	SEPT
Discussion with supervisor regarding the research title											
Identify the research problem											
Review the articles for literature review											
Formulating appropriate questionnaire											
Proposal presentation											
Submit proposal											
Ethical approval											
Conduct a pilot study											
Conduct the research and data collection											
Data analysis and discussion											
Thesis presentation											
Submit the research report											

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3.14 Ethical consideration

Ethical approval of this study was obtained from the Jawatankuasa Etika Untuk Penyelidikan Melibatkan Manusia (JKEUPM). Next, the JKEUPM approval letter was used to gain permission from Clinical Research University (CRU) HPUPM, to obtain permission to conduct this study in the Family Medicine Clinic, HPUPM.

All respondents were required to fill and sign on respondent information sheet (RIS) and informed consent form (ICF). All information received from respondents is kept strictly confidential and used exclusively for this research. All physical copies of questionnaires, with a signed respondent information sheet (RIS) and informed consent form (ICF), were stored under lock and key, with only the research team and necessary authorities having access to them. The surveys will be kept at the main supervisor office of the Department of Nursing and Rehabilitation at UPM for three years before being disposed of. Any reports or publications resulting from the research will be published in a manner that maintains the anonymity of the respondents and does not include any identifying elements. Respondents will be recognised only by their serial number. The results are only accessible to the principal investigator and the supervising committee (researchers).

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If the study is being recommended for publication, permission from the Director of HPUPM will be obtained before publication. If it is published in the journal form, the article link will be shared at the participating location which is HPUPM. On the other hand, if the study is published in the form of a written thesis, the abstract of this study will be shared with HPUPM to notify the participants regarding the result. A sharing session through presentation or conference at the participating location will be planned if it is needed. No matter how the study will be published or presented, the personal information of the subjects will not be revealed.

3.15 Conflict of interest

The researchers declare they have no conflict of interest.

3.16 Honorarium and incentives to respondents

There was no payment given to the respondent as this participation is voluntary.

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CHAPTER 4

RESULT

4.0 Introduction

This chapter presents the results of the study that aimed to determine the association between socio-demographic characteristics, level of knowledge, attitude, and practice of hypertension among hypertensive patients in Family Medicine Clinic, HPUPM. All the data had been analysed using IBM SPSS Statistics 27.0 with a cut-off point for statistical significance level set at 0.05, and the confidence level of 95%. Each section of KAP has been converted into a percentage and by using McDonald's standard of learning outcome measured criteria, the level of KAP had been categorized into; bad (<69%), fair (70-79), good (80-100). Results were considered significant associated when the *p*-value was equal or less than 0.05.

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4.1 Response rate

A total of 101 respondents participated in the survey, with all responses valid to be used and analysed. The sample size estimation in this study was 101 respondents, hence a 100% response rate was obtained in this study. The response rate was possibly acquired due to the researcher was on-site and able to control the respondents' engagement throughout the data collection.

4.2 Socio-demographic data among respondents

The respondents of this study consisted of 101 hypertensive patients, where the majority of the respondents are from the age group 50 years and above (53.5%, n=54), and male respondents (52.5%, n=53). This study also was dominated by Malay (90.1%, n=91), and respondents graduated from tertiary education (86.1%, n=87). Besides, most of the respondents were government/ non-government employees (53.5%, n=54), have a family history of hypertension (75.2%, n=76), and were diagnosed for 5 years and above (43.6%, n=44). The details regarding the distribution of respondents' socio-demographic characteristics are reported in Table 4.2.1.

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Table 4.2.1 Distribution frequency and percentage of socio-demographic data among respondents

Variables	n	%
Age group		
18-29 years old	2	2.0%
30-49 years old	45	44.6%
50 years old and above	54	53.5%
Gender		
Female	48	47.5%
Male	53	52.5%
Ethnicity		
Malay	91	90.1%
Chinese	5	5.0%
India	5	5.0%
Highest education qualification		
Primary Education	1	1.0%
Secondary Education	13	12.9%
Tertiary Education	87	86.1%
Employment status		
Government/ Non-government	54	53.5%
Self-employed	3	3.0%
Retired	31	30.7%
Unemployed	13	12.9%
Family history of hypertension		
Yes	76	75.2%
No	25	24.8%
Years of diagnosed hypertension		
Less than 1 year	35	34.7%
1-2 years	11	10.9%
3-4 years	11	10.9%
5 years and above	44	43.6%

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4.3 Level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

This study showed that the respondents generally had a high level of knowledge, in which 51.5% (n=52) of them had a good knowledge followed by fair knowledge (25.7%, n=26) and poor knowledge (22.8%, n=23) regarding hypertension as shown in Table 4.3.1.

The questionnaire consists of 18 questions with yes, no, and not sure options in which the correct answers were given 1 score and 0 for incorrect and not sure answers, with a total correct score is 18. Based on the result, 6 (5.9%) out of 101 respondents answered all the questions correctly and only 1 (1.0%) out of 101 respondents scored the lowest which is 7.

Almost all the respondents answered correctly (96.7%, n=95) the questions "Can stress lead to hypertension?" and "Is hypertension can cause eyesight problems?". In addition, the questions "Can blood pressure be decreased without taking drugs?" and "Can the prescribed drug be discontinued when normal blood pressure values are achieved during pharmacological treatment of hypertension?" recorded the least number of respondents who answered correctly which contributed to 52.5% (n=53).

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The distribution of answers to questions in knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM is shown in Table 4.3.2.

Table 4.3.1 Distribution level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	N=101, (%)		
	Poor	Fair	Good
Knowledge	23 (22.8%)	26 (25.7%)	52 (51.5%)

Table 4.3.2 Distribution of answers to questions in knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	**N=101, (%)**	
	Correct	**Incorrect**
1. What blood pressure values are indicative of hypertension?	75 (74.3%)	26 (25.7%)
2. How to measure blood pressure correctly?	86 (85.1%)	15 (14.9%)
3. Can regular blood pressure monitoring at home contribute to better efficacy of hypertension treatment?	87 (86.1%)	14 (13.9%)
4. Does family history of hypertension increase risk for developing high BP?	87 (86.1%)	14 (13.9%)

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Table 4.3.2 Distribution of answers to questions in knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	N=101, (%)	
	Correct	Incorrect
5. Can hypertension present no symptoms at the beginning for a long time?	69 (68.3%)	32 (31.7%)
6. Excessive salt intake is one of the risk factors for developing hypertension?	94 (93.1%)	7 (6.9%)
7. Does being obese/ overweight one of the risk factors of hypertension?	91 (90.1%)	10 (9.9%)
8. Are diabetes and high cholesterol levels increase the risk of hypertension?	94 (93.1%)	7 (6.9%)
9. Does smoking increase the risk of hypertension?	82 (81.2%)	19 (18.8%)
10. Does excessive alcohol consumption increase the risk of hypertension?	80 (79.2%)	21 (20.8%)
11. Can stress lead to hypertension?	96 (95.0%)	5 (5.0%)
12. Engaging in physical activity regularly can help to reduce hypertension?	91 (90.1%)	10 (9.9%)
13. Can blood pressure be decreased without taking drugs?	53 (52.5%)	48 (47.5%)
14. Can the prescribed drug be discontinued when normal blood pressure values are achieved during pharmacological treatment of hypertension?	53 (52.5%)	48 (47.5%)
15. Is hypertension one of the main causes of heart attack or stroke?	95 (94.1%)	6 (5.9%)
16. Is hypertension can cause of kidney problems?	64 (63.4%)	37 (36.6%)
17. Is hypertension can cause eyesight problems?	96 (95.0%)	5 (5.0%)
18. Does effective treatment of hypertension reduce the risk of complications of hypertension?	91 (90.1%)	10 (9.9%)

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4.4 Level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

As illustrated in Table 4.4.1, a total of 85 (84.84%) respondents showed a positive attitude, followed by a fair attitude (8.9%, n=9) and 7 (6.9) who had a poor attitude regarding hypertension.

The attitude section consists of 7 statements with yes, no, and not sure options in which the positive answers were given 1 score and 0 for negative and not sure answers, with a total correct score is 7. Based on the result, 63 (62.4%) out of 101 respondents answered all the questions positively with only 1 (1.0%) out of 101 respondents scored the lowest which is 2.

The statement “I’m worry about my health if my blood pressure is high” was found to be the highest positive response (97.0%, n=98) in terms of the attitude. Meanwhile, the statement that had the most negative response was “Do you think hypertensive medication is important in managing/ treat hypertension” (19.8%, n=20). The distribution of answers to the statements in attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM is shown in Table 4.3.2.

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Table 4.4.1 Distribution level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	N=101, (%)		
	Poor	Fair	Good
Attitude	7 (6.9%)	9 (8.9%)	85 (84.84.2%)

Table 4.4.2 Distribution of answers to the statements in attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	N=101, (%)	
	Positive	Negative
1. I must check my blood pressure regularly even if there are no symptoms	91 (90.1%)	10 (9.9%)
2. I'm worry about my health if my blood pressure is high	98 (97.0%)	3 (3.0%)
3. I will go for routine medical check-up to check for my blood pressure	92 (91.1%)	9 (8.9%)
4. I should reduce salt intake to prevent/ manage hypertension	94 (93.1%)	7 (6.9%)
5. I should reduce cholesterol food intake to prevent/ manage hypertension	93 (92.1%)	8 (7.9%)
6. I should exercise regularly (at least 3 times a week) to manage/ treat hypertension	95 (94.1%)	6 (5.9%)
7. Do you think hypertensive medication is important in managing/ treat hypertension	81 (80.2%)	20 (19.8%)

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4.5 Practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

The results of this study showed that the respondents generally had a high level of knowledge, in which 51.5% (n=52) of them had a good knowledge followed by fair knowledge (25.7%, n=26) and poor knowledge (22.8%, n=23) regarding hypertension as shown in Table 4.5.1.

The questions consist of 18 questions, each with 4-Likert scale options. The score was given based on the positive scale of practice regarding hypertension with a maximum score was 72. From the result, the majority of the respondents scored 60 out of 72 marks (15.8%, n=16) with the highest score was 67 and the lowest was 13, each contributed to 2% (n=2) of the total respondents respectively.

The responses towards questions “How often do you consume alcohol?” and “How often do you smoke?” were extremely positive with the number of respondents selected “Less than once a month/ None”, each contributed to 94.1% (n=95) and 89.1% (n=90) respectively. Other than that, 31 (30.7) out of 101 respondents consume fatty food weekly, followed by daily (30.7%, n=31), monthly (16.8%, n=17) and less than once a month/ none (4.0%, n=4). Next, 34 (33.7%) out of 101 respondents

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perform physical exercise daily, less than half of the days in the weeks (30.7, n=31), less than once a week (18.8%, n=19), and most on the days in a week (16.8%, n=17). The results also include the frequency and percentage of the respondents towards the questions of the Malay version of the Hill-Bone compliance to high blood pressure therapy scale. The distribution of answers to questions in practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM can be referred in Table 4.5.2.

Table 4.5.2 Distribution level of practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	**N=101, (%)**		
	Poor	**Fair**	**Good**
Practice	8 (7.9%)	27 (26.7%)	66 (65.3%)

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Table 4.5.2 Distribution of answer to questions in practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	Respondents, n (%)			
	Daily	**Weekly**	**Monthly**	**Less than once a month/ None**
1. How often do you consume fatty food?	31 (30.7%)	49 (48.5%)	17 (16.8%)	4 (4.0%)
2. How often do you consume alcohol?	0 (0.0%)	1 (1.0%)	5 (5.0%)	95 (94.1%)
3. How often do you smoke?	7 (6.9%)	4 (4.0%)	0 (0.0%)	90 (89.1%)
	Daily	**Most on the days in a week**	**Less than half of the days in the weeks**	**Less than once a week**
4. How often do you perform physical exercise?	34 (33.7%)	17 (16.8%)	31 (30.7%)	19 (18.8%)

Malay version of the Hill-Bone compliance to high blood pressure therapy scale

	All of the time	**Most of the time**	**Some of the time**	**None of the time**
5. How often do you forget to take your blood pressure medicine?	1 (1.0%)	14 (13.9%)	37 (36.6%)	49 (48.5%)
6. How often do you decide NOT to take your blood pressure medicine?	1 (1.0%)	12 (11.9%)	19 (18.8%)	69 (68.3%)
7. How often do you eat salty food?	6 (5.9%)	42 (41.6%)	46 (45.5%)	7 (6.9%)

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Malay version of the Hill-Bone compliance to high blood pressure therapy scale

	All of the time	Most of the time	Some of the time	None of the time
8. How often do you add salt, 'kicap' or sauce on your food before you eat it?	5 (5.0%)	31 (30.7%)	51 (50.5%)	14 (13.9%)
9. How often do you eat fast food (KFC, McDonald, eat out)?	1 (1.0%)	24 (23.8%)	71 (70.3%)	5 (5.0%)
10. How often do you make the next appointment before you leave the clinic?	40 (39.6%)	40 (39.6%)	14 (13.9%)	7 (6.9%)
11. How often do you miss your follow up appointments?	2 (2.0%)	3 (3.0%)	27 (26.7%)	69 (68.3%)
12. How often do you forget to get your repeat medication?	10 (9.9%)	5 (5.0%)	34 (33.7%)	52 (51.5%)
13. How often do you run out of high blood pressure pills?	5 (5.0%)	4 (4.0%)	29 (28.7%)	63 (62.4%)
14. How often do you skip your high blood pressure medicine before you go to the doctor?	2 (2.0%)	8 (7.9%)	19 (18.8%)	72 (71.3%)
15. How often do you miss taking your high blood pressure pills when you feel better?	3 (3.0%)	16 (15.8%)	25 (24.8%)	57 (56.4%)
16. How often do you miss taking your high blood pressure pills when you feel sick?	1 (1.0%)	1 (1.0%)	30 (29.7%)	69 (68.3%)
17. How often do you take someone else's high blood pressure pills?	2 (2.0%)	5 (5.0%)	11 (10.9%)	83 (82.2%)
18. How often do you miss taking your high blood pressure pills when you are careless?	0 (0%)	4 (4.0%)	52 (51.5%)	45 (44.6%)

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4.6 Association between the level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Based on Table 4.6.1, Pearson's Chi-Squared Analysis showed that there was an association between the level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM as evidenced by *p*-value = 0.042. Hence, null hypothesis H0, "There is no association between level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM" was rejected. The details of the distribution frequency and percentage between the level of knowledge and practice are provided in Table 4.6.2.

Table 4.6.1 Pearson Chi-Square Test between the level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	Level of practice regarding hypertension among hypertensive patients	
	χ^2	*p*-value
Level of knowledge regarding hypertension among hypertensive patients	9.899	0.042

*$\chi 2$ shows Pearson Chi-Square value and *p*-value value ≤ 0.05 indicates statistical significance.

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Table 4.6.2 Distribution frequency and percentage between the level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	Practice Level (N=101, %)		
Knowledge Level	**Poor Practice**	**Fair Practice**	**Good Practice**
Poor Knowledge	5 (21.7%)	4 (17.4%)	14 (60.9%)
Fair Knowledge	1 (3.8%)	10 (38.5%)	15 (57.7%)
Good Knowledge	2 (3.8%)	13 (25.0%)	37 (71.2%)

4.7 Association between the level of attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Based on Table 4.7.1, Pearson's Chi-Squared Analysis showed that there was an association between the level of attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM as evidenced by *p*-value = 0.000. Hence, null hypothesis H0, "There is no association between level attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM" was rejected. The details of the distribution frequency and percentage between the level of attitude and practice are provided in Table 4.6.2.

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Table 4.7.1 Pearson Chi-Square Test between the level of attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	Level of practice regarding hypertension among hypertensive patients	
	$\chi 2$	*p*-value
Level of attitude regarding hypertension among hypertensive patients	51.936	0.000

*$\chi 2$ shows Pearson Chi-Square value and *p*-value value ≤ 0.05 indicates statistical significance.

Table 4.7.2 Distribution frequency and percentage between the level of attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables	Practice Level (N=101, %)		
Attitude Level	Poor Practice	Fair Practice	Good Practice
Poor Attitude	0 (0.0%)	7 (100.0%)	0 (0.0%)
Fair Attitude	5 (55.6%)	2 (22.2%)	2 (22.2%)
Good Attitude	3 (3.5%)	18 (21.2%)	64 7(5.3%)

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4.8 Association between socio-demographic characteristics and the level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Based on Table 4.8, Pearson's Chi-Squared Analysis showed that there was no association between the sociodemographic characteristics and the level of knowledge regarding hypertension, except for the employment status as evidenced by *p*-value = 0.008. Hence, the null hypothesis H0, "There is no association between socio-demographic characteristics and level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM" was rejected. The details of the distribution frequency and percentage between the sociodemographic characteristics and the level of knowledge regarding hypertension are provided in Table 4.8.

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Table 4.8 Pearson Chi-Square Test between socio-demographic characteristics and the level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables		Level of knowledge (N=101, %)			
		Poor	Fair	Good	$\chi 2$; *p*-value
Age (years)	18- 29 years	0 (0.0%)	0 (0.0%)	2 (100.0%)	6.457; 0.167
	30- 49 years	8 (17.8%)	9 (20.0%)	28 (62.2%)	
	50 years and above	15 (27.8%)	17 (31.5%)	22 (40.7%)	
Gender	Female	9 (18.8%)	14 (29.2%)	25 (52.1%)	1.073; 0.585
	Male	14 (26.4%)	12 (22.6%)	27 (50.9%)	
Ethnicity	Malay	20 (22.0%)	25 (27.5%)	46 (50.5%)	3.084; 0.544
	Chinese	1 (20.0%)	0 (0.0%)	4 (80.0%)	
	Indian	2 (40.0%)	1 (20.0%)	2 (40.0%)	
	Others	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Highest education qualification	Primary education	0 (0.0%)	0 (0.0%)	1 (100.0%)	4.489; 0.344
	Secondary education	5 (38.5%)	1 (7.7%)	7 (53.8%)	
	Tertiary education	18 (20.7%)	25 (28.7%)	44 (50.6%)	
Employment	Government/ Non-government employee	11 (20.4%)	9 (16.7%)	34 (63.0%)	17.303; 0.008
	Self-employee	0 (0.0%)	0 (0.0%)	3 (100.0%)	
	Retired	7 (22.6%)	15 (48.4%)	9 (29.0%)	
	Unemployed	5 (38.5%)	2 (15.4%)	6 (46.2%)	
	Student	0 (0.0%)	0 (0.0%)	0 (0.0%)	

*$\chi 2$ shows Pearson Chi-Square value and p-value value ≤ 0.05 indicates statistical significance.

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Table 4.8 Pearson Chi-Square Test between socio-demographic characteristics and the level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables		Level of knowledge (N=101, %)			
		Poor	Fair	Good	$\chi 2$; *p*-value
Family history of hypertension	Yes	13 (17.1%)	20 (26.3%)	43 (56.6%)	5.917; 0.052
	No	10 (40.0%)	6 (24.0%)	9 (36.0%)	
Years of diagnosed hypertension	≤ 1 year	13 (37.1%)	7 (20.0%)	15 (42.9%)	8.261; 0.220
	1-2 years	2 (18.2%)	2 (18.2%)	7 (63.6%)	
	3- 4 years	2 (18.2%)	2 (18.2%)	7 (63.6%)	
	≥ 5 years	6 (3.6%)	15 (34.1%)	23 (52.3%)	

*$\chi 2$ shows Pearson Chi-Square value and p-value value ≤ 0.05 indicates statistical significance.

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4.9 Association between socio-demographic characteristics and the attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Based on Table 4.9, Pearson's Chi-Squared Analysis showed that there was no association between the sociodemographic characteristics and the level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM, except for age as evidenced by *p*-value = 0.043. Hence, the null hypothesis H0, "There is no association between socio-demographic characteristics and level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM" was rejected. The details of the distribution frequency and percentage between the sociodemographic characteristics and the level of attitude regarding hypertension are provided in Table 4.9.

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Table 4.9 Distribution association between socio-demographic characteristics and the level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables		Level of attitude (N=101, %)			
		Poor	Fair	Good	$\chi 2$; *p*-value
Age (years)	18- 29 years	0 (0.0%)	0 (0.0%)	2 (100.0%)	9.858; 0.043
	30- 49 years	7 (15.6%)	3 (6.7%)	35 (77.8%)	
	50 years and above	0 (0.0%)	6 (11.1%)	48 (88.9%)	
Gender	Female	4 (8.3%)	3 (6.3%)	41 (85.4%)	1.004; 0.605
	Male	3 (95.7%)	6 (11.3%)	44 (83.0%)	
Ethnicity	Malay	6 (6.6%)	9 (9.9%)	76 (83.5%)	2.747; 0.601
	Chinese	0 (0.0%)	0 (0.0%)	5 (100.0%)	
	Indian	1 (20.0%)	0 (0.0%)	4 (80.0%)	
	Others	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Highest education qualification	Primary education	0 (0.0%)	0 (0.0%)	1 (100.0%)	0.230; 0.994
	Secondary education	1 (7.7%)	1 (7.7%)	11 (84.6%)	
	Tertiary education	6 (6.9%)	8 (9.2%)	73 (83.9%)	
Employment	Government/ Non-government employee	6 (11.1%)	8 (14.8%)	40 (74.1%)	9.822; 0.132
	Self-employee	0 (0.0%)	0 (0.0%)	3 (100.0%)	
	Retired	0 (0.0%)	1 (3.2%)	30 (96.8%)	
	Unemployed	1 (7.7%)	0 (0.0%)	12 (92.3%)	
	Student	0 (0.0%)	0 (0.0%)	0 (0.0%)	

*$\chi 2$ shows Pearson Chi-Square value and p-value value ≤ 0.05 indicates statistical significance.

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Table 4.9 Distribution association between socio-demographic characteristics and the level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables		Level of attitude (N=101, %)			
		Poor	Fair	Good	$\chi 2$; *p*-value
Family history of hypertension	Yes	6 (7.9%)	9 (11.8%)	61 (80.3%)	3.926; 0.140
	No	1 (4.0%)	0 (0.0%)	24 (96.0%)	
Years of diagnosed hypertension	≤ 1 year	4 (11.4%)	5 (14.3%)	26 7(4.3%)	7.437; 0.282
	1-2 years	0 (0.0%)	2 (18.2%)	9 (81.8%)	
	3- 4 years	1 (9.1%)	1 (9.1%)	9 (81.8%)	
	≥ 5 years	2 (4.5%)	1 (2.3%)	41 (93.2%)	

*$\chi 2$ shows Pearson Chi-Square value and p-value value ≤ 0.05 indicates statistical significance.

4.10 Association between socio-demographic characteristics and the practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Based on Table 4.10, Pearson's Chi-Squared Analysis showed that there was an association between the sociodemographic characteristics and the level of practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM which were gender (*p*-value = 0.043), employment status (*p*-value = 0.012), and years of diagnosed hypertension (*p*-value = 0.043). Hence, the null hypothesis H0, "There is no association between socio-demographic characteristics and level of

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practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM" was rejected. The details of the distribution frequency and percentage between the sociodemographic characteristics and the level of practice regarding hypertension are provided in Table 4.10.

Table 4.10 Distribution association between socio-demographic characteristics and the level of practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables		**Level of practice (%)**			
		Poor	**Fair**	**Good**	**χ2; *p*-value**
Age (years)	18- 29 years	0 0.0%	1 (50.0%	1 (50.0%)	6.237; 0.182
	30- 49 years	3 (6.7%)	17 (37.8%)	25 (55.6%)	
	50 years and above	5 (9.3%)	9 (16.7%)	40 (74.1%)	
Gender	Female	1 (2.1%)	17 (35.4%)	30 (62.5%)	6.629; 0.036
	Male	7 (13.2%)	10 (18.9%	36 (67.9%)	
Ethnicity	Malay	8 (8.8%)	24 (26.4%)	59 (64.8%)	1.487; 0.829
	Chinese	0 (0.0%)	2 (40.0%)	3 (60.0%)	
	Indian	0 (0.0%)	1 (20.0%)	4 (80.0%)	
	Others	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Highest education qualification	Primary education	0 (0.0%)	1 (100.0%)	0 (0.0%)	6.584; 0.160
	Secondary education	0 (0.0%)	6 (46.2%)	7 (53.8%)	
	Tertiary education	8 (9.2%)	20 (23.0%)	59 (67.8%)	

*$\chi 2$ shows Pearson Chi-Square value and p-value value ≤ 0.05 indicates statistical significance.

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Table 4.10 Distribution association between socio-demographic characteristics and the level of practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Variables		Level of practice (%)			
		Poor	Fair	Good	$\chi 2$; *p*-value
Employment	Government/ Non-government employee	8 (14.8%	15 (27.8%	31 (57.4%	16.325; 0.012
	Self-employee	0 (0.0%)	1 (33.3%)	2 (66.7%)	
	Retired	0 (0.0%)	4 (12.9%	27 (87.1%	
	Unemployed	0 (0.0%)	7 (53.8%)	6 (46.2%)	
	Student	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Family history of hypertension	Yes	5 (6.6%)	20 (26.3%)	51 (67.1%	0.863; 0.649
	No	3 (12.0%)	7 (28.0%)	15 (60.0%)	
Years of diagnosed hypertension	≤ 1 year	7 (20.0%)	8 (22.9%)	20 57.1%)	16.175; 0.013
	1-2 years	1 (9.1%)	5 (45.5%)	5 (45.5%)	
	3- 4 years	0 (0.0%)	1 (9.1%)	10 (90.9%)	
	≥ 5 years	0 (0.0%)	13 (29.5%)	31 (70.5%	

*$\chi 2$ shows Pearson Chi-Square value and p-value value ≤ 0.05 indicates statistical significance.

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CHAPTER 5

DISCUSSION

5.1 Socio-demographic data among respondents

Regarding sociodemographic characteristics of the respondents, the study revealed that the majority of the respondents were from the age group 50 years and above (53.5%, n=54) with Malay ethnic (90.1%, n=91) were dominant which was similar to the study done by Mohammed et al. (2021) at the rural areas in Selangor. Both genders were almost equally distributed with male respondents (52.5%, n=53) were slightly over half of the total respondents, similar to the findings from India by Patnaik et al. (2017) and Das et al. (2020).

Besides, most of the respondents in this study graduated from tertiary education (86.1%, n=87). These findings were the opposite of most prior studies done in Ethiopia by Bacha and Abera (2019), Sri Lanka by Ralapanawa et al. (2020), Benin by Nadège et. al (2020) and Zambia by Ikasaya et al (2018) where the majority of them did not even had tertiary education. Instead, the results can be related with the study by

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Mohammed et al. (2021) where the majority of hypertensive patients in rural areas had completed tertiary education.

Next, over half of the respondents were government/ non-government employees (53.5%, n=54), which was the opposite of the study in Sri Lanka by Ralapanawa et al. (2020). Among 101 respondents, 75.2% (n=76) have a family history of hypertension and 43.6% (n=44) had been diagnosed hypertension for 5 years and above (43.6%, n=44). These findings were related to the research in Zambia and Sri Lanka by Ikasaya et al (2018) and Ralapanawa et al. (2020), where the majority of the respondents were diagnosed with hypertension for 5 years and above, however, both of the studies were contrary to the results from research in Ethiopia by Bacha and Abera (2019), where the majority of the respondents had been diagnosed with hypertension for below than 5 years .

5.2 Knowledge

Our research has found that generally, the patient's knowledge regarding hypertension was considered high, in which 51.5% (n=52) of them had a good knowledge followed by fair knowledge (25.7%, n=26) and poor knowledge (22.8%,

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n=23) regarding hypertension. Contrary to the previous studies, the results obtained in Ethiopia, Spain, India and Benin concluded that the level of hypertension knowledge regarding hypertension among hypertensive patients remains low, respectively (Bacha & Abera, 2019; Estrada et al., 2020; Das et al., 2020; Nadège et al., 2020), which were just nearly reach 50% or slightly lower.

It was found that more than half of the respondents knew that hypertension can present no symptoms for a long of time and pharmacological treatment should be continue even if the blood pressure was normal. This were related with the research in Zambia by Ikasaya et al. (2018) in which even though the level of knowledge was moderate, more than half of the respondents could say that hypertension may be asymptomatic and that antihypertensive medication should be taken for life long.

Despite of that, other several studies showed corresponding results regarding the level of knowledge of hypertension. A study among hypertensive patients in a province of Sri Lanka showed an overall satisfactory knowledge about complications of hypertension and the importance of adherence to close follow-up (Ralapanawa et al., 2020). In both of the studies, most of the respondents knew that hypertension could cause a heart attack or stroke. Other studies that were done by Alharbi et al. (2017) and Sinuraya et al. (2017), also showed that more than half of the hypertensive patients recorded a good knowledge about hypertension in Saudi and Indonesia.

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Other than that, the findings of this study were opposite from the study done in Kuala Lumpur and rural areas in Selangor by Mohammed et al. (2021), which showed that the majority of hypertensive patients had moderate knowledge regarding hypertension. These differences in findings across research may be related to various factors such as sociodemographic characteristics that will be explained in the association section.

5.3 Attitude

The findings from this study reveal that the respondents showed an extremely positive attitude, with 85 (84.84%) out of 101 respondents demonstrated a good attitude followed by a fair attitude (8.9%, n=9) and 7 (6.9%) who had a poor attitude regarding hypertension. These findings were corresponding with the results in Zambia, Benin and the rural areas in Indonesia where these studies showed that more than 80% of respondents achieved good attitude, respectively (Ikasaya et al., 2018; Nadège et al., 2020; Kurnia et al., 2020).

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In addition, a the study done by Mohammed et al. (2021), only a minority of the hypertensive population in Kuala Lumpur and rural areas in Selangor have a favourable attitude towards hypertension. A study done in India and Ethiopia by Patnaik et al. (2017); Das et al. (2020) and Bacha & Abera (2019) also showed that the hypertensive had a poor attitude regarding hypertension compare to the findings of this study.

Nevertheless, the majority of the respondents in this study had demonstrated a positive attitude regarding the potential risks of consuming excessive salt intake, high cholesterol intake and the importance of regular exercise (at least 3 times a week) in order to managing or treating hypertension. The findings were corresponded with a study done by Shrestha et al. (2021) in India, which they reported a good attitude within the respondents in their study view that atleast 30 minutes of physical exercise for more than 3 times per week is important in hypertension management. However, there was still a concern regarding 19.8% (n=20) of the respondents in our study that showed a negative attitude by disregarding the importance of medication in managing or treating hypertension.

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5.4 Practice

The results of this study showed that the respondents generally had a high level of practice, in which 65.3% (n=66) of them had a good practice followed by fair practice 26.7% (n=27) and poor practice 7.9% (n=8) regarding hypertension. These findings were opposite from research in Ethiopia, Benin and Lebanon in which they recorded significantly poor level of practice among their respondents (Nadège et al., 2020; Bacha & Abera, 2019; Machaalani et al., 2022).

We found that there were lower proportion of smoking 10.9% (n=11) and sedentary lifestyle (18.8%, n=19) in our study compared to a study in India by Patnaik et al. (2017), where 22.5% of the participants were regular smokers and half of the respondents were sedentary. However, we also found that there were still respondents that consume salty foods all of the time (5.9%, n=6) and most of the time (41.6%, n=42). The frequency of this findings was higher if compared to Das et al. (2020), that recorded the majority of the respondents were practicing salt moderation.

Our results also corresponded with research in Zambia and India by Ikasaya et al. (2018) and Das et al. (2020), in which most of the respondents in our studies were adhere towards hypertensive drugs (71.3, n=72) and never missed a follow-up

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appointment (68.3%, n=69). Besides, most of the patients demonstrated good practice by doing regular exercise (81.2%) if compared to in India by Patnaik et al. (2017) and Das et al. (2020). Nevertheless, these comparisons were vague since there were differences in our methodology and data differences.

5.5 Association between level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

The results from this study showed that there was an association between the level of knowledge and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM through analysis of Pearson's Chi-Squared Test as evidenced by *p*-value = 0.042.

This study were corresponded with research in Zambia by Ikasaya et al. (2018) in which they found a statistically significantly association was found between knowledge about hypertension and practices towards hypertension at p-value = 0.023. This implies that knowledge leads to beneficial practices that promote a healthy lifestyle and prevents hypertension from developed.

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Contrary with the research in Lebanon by Machaalani et al. (2022) and Iran, in which Rashidi et al. (2018) found that along with their knowledge regarding obesity was good, the practice of increasing the physical activity level was not impressive and they did not put their knowledge into practice. They also explained that the differences between knowledge and practise may be attributed to the fact that the hypertensive patients were knowledgeable that reducing their weight through diet and increasing physical activity is necessary for managing high blood pressure, but they may not have sufficient knowledge regarding the appropriate ways to accomplishing this goal.

5.6 Association between the attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Pearson's Chi-Squared Analysis showed that there was an association between the level of attitude and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM as evidenced by p-value = 0.000. These findings were corresponded with research in Lebanon and Ethiopia by Machaalani et al. (2022) and Bogale et al. (2020), in which they found that the attitude and practice were positively correlated. Other than that, this results also related with research in Iran by Rashidi et al. (2017) that showed a statistical significant between attitude and practice with p- value < 0.001.

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Hence, Nadège et al. (2020) had proposed a therapeutic education and an establishment of support groups and patient associations to enhance hypertensive patients' attitude in order to improve their management of hypertension.

5.7 Association between socio-demographic characteristics and the level of knowledge regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

By using Pearson Chi-Square Test, we found that there was no association between sociodemographic with level of knowledge except for the employment status as evidenced by p-value = 0.008. This was unexpected as most of the prior studies found that there were association between other sociodemographic characteristics and level of knowledge.

The studies in Ethiopia and India by Bacha & Abera, (2019) and Das et al. (2020) found that educational level was related with better knowledge of hypertension among hypertensive patients. However, our findings was opposite in which we did not found any association between education qualification and level of knowledge, as evidenced by p-value = 0.344. However, there was study that corresponded with our

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study by Nadège et al. (2020), in which they found that there were no association between all sociodemographic characteristics and level of knowledge of their respondents.

Nevertheless, we wanted to highlight that the employment status was strongly related with higher level of knowledge in our study. The respondents who were working (government/ non-government employee) were substantially more knowledgeable about hypertension than those did not working. Notoatmodjo (2014) as cited in Kurnia et al. (2020), stated that jobs are often involved an interaction with other people in which it can indirectly provide opportunities for information exchanges. In addition, according to CDC (2018), the workplace offers several opportunities for improving physical and mental health by reducing illness and injury. Culture in working places may promotes healthy habits such as improvements in diet and physical exercise, establish policies that promote health to improve the health knowledge and assist employees in obtaining the required health tests, vaccines, and follow-up treatment.

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5.9 Association between socio-demographic characteristics and the attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Pearson's Chi-Squared Analysis showed that there was no association between the sociodemographic characteristics and the level of attitude regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM, except for age as evidenced by p-value = 0.043. This supported by Kurnia et al. (2020), in which most hypertensive individuals that had been diagnosed for more than one year of survival have a favourable attitude and the longer respondents were experiencing hypertension, the better their attitudes toward the management of hypertension in which receiving treatment for hypertension.

The differences in attitude among hypertensive patients regarding hypertension were normal since it was impacted by several variables, including the respondent's source of information from the mass media (print and electronic) and health education initiatives (Ainiyah and Wijayanti, 2019, as cited in Kurnia et al., 2020). Health education may impact the attitudes of respondents if the information provided was clear, concise, and easily comprehended (Sunarmi and Afrida, 2019). The more often health information was provided, the less challenging it was to manage hypertension.

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5.10 Association between socio-demographic characteristics and the practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM

Pearson's Chi-Squared Analysis showed that there was an association between the sociodemographic characteristics and the level of practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM which were gender (p-value = 0.043), employment status (p-value = 0.012), and years of diagnosed hypertension (p-value = 0.043). Our findings were corresponding with a study in Ethiopia by Bacha & Abera (2019) that found gender was associated with level of practice in which males had higher good practice compared to females. Unfortunately, our findings on education qualification did not similar with them, in which we found there was no association between those two variables.

In addition, the association between employment and level of practice may attribute to the workplace or work environment. According to CDC (2018), the workplace offers several opportunities for improving physical and mental health by reducing illness and injury. Culture in working places may promotes healthy habits such as improvements in diet and physical exercise, establish policies that promote health and assist employees in obtaining the required health tests, vaccines, and follow-up treatment. For example, patients from government sector or statutory bodies have

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an opportunities to received treatment and follow up ain HPUPM by using Guarantee Letter provided.

We also discovered that the duration of hypertension had an effect on hypertension practice. The respondents who diagnosed with hypertension for at least five years had better practice than those with hypertension for less than five years. However, a study in Iran by Rashidi et al. (2018) found that there was not significant association between duration of diagnosed hypertension and practice.

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CHAPTER 6

LIMITATION AND RECOMMENDATION

6.1 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. Hence, there are several limitations identified during the research period that will be discussed in this chapter.

6.2 Limitation

In this study, the total estimated sample size that was calculated was small compared to other studies. The values and data in a smaller sample size were sensitive towards deviation, together with a low margin of error selected, in which it can cause our study to be less reliable. The sample of the population also were drawn from only one clinic which was Family Medicine Clinic, HPUPM. Thus, the findings from this

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study may not represent the whole population of hypertensive patients in Family Medicine Clinic, HPUPM and should be used cautiously. We also acknowledge that multiple co-morbidities can affect the attitude of patients. Hence, assessment of the patients' co-morbidities in sociodemographic characteristics should be done to analyses how multiple co-morbidities can affect KAP of hypertensive patients.

Other than that, we also had difficulties in comparing the findings with other studies. Even though our studies found that the knowledge, attitude and practice among hypertensive patients in Family Medicine Clinic, HPUPM are high, we firmly believed that the numbers were insufficient except for attitudes which achieved more than 80%. Nevertheless, it is well understood that these could be due to using different approaches and tools in evaluating the level of knowledge, attitude, and practice of the respondents.

6.3 Recommendation

In terms of research, we suggest to change the study design into stratified random sampling and higher total sample size to strengthen the reliability of this research topic. Next, we recommend future researcher to balancing the ethnicity

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involve in their research to decreases the cultural bias. We also acknowledge that multiple co-morbidities can affect the attitude of patients. Hence, assessment of the patients' co-morbidities in sociodemographic characteristics should be done to analyses how multiple co-morbidities can affect KAP of hypertensive patients.

Supported by our findings, there may be a need it the provisions by nurses, who may play an essential role as patient educators. Activities such as patient counselling, home medication review, and pharmaceutical care programmes may aid in enhancing patients' disease management practises. For early recognition of HTN, we may need to have national level awareness enhancing programs to recognize the at-risk group. We also proposed a therapeutic education and an establishment of support groups and patient associations as suggested by Nadège et al. (2020) to enhance the attitude among hypertensive patients in order to improve their management of hypertension.

6.4 Conclusion

This study showed that the knowledge, attitude, and practice regarding hypertension among hypertensive patients in Family Medicine Clinic, HPUPM is high. A therapeutic education and an establishment of support groups and patient associations may needed to enhance the attitude among hypertensive patients in order to improve their management of hypertension.

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APPENDICES

Appendix A: Turnitin Report

KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS IN FAMILY MEDICINE CLINIC, HOSPITAL PENGAJAR UNIVERSITI PUTRA MALAYSIA (HPUPM)

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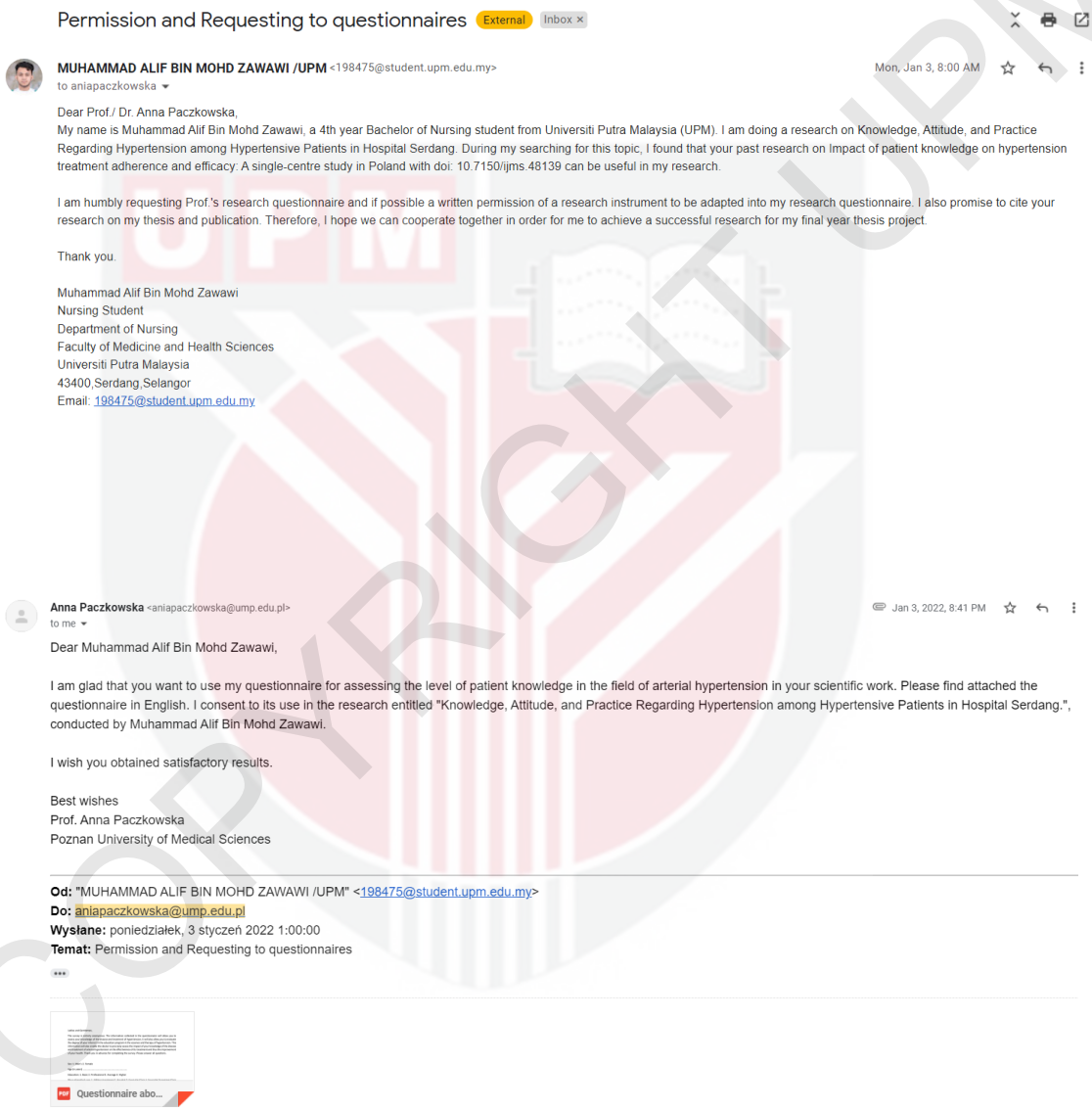
Appendix B: Written Permission for Instrument

I. Impact of patient knowledge on hypertension treatment adherence and efficacy: A single-centre study in Poland by Paczkowska et al., 2021.



Permission and Requesting to questionnaires External Inbox ×

MUHAMMAD ALIF BIN MOHD ZAWAWI /UPM <198475@student.upm.edu.my> Mon, Jan 3, 8:00 AM
to aniapaczkowska

Dear Prof./ Dr. Anna Paczkowska,
My name is Muhammad Alif Bin Mohd Zawawi, a 4th year Bachelor of Nursing student from Universiti Putra Malaysia (UPM). I am doing a research on Knowledge, Attitude, and Practice Regarding Hypertension among Hypertensive Patients in Hospital Serdang. During my searching for this topic, I found that your past research on Impact of patient knowledge on hypertension treatment adherence and efficacy: A single-centre study in Poland with doi: 10.7150/ijms.48139 can be useful in my research.

I am humbly requesting Prof.'s research questionnaire and if possible a written permission of a research instrument to be adapted into my research questionnaire. I also promise to cite your research on my thesis and publication. Therefore, I hope we can cooperate together in order for me to achieve a successful research for my final year thesis project.

Thank you.

Muhammad Alif Bin Mohd Zawawi
Nursing Student
Department of Nursing
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
43400,Serdang,Selangor
Email: 198475@student.upm.edu.my

Anna Paczkowska <aniapaczkowska@ump.edu.pl> Jan 3, 2022, 8:41 PM
to me

Dear Muhammad Alif Bin Mohd Zawawi,

I am glad that you want to use my questionnaire for assessing the level of patient knowledge in the field of arterial hypertension in your scientific work. Please find attached the questionnaire in English. I consent to its use in the research entitled "Knowledge, Attitude, and Practice Regarding Hypertension among Hypertensive Patients in Hospital Serdang.", conducted by Muhammad Alif Bin Mohd Zawawi.

I wish you obtained satisfactory results.

Best wishes
Prof. Anna Paczkowska
Poznan University of Medical Sciences

Od: "MUHAMMAD ALIF BIN MOHD ZAWAWI /UPM" <198475@student.upm.edu.my>
Do: aniapaczkowska@ump.edu.pl
Wysłane: poniedziałek, 3 styczeń 2022 1:00:00
Temat: Permission and Requesting to questionnaires

Questionnaire abo...

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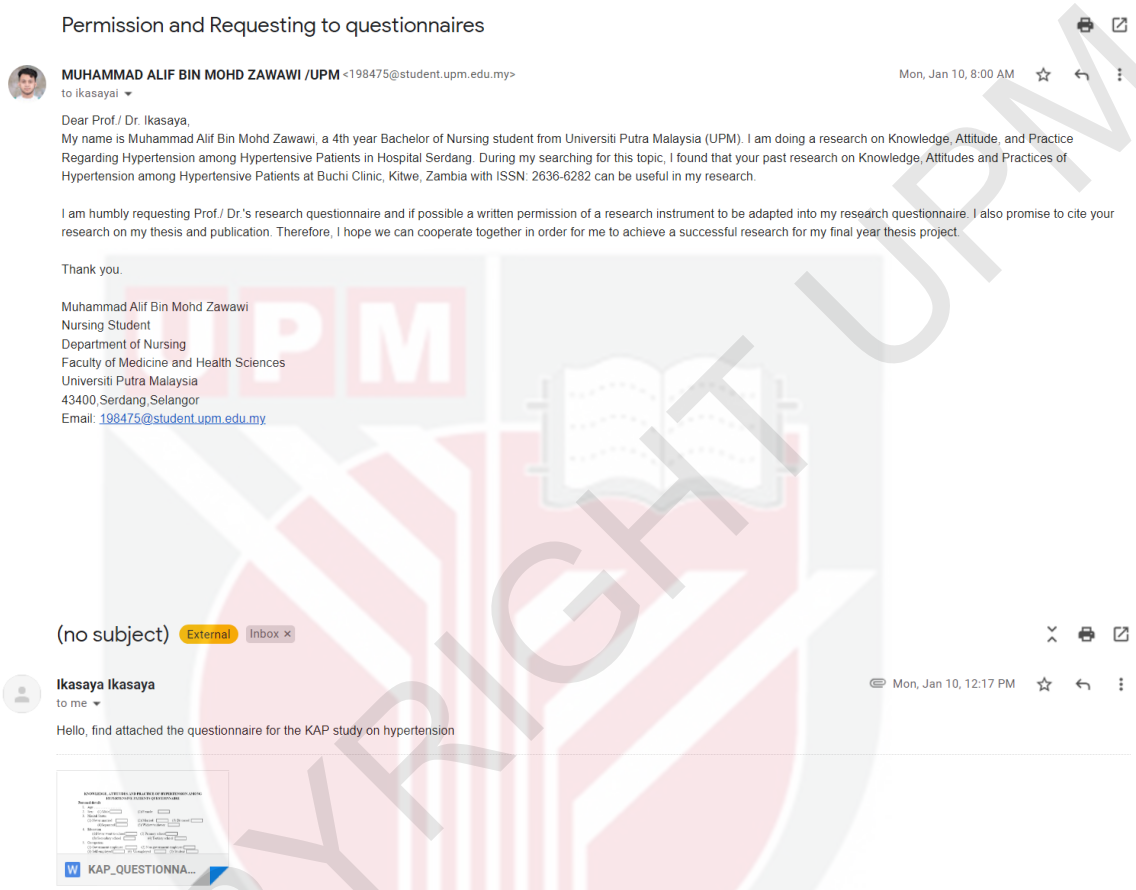
II. Knowledge, Attitudes and Practices of Hypertension among Hypertensive Patients at Buchi Clinic, Kitwe, Zambia by Ikasaya et al., 2018.



Permission and Requesting to questionnaires

MUHAMMAD ALIF BIN MOHD ZAWAWI /UPM <198475@student.upm.edu.my> Mon, Jan 10, 8:00 AM

to ikasayai

Dear Prof./ Dr. Ikasaya,
My name is Muhammad Alif Bin Mohd Zawawi, a 4th year Bachelor of Nursing student from Universiti Putra Malaysia (UPM). I am doing a research on Knowledge, Attitude, and Practice Regarding Hypertension among Hypertensive Patients in Hospital Serdang. During my searching for this topic, I found that your past research on Knowledge, Attitudes and Practices of Hypertension among Hypertensive Patients at Buchi Clinic, Kitwe, Zambia with ISSN: 2636-6282 can be useful in my research.

I am humbly requesting Prof./ Dr.'s research questionnaire and if possible a written permission of a research instrument to be adapted into my research questionnaire. I also promise to cite your research on my thesis and publication. Therefore, I hope we can cooperate together in order for me to achieve a successful research for my final year thesis project.

Thank you.

Muhammad Alif Bin Mohd Zawawi
Nursing Student
Department of Nursing
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
43400,Serdang,Selangor
Email: 198475@student.upm.edu.my

(no subject) External Inbox ×

Ikasaya Ikasaya Mon, Jan 10, 12:17 PM

to me

Hello, find attached the questionnaire for the KAP study on hypertension

KAP_QUESTIONNA...

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III. Validity and reliability of the Malay version of the Hill-Bone compliance to high blood pressure therapy scale for use in primary healthcare settings in Malaysia: A cross-sectional study by Cheong et al., 2015.

Permission and Requesting to Use final version of The Hill-Bone compliance to high blood pressure therapy scale for use in primary healthcare settings in Malaysia External Inbox ×

MUHAMMAD ALIF BIN MOHD ZAWAWI /UPM <198475@student.upm.edu.my> Tue, Dec 7, 2021, 9:00 AM
to caitheng

Dear Prof. Cheong Ai Theng,
My name is Muhammad Alif Bin Mohd Zawawi, a 4th year Bachelor of Nursing student from Universiti Putra Malaysia (UPM). I am doing a research on Knowledge, Attitude, and Practice Regarding Hypertension among Hypertensive Patients in Hospital Serdang. During my searching for this topic, I found that your past research on Validity and reliability of the Malay version of the Hill-Bone compliance to high blood pressure therapy scale for use in primary healthcare settings in Malaysia: A cross-sectional study can be useful in my research.

I am humbly requesting Prof.'s research questionnaire and if possible a written permission of a research instrument to be adapted into my research questionnaire. I also promise to cite your research on my thesis and publication. Therefore, I hope we can cooperate together in order for me to achieve a successful research for my final year thesis project.

Thank you.

Muhammad Alif Bin Mohd Zawawi
Nursing Student
Department of Nursing
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
43400,Serdang,Selangor
Email: 198475@student.upm.edu.my

Ai Theng Cheong <caitheng@gmail.com> Tue, Dec 7, 2021, 9:20 AM
to me

Dear Muhammad Alif,
I am happpy to grant permission for the use of Malay version of the Hill-Bone questionnaire for your research.
Attached is the Malay version of the question and all the best for your study.
Regards,
Dr Cheong Ai Theng
Associate Professor
Department of Family Medicine
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia

2 Attachments

BM and English qu...

ORIGINAL ARTICLE
Validity and reliability of the Malay version of the Hill-Bone compliance to high blood pressure therapy scale for use in primary healthcare settings in Malaysia: A cross-sectional study

mfp_validity and re...

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IV. Hill-Bone Scales: The Hill-Bone Compliance to High Blood Pressure Therapy Scale (HB-HBP) and its medication sub-scale, the Hill-Bone Medication Adherence Scale (HB-MAS) by Kim et al., 2000.

Hill-Bone Scales: User Agreement

Definitions:

- Hill-Bone Scales: the Hill-Bone Compliance to High Blood Pressure Therapy Scale (HB-HBP) and its medication sub-scale, the Hill-Bone Medication Adherence Scale (HB-MAS)
- Provider: Johns Hopkins University School of Nursing
- User: anyone who employs a Hill-Bone Scale in a research, clinical, educational, or other setting
- Publicly Available: the Hill-Bone Scales which are available for download at https://nursing.jhu.edu/HillBoneScales

Thank you for your interest in the Hill-Bone Scales. Please read our User Agreement carefully as we include information which applies universally to the use of our scales.

You understand and agree that the Provider gives access to the Hill-Bone Scales subject to this User Agreement. Provider reserves the right to update the User Agreement at any time. Changes to the User Agreement will apply to new users, new instruments, and to new projects created by existing users after these changes are posted.

Use of the Hill-Bone Scales, related materials, and services requires acceptance of all terms and conditions stated herein. You agree to abide by the Hill-Bone Scales: User Agreement as a condition of using the Hill-Bone Scales. No modifications or additions to these User Agreement are binding upon Provider unless previously agreed to in writing by an authorized representative of Provider.

Single Use, Reproducibility, and Distribution

- All Hill-Bone Scales are copyrighted. All English versions of the Hill-Bone Scales are publicly available for use without licensing or royalty fees for individual research or individual clinical use. Such use of the Hill-Bone Scales is "single use," meaning solely for User's research, clinical, educational, or other application per this request. Subsequent projects, research, clinical use, etc. requires a new Permission Request and new User Agreement.
- User shall not reproduce the Hill-Bone Scale(s) except as needed to conduct the authorized single use research, clinical, educational, or other activity. User shall not distribute, publish, sell, license, or provide the Hill-Bone Scale(s), by any means whatsoever, to third parties not involved with the authorized single use as stated above, without the prior written agreement of the Provider. Users must request permission to reprint the Hill-Bone Scale(s) for reasons not included in the single use case.
- Commercial Users must seek permission to use, reproduce, or distribute any Hill-Bone Scale regardless of purpose, at all times.
- Users wishing to integrate the scales into proprietary technological systems, including in the Single Use case, must seek written approval. Proprietary technological systems include, but are not limited to, computerized adaptive tests, apps, and web portals used

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for data collection. Provider may incur costs in providing the permission to integrate, and those costs may be passed along to the User.

- Users who secure license agreements to deliver the Hill-Bone Scale(s) through technological systems owned and supported by Provider do not need additional licenses to use the Hill-Bone Scale(s) provided with the technological system to which User has been granted license. If the license agreement for the technology owned and supported by Provider includes reproduction and distribution rights, the license agreement itself is sufficient permission for reproduction and distribution and covers all requirements to seek permissions or consent required herein.
- User agrees not to adapt, alter, amend, abridge, modify, condense, make derivative works, or translate the Hill-Bone Scale(s) without prior written permission from the Provider. In cases where permission is granted, User will be expected to evaluate the impact of approved modifications. User will also be expected to provide the verified translation of the Hill-Bone Scale(s) to the Provider for public use.
- User agrees and undertakes not to sell or incorporate the Hill-Bone Scale(s) into materials that could be sold without prior written consent from the Provider.
- To inquire about permissions, email son-hillbonescales@jhu.edu.

Indemnification

- User agrees and undertakes to indemnify and hold Provider harmless against any and all claims, loss or damage, including fees, penalties or fines and third-party claims, and attorneys' fees arising from User's use of any Hill-Bone Scale. Further, User shall be obliged to indemnify, defend and/or hold harmless Provider and its agents, trustees, officers, medical affiliates, employees, and their respective successors, heirs, and assignees against any liability, damage, loss or expense incurred in connection with User's use of any Hill-Bone Scale.
- Consent to User's use of the Hill-Bone Scale(s) is given 'AS IS', without any accompanying services or improvements. Provider does not accept any liability resulting from User's use of any Hill-Bone Scale. Hill-Bone Scale(s) is supplied to User with no warranties or representations of any kind as to the accuracy, currency, or the merchantability or fitness of the Hill-Bone Scale(s) for a particular purpose.
- Neither Provider nor any party involved in creating, producing, or delivering any Hill-Bone Scale shall be liable for any damages, including without limitation, direct, incidental, consequential, indirect, or punitive damages arising out of access to, use of, alterations of, or inability to use any Hill-Bone Scale, or any errors or omissions in the content thereof.

Trademarks References

- User will include Provider's trademark ownership statement on all printed copies of any Hill-Bone Scale in the same form as it appears on the document that User is downloading from this website or is receiving via email from the Provider.
- User agrees and undertakes not to remove the trademark notices which appear on any printed Hill-Bone Scale. Use of the Hill-Bone Scale(s) does not and will not create any

Approved version 18 May 2018

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Appendix C: Respondent's Information Sheet and Informed Consent Form

JAWATANKUASA ETIKA UNIVERSITI UNTUK PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG, SELANGOR, MALAYSIA

RESPONDENT'S INFORMATION SHEET

Please read the following information carefully and do not hesitate to discuss any questions you may have with the researcher.

1. STUDY TITLE: Knowledge, Attitude, and Practice Regarding Hypertension among Hypertensive Patients in Family Medicine Clinic, HPUPM.

2. INTRODUCTION: This research intended to investigate knowledge, attitude, and practice of the hypertension among hypertensive patient in Family Medicine Clinic, HPUPM by using cross-sectional study. As most prior studies on knowledge, attitude, and practice of the hypertension targeted general population at public, there is a need to evaluate hypertensive patients regarding their knowledge, attitude, and practice particularly modifiable risk factors that can prevent progression of hypertension.

You are invited to participate in this research study because you have fulfilled the criteria for this study that requires participant must be adults aged or more than 18 years old and a hypertensive patient who is on at least 1 type of antihypertensive medication. Please take your time to read through and understand why the research is being done and what it will involve. You need to consider this information carefully before you decide if you are willing to participate. Ask the researcher if anything is unclear or if you like more information. After you are properly satisfied that you understand this study and that you wish to participate, you must sign this informed consent form. To participate in this study, you may be required to provide your

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researcher with information on your health history and medication prescriptions.

Your participation in this study is voluntary and you do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data collected from you up to your withdrawal will still be used for the study. Your refusal to participate or withdrawal will not affect any medical or health benefits to which you are otherwise entitled.

This study has already been approved by the Ethics Committee for Research Involving Human Subjects (JKEUPM) Universiti Putra Malaysia.

3. WHAT WILL YOU HAVE TO DO

It is important that you answer all of the questions asked by the researchers honestly and completely which will take about 10 to 15 minutes of your time. Study team will also access your medical records for the information of diagnosis and medications prescribed to make sure that you fulfilled the criteria needed. You will be given a survey form to be answered which contains 4 sections which will enquire about sociodemographic data, knowledges, attitude, and practice regarding hypertension topics.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY

This study will be carried out at Family Medicine Clinic in Hospital Pengajar Universiti Putra Malaysia (HPUPM), targeting hypertensive patients who are attending follow up or treatments. You will be excluded in this study if you have the exclusion criteria below:

III. Pregnant women.
IV. Individuals with mental health issues.

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5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT

There will be no payment given to the respondent as this participation is voluntary. Despite of that, the information obtained from this study will help to create awareness and a better understanding of knowledge, attitude, and practice regarding hypertension among hypertensive patient specifically in Family Medicine Clinic, HPUPM.

(b) TO THE INVESTIGATOR

This research can provide quantitative evidence which help in better understanding the level of knowledge, attitude, and practice regarding hypertension among hypertensive patient in Family Medicine Clinic, HPUPM. It also could guide healthcare practitioners to develop an effective approach to assess and provide health education according to which aspects of knowledges or attitude or practices that are lacking with the ultimate goals of patient-centred care in preventing and managing hypertension.

6. WHAT ARE THE POSSIBLE RISKS

There are no risks or side effects when you participate in this study.

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

All information received from respondents will be kept strictly confidential and used exclusively for the purposes of this research. Respondents will be recognised only by their serial number. The surveys will be kept at the main supervisor office of the Department of Nursing and Rehabilitation at UPM for three years before being disposed of. The results are only accessible to the principal investigator and the supervising committee (researchers). Any reports or publications resulting from the research will be published in a manner that maintains the anonymity of the respondents and does not include any identifying elements.

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

If you have any enquiries, please do not hesitate to contact one of the people listed below:

i. Principal Investigator (Supervisor)
Dr Ruthpackiavaty A/P Rajen Durai
Contact number: +603 9769 2429
Email: ruthpackiavaty@upm.edu.my

ii. Co-investigator (Co-supervisor)
Navin kumar A/L Devaraj
Contact number: +60397692879
Email: knavin@upm.edu.my

iii. Co-investigator (student)
Muhammad Alif Bin Mohd Zawawi
Contact no: +60139206083
Email: mdalif1223@gmail.com

If you have any questions about your rights as a participant in this study, please contact: Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia (JKEUPM), Universiti Putra Malaysia, at telephone number 03-9769 1605 or through email at jkeupm@upm.edu.my.

*Please initial here if you have read and understood the contents of this page*_____

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INFORMED CONSENT FORM

Title of Study:
Knowledge, Attitude, and Practice Regarding Hypertension among Hypertensive Patients in Family Medicine Clinic, HPUPM

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: ……
(Respondent)

Signature: ……
(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)

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JAWATANKUASA ETIKA UNIVERSITI UNTUK PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG, SELANGOR, MALAYSIA

LEMBARAN MAKLUMAT PESERTA

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

1.TAJUK KAJIAN: Pengetahuan, sikap dan amalan terhadap hipertensi dalam kalangan pesakit hipertensi di Klinik Perubatan Keluarga, HPUPM.

2. PENGENALAN: Kajian ini bertujuan untuk mengkaji pengetahuan, sikap dan amalan hipertensi dalam kalangan pesakit hipertensi di Klinik Perubatan Keluarga, HPUPM dengan menggunakan kajian keratan rentas. Oleh kerana kebanyakan kajian terdahulu mengenai pengetahuan, sikap dan amalan hipertensi hanya menyasarkan kepada populasi umum, terdapat keperluan untuk menilai pesakit hipertensi mengenai tahap pengetahuan, sikap dan amalan mereka terutamanya faktor risiko yang boleh diubah suai yang boleh menghalang peningkatan hipertensi.

Anda dijemput untuk mengambil bahagian dalam kajian penyelidikan ini kerana anda telah memenuhi kriteria kajian ini yang memerlukan peserta mestilah dewasa berumur atau lebih daripada 18 tahun dan pesakit hipertensi yang mengambil sekurang-kurangnya 1 jenis ubat antihipertensi. Sila luangkan masa anda untuk membaca dan memahami mengapa penyelidikan ini dilakukan dan perkara yang akan melibatkannya. Anda perlu mempertimbangkan maklumat ini dengan teliti sebelum anda memutuskan sama ada anda bersedia untuk mengambil bahagian dalam kajian ini. Anda boleh bertanya kepada penyelidik jika ada yang tidak jelas atau jika anda memerlukan maklumat lanjut. Selepas anda berpuas hati bahawa anda memahami kajian ini dan anda ingin mengambil bahagian, anda mesti menandatangani Borang Penerangan Dan Persetujuan Responden/Keizinan Peserta. Untuk mengambil

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bahagian dalam kajian ini, anda mungkin dikehendaki memberikan penyelidik anda maklumat tentang sejarah kesihatan anda dan preskripsi ubat.

Penyertaan anda dalam kajian ini adalah secara sukarela dan anda tidak perlu menyertai kajian ini jika anda tidak mahu. Anda juga boleh menolak untuk menjawab sebarang soalan yang anda tidak mahu jawab. Jika anda secara sukarela menyertai kajian ini, anda boleh menarik diri daripada kajian ini pada bila-bila masa. Jika anda menarik diri, sebarang data yang dikumpul daripada anda masih akan digunakan untuk kajian ini. Keengganan anda untuk mengambil bahagian atau penarikan diri tidak akan menjejaskan sebarang hak dan keistimewaan perubatan kesihatan yang anda layak terima

Kajian ini telah pun mendapat kelulusan Jawatankuasa Etika Penyelidikan Melibatkan Subjek Manusia (JKEUPM) Universiti Putra Malaysia.

3. APAKAH YANG PERLU ANDA LAKUKAN

Amat penting anda menjawab kesemua soalan yang dikemukakan oleh kakitangan penyelidikan dengan jujur dan lengkap yang akan mengambil masa selama lima hingga sepuluh minit. Penyelidik juga memerlukan maklumat diagnosis dan ubatan yang telah dipreskripsikan daripada rekod perubatan anda untuk menentukan anda layak untuk menyertai penyelidikan ini. Anda akan diberi borang soal selidik yang akan dijawab yang terdiri daripada empat bahagian yang akan bertanya tentang latar belakang sosio-demografi, pengetahuan, sikap dan amalan berkaitan topik hipertensi.

4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI

Kajian ini akan dijalankan di klinik perubatan keluarga di Hospital Pengajar Universiti Putra Malaysia (HPUPM), menyasarkan pesakit hipertensi yang sedang menjalani rawatan susulan atau rawatan. Anda akan dikecualikan dalam kajian ini jika anda mempunyai kriteria di bawah:

I. Wanita hamil.
II. Individu yang mempunyai masalah kesihatan mental.

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5. APAKAH FAEDAH MENYERTAI KAJIAN INI

a) KEPADA ANDA SEBAGAI PESERTA

Tiada bayaran akan diberikan kepada responden kerana penyertaan ini adalah secara sukarela. Walaupun begitu, maklumat yang diperolehi daripada kajian ini akan membantu mewujudkan kesedaran dan pemahaman yang lebih baik tentang pengetahuan, sikap dan amalan berkaitan hipertensi dalam kalangan pesakit hipertensi khususnya di Klinik Perubatan Keluarga, HPUPM.

b) KEPADA PENYELIDIK

Penyelidikan ini dapat memberikan bukti kuantitatif yang dapat membantu dalam memahami dengan lebih baik tentang tahap pengetahuan, sikap dan amalan mengenai hipertensi dalam kalangan pesakit hipertensi di Klinik Perubatan Keluarga, HPUPM. Ia juga boleh membimbing pengamal perubatan dan jururawat untuk membangunkan pendekatan yang berkesan untuk menilai dan menyediakan pendidikan kesihatan mengikut aspek pengetahuan atau sikap atau amalan dengan matlamat utama penjagaan kendiri pesakit dalam mencegah dan menguruskan hipertensi.

6. ADAKAH IA BERISIKO

Tiada risiko dan kesan-kesan sampingan semasa anda menyertai penyelidikan ini.

7. ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?

Semua maklumat yang diterima daripada responden akan dirahsiakan dan digunakan secara eksklusif untuk tujuan penyelidikan ini. Responden hanya akan dikenali melalui nombor siri mereka. Tinjauan itu akan disimpan di pejabat penyelia utama Jabatan Kejururawatan dan Pemulihan di UPM selama tiga tahun sebelum dilupuskan. Maklumat dan data hanya boleh diakses oleh penyiasat utama dan jawatankuasa penyelia (penyelidik). Sebarang laporan atau penerbitan yang dihasilkan daripada penyelidikan ini hanya akan diterbitkan dengan mengekalkan kerahsiaan responden dan tidak memasukkan sebarang unsur identiti responden.

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

Jika anda mempunyai sebarang pertanyaan, anda boleh menghubungi salah seorang daripada orang yang disenaraikan di bawah:

iv. Penyelidik utama (Penyelia)
Dr. Ruthpackiavaty A/P Rajen Durai
No Telefon: +603 9769 2429
Emel: ruthpackiavaty@upm.edu.my

v. Penyelidik bersama (Penyelia bersama)
Dr. Navin kumar A/L Devaraj
No Telefon: +60397692879
Emel: knavin@upm.edu.my

vi. Penyelidik bersama (Pelajar)
Muhammad Alif Bin Mohd Zawawi
No Telefon: +60139206083
Emel: mdalif1223@gmail.com

Jika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anda sebagai pesakit dalam penyelidikan ini, sila hubungi: Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia (JKEUPM), Universiti Putra Malaysia, di talian 03-9769 1605 atau melalui email kepada jkeupm@upm.edu.my.

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini

_____

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BORANG PERSETUJUAN/KEIZINAN PESERTA

Tajuk Kajian:

Pengetahuan, sikap dan amalan terhadap hipertensi dalam kalangan pesakit hipertensi di Klinik Perubatan Keluarga, HPUPM

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.

I setuju/tidak bersetuju untuk imei/gambar/rakaman video/ rakaman suara digunakan dalam apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).

*potong yang tidak berkenaan

Tandatangan: ……..…….....…… Tandatangan: ……..…….....……
(*Responden*) (*Saksi*)

Tarikh :……..... Nama: …….

No. K/P: ……..

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

Tarikh ……..…… Tandatangan ……..……..
(*Penyelidik*)

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Appendix D: Questionnaires

UNIVERSITI PUTRA MALAYSIA
FACULTY OF MEDICINE AND HEALTH SCIENCES
DEPARTMENT OF NURSING
BACHELOR OF NURSING

SOALAN KAJI SELIDIK/ *QUESTIONNAIRE*

TAJUK KAJIAN/ *RESEARCH TITLE:*

PENGETAHUAN, SIKAP DAN AMALAN TERHADAP HIPERTENSI DALAM KALANGAN PESAKIT HIPERTENSI DI KLINIK PERUBATAN KELUARGA, HPUPM

KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS IN FAMILY MEDICINE CLINIC, HPUPM

PENYELIDIK UTAMA (PENYELIA) *PRINCIPAL RESEARCHER (SUPERVISOR)*	: DR RUTHPACKIAVATY A/P RAJEN DURAI
PENYELIA BERSAMA *CO-SUPERVISOR*	: DR NAVIN KUMAR A/L DEVARAJ
PENYELIDIK BERSAMA (PELAJAR) *CO-INVESTIGATOR (STUDENT)*	: MUHAMMAD ALIF BIN MOHD ZAWAWI (198475)

ARAHAN (*INSTRUCTION)*:

Kajian ini dijalankan untuk tujuan akademik. Semua maklumat akan disimpan secara peribadi dan sulit. Terima kasih atas kerjasama anda dalam menjawab soal selidik ini.

This study is conducted for academic purposes. All information will be kept private and confidential. Thank you for your cooperation in answering this questionnaire.

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BAHAGIAN I *(PART I)*

MAKLUMAT SOSIODEMOGRAFI (*SOCIODEMOGRAPHIC DATA)*

Please answer each question appropriately by ticking (√) in the box or at the space provided respectively.

Sila jawab setiap soalan dengan betul dengan menanda (√) di dalam kotak atau pada ruang yang disediakan masing-masing.

1. Kumpulan umur/ *Age group*

   [ ] 18- 29 tahun *18- 29 years* [ ] 30- 49 tahun *30- 49 years* [ ] 50 tahun ke atas *50 years and above*

2. Jantina/ Gender

   [ ] Perempuan *Female* [ ] Lelaki *Male*

3. Etnik/ Ethnicity

   [ ] Malay *Melayu* [ ] Chinese *Cina* [ ] India *India* [ ] Others *Lain-lain*

4. Kelayakan pendidikan tertinggi/ Highest education qualification

   [ ] Pendidikan Rendah *Primary Education* [ ] Pendidikan Menengah *Secondary Education* [ ] Pendidikan Tinggi *Tertiary Education*

5. Status pekerjaan/ Employment status

   [ ] Kakitangan kerajaan/ bukan kerajaan *Government/ Non-government employee* [ ] Bekerja sendiri *Self-employee* [ ] Bersara *Retired*

   [ ] Tidak bekerja *Unemployed* [ ] Pelajar *Student*

6. Sejarah keluarga menghidap hipertensi/ Family history of hypertension

   [ ] Ya *Yes* [ ] Tidak *No*

7. Bilangan tahun menghidap hipertensi/ Years of diagnosed hypertension

   [ ] Kurang 1 tahun *Less than 1 year* [ ] 1-2 tahun *1-2 years* [ ] 3- 4 tahun *3- 4 years* [ ] 5 tahun dan ke atas *5 years and above*

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BAHAGIAN II *(PART II)*

PENGETAHUAN BERKENAAN HIPERTENSI DALAM KALANGAN PESAKIT HIPERTENSI *(KNOWLEDGE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS)*

Bahagian ini menyiasat pengetahuan anda mengenai hipertensi. Pilihan bagi setiap soalan termasuk "Ya", "Tidak" dan "Tidak Pasti". Sila tandakan "√" dalam kotak pilihan yang paling sepadan dengan jawapan anda.

This section investigates your knowledge regarding hypertension. The options of each question include "Yes", "No" and "Unsure". Please tick "√" below the options that best matches your answer.

Soalan/ ***Item***	**Ya/** ***Yes***	**Tidak/** ***No***	**Tidak pasti/** ***Unsure***
1. Apakah nilai tekanan darah yang menunjukkan hipertensi? *What blood pressure values are indicative of hypertension?* [0] 130/85 mmHg [1] 150/100 mmHg [0] 130/80 mmHg			
2. Bagaimana untuk mengukur tekanan darah dengan betul? *How to measure blood pressure correctly?* [0] Selepas aktiviti fizikal (Cth, berlari pantas) *After physical activity (e.g., running fast)* [1] Di dalam bilik yang sunyi selepas berehat sekurang-kurangnya 3 minit *In a quiet room after resting for at least 3 minutes* [0] Keadaan dan waktu tidak begitu penting *The conditions and circumstances are not very significant*			

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Soalan/ *Item*	**Ya/ *Yes***	**Tidak/ *No***	**Tidak pasti/ *Unsure***
3. Bolehkah pemantauan tekanan darah yang kerap di rumah menyumbang kepada keberkesanan rawatan hipertensi yang lebih baik? *Can regular blood pressure monitoring at home contribute to better efficacy of hypertension treatment?*	1	0	0
4. Adakah sejarah keluarga hipertensi meningkatkan risiko untuk mendapat tekanan darah tinggi? *Does family history of hypertension increase risk for developing high BP?*	1	0	0
5. Hipertensi tidak menunjukkan gejala pada awalnya untuk jangka masa yang lama? *Can hypertension present no symptoms at the beginning for a long time?*	1	0	0
6. Pengambilan garam yang berlebihan adalah salah satu faktor risiko untuk meghidap hipertensi? *Excessive salt intake is one of the risk factors for developing hypertension?*	1	0	0
7. Adakah obes/ berat badan berlebihan merupakan salah satu faktor risiko hipertensi? *Does being obese/ overweight one of the risk factors of hypertension?*	1	0	0
8. Adakah diabetes dan paras kolesterol tinggi meningkatkan risiko hipertensi? *Are diabetes and high cholesterol levels increase the risk of hypertension?*	1	0	0
9. Adakah merokok meningkatkan risiko hipertensi? *Does smoking increase the risk of hypertension?*	1	0	0
10. Adakah pengambilan alkohol yang berlebihan meningkatkan risiko hipertensi?	1	0	0

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Soalan/ *Item*	**Ya/ *Yes***	**Tidak/ *No***	**Tidak pasti/ *Unsure***
Does excessive alcohol consumption increase the risk of hypertension?			
11. Bolehkah stres menyebabkan hipertensi? *Can stress lead to hypertension?*	1	0	0
12. Melakukan aktiviti fizikal dengan kerap boleh membantu mengurangkan hipertensi? *Engaging in physical activity regularly can help to reduce hypertension?*	1	0	0
13. Bolehkah tekanan darah dikurangkan tanpa mengambil ubat? *Can blood pressure be decreased without taking drugs?*	1	0	0
14. Bolehkah anda berhenti mengambil ubat-ubatan yang dibekalkan apabila nilai tekanan darah normal dicapai semasa rawatan farmakologi hipertensi? *Can the prescribed drug be discontinued when normal blood pressure values are achieved during pharmacological treatment of hypertension?*	0	1	0
15. Adakah hipertensi salah satu punca utama serangan jantung atau strok? Is hypertension one of the main causes of heart attack or stroke?	1	0	0
16. Adakah hipertensi boleh menyebabkan masalah buah pinggang? *Is hypertension can cause of kidney problems?*	1	0	0
17. Adakah hipertensi boleh menyebabkan masalah penglihatan? *Is hypertension can cause eyesight problems?*	1	0	0
18. Adakah rawatan hipertensi yang berkesan mengurangkan risiko komplikasi hipertensi? *Does effective treatment of hypertension reduce the risk of complications of hypertension?*	1	0	0

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BAHAGIAN III *(PART III)*

SIKAP TERHADAP HIPERTENSI DALAM KALANGAN PESAKIT HIPERTENSI
(ATTITUDE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS)

Bahagian ini mengkaji sikap anda terhadap hipertensi. Pilihan bagi setiap soalan termasuk "Ya", "Tidak" dan "Tidak Pasti". Sila tandakan "√" di bawah pilihan yang paling sepadan dengan jawapan anda.

This section investigates your attitude regarding hypertension. The options of each question include "Yes", "No" and "Unsure". Please tick "√" below the options that best matches your answer.

Soalan/ Item	**Ya/ Yes**	**Tidak/ No**	**Tidak Pasti/ Unsure**
1. Saya perlu memeriksa tekanan darah saya dengan kerap walaupun tidak menunjukkan simptom hipertensi *I must check my blood pressure regularly even if there are no symptoms*	1	0	0
2. Saya bimbang tentang kesihatan saya jika tekanan darah saya tinggi *I'm worry about my health if my blood pressure is high*	1	0	0
3. Saya akan menjalani rutin pemeriksaan kesihatan untuk memeriksa tekanan darah saya *I will go for routine medical check-up to check for my blood pressure*	1	0	0
4. Saya perlu mengurangkan pengambilan garam untuk mencegah/mengawal hipertensi *I should reduce salt intake to prevent/ manage hypertension*	1	0	0
5. Saya harus mengurangkan pengambilan makanan yang tinggi kolesterol untuk mencegah/mengawal hipertensi *I should reduce cholesterol food intake to prevent/ manage hypertension*	1	0	0
6. Saya perlu bersenam secara kerap (sekurang-kurangnya 3 kali seminggu) untuk mencegah/mengawal hipertensi *I should exercise regularly (at least 3 times a week) to manage/ treat hypertension*	1	0	0
7. Adakah ubat-ubatan hipertensi penting untuk mencegah/mengawal hipertensi *Do you think hypertensive medication is important in managing/ treat hypertension*	1	0	0

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BAHAGIAN IV (PART IV)

AMALAN BERKENAAN HIPERTENSI DALAM KALANGAN PESAKIT HIPERTENSI *(PRACTICE REGARDING HYPERTENSION AMONG HYPERTENSIVE PATIENTS)*

Bahagian ini mengkaji amalan anda mengenai hipertensi. Pilihan jawapan adalah berdasarkan tahap persetujuan anda mengikut pernyataan yang diberikan. Sila tandakan "√" pada pilihan jawapan yang paling sepadan dengan jawapan anda.

This section investigates your practice regarding hypertension. The options of the answer are based on your level of agreement according to the statements given. Please tick "√" below the options that best matches your answer.

Soalan/ ***Item***	**Skala Maklum Balas/** ***Response Scale***			
	Setiap Hari/ ***Daily***	**Setiap Minggu/** ***Weekly***	**Setiap Bulan/** ***Monthly***	**Kurang dari Sekali Sebulan atau Tiada/** ***Less than once a month or None***
1. Berapa kerap anda mengambil makanan berlemak? *How often do you consume fatty food?*	1	2	3	4
2. Berapa kerap anda mengambil alkohol? *How often do you consume alcohol?*	1	2	3	4
3. Berapa kerap anda merokok? *How often do you smoke?*	1	2	3	4
4. Berapa kerap anda melakukan senaman fizikal? *How often do you perform physical exercise?* [4] Setiap hari *Daily* [3] Paling banyak pada hari dalam seminggu *Most on the days in a week*				

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[2] Kurang daripada separuh hari dalam minggu *Less than half of the days in the weeks* [1] Kurang daripada sekali seminggu *Less than once a week*				

Versi Melayu Hill-Bone Skala Pematuhan Terapi Tekanan Darah Tinggi

Malay version of the Hill-Bone compliance to high blood pressure therapy scale

Bil ***No***	**Soalan** ***Item***	**Skala Maklumbalas** ***Response Scale***			
		Setiap masa *All of the time*	**Kerap-kali** *Most of the time*	**Kadang-kala** *Some of the time*	**Tidak pernah** *None of the time*
1	Berapa kerap anda terlupa makan ubat darah tinggi? *How often do you forget to take your blood pressure medicine?*	1	2	3	4
2	Berapa kerap anda membuat keputusan untuk TIDAK makan ubat darah tinggi? *How often do you decide NOT to take your blood pressure medicine?*	1	2	3	4
3	Berapa kerap anda makan makanan masin? *How often do you eat salty food?*	1	2	3	4
4	Berapa kerap anda tambah garam, kicap atau sos ke dalam makanan sebelum anda makan? *How often do you add salt, 'kicap' or sauce on your food before you eat it?*	1	2	3	4

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5	Berapa kerap anda memakan makanan segera (KFC, McDonald, , makan di luar)? *How often do you eat fast food (KFC, McDonald, eat out)?*	1	2	3	4
6	Berapa kerap anda membuat temujanji untuk lawatan susulan sebelum meninggalkan klinik? *How often do you make the next appointment before you leave the clinic?*	4	3	2	1
7	Berapa kerap anda tidak hadir untuk temujanji anda? *How often do you miss your follow up appointments?*	1	2	3	4
8	Berapa kerap anda terlupa mengambil bekalan ubat tambahan? *How often do you forget to get your repeat medication?*	1	2	3	4
9	Berapa kerap anda kehabisan ubat darah tinggi? *How often do you run out of high blood pressure pills?*	1	2	3	4
10	Berapa kerap anda tidak mengambil ubat darah tinggi sebelum berjumpa doktor? *How often do you skip your high blood pressure medicine before you go to the doctor?*	1	2	3	4
11	Berapa kerap anda tidak makan ubat darah tinggi bila anda rasa sihat? *How often do you miss taking your high blood pressure pills when you feel better?*	1	2	3	4
12	Berapa kerap anda tidak makan ubat darah tinggi ketika kurang sihat?	1	2	3	4

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	How often do you miss taking your high blood pressure pills when you feel sick?				
13	Berapa kerap anda makan ubat darah tinggi kepunyaan orang lain? *How often do you take someone else's high blood* *pressure pills?*	1	2	3	4
14	Berapa kerap anda tidak makan ubat darah tinggi akibat kecuaian anda? *How often do you miss taking your high blood pressure pills when you are careless?*	1	2	3	4

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ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS (JKEUPM)
UNIVERSITI PUTRA MALAYSIA

Research title	:	**Knowledge, Attitude, And Practice Regarding Hypertension Among Hypertensive Patients in Serdang, Selangor.**
Study Site	:	**Hospital Pengajar Universiti Putra Malaysia, HPUPM.**
JKEUPM Ref No.	:	**JKEUPM-2022-373**
Researcher	:	**Muhammad Alif Bin Mohd Zawawi**
Supervisor	:	**Dr. Ruthpackiavathy A/P Rajen Durai**

Documents received and reviewed with reference to the above study:

1. Ethics Application Form, Version 1 dated 24/05/2022
2. Respondent's Information Sheet / Consent (English), Version 1 dated 24/05/2022
3. Respondent's Information Sheet / Consent (Malay), Version 1 dated 24/05/2022
4. Proposal (English), Version 1 dated 24/05/2022
5. Questionnaire / Interviews (English), Version 1 dated 24/05/2022
6. Curriculum Vitae of:
    a. Dr. Ruthpackiavathy A/P Rajen Durai
    b. Dr Navin Kumar A/L Devaraj

The University Research Ethics Committee, Universiti Putra Malaysia (JKEUPM) operates in accordance to the ICH-GCP Guidelines.
Decision by JKEUPM:

[X] Approved

[X] **Permission MUST BE OBTAINED from the respective hospitals/ institutions before conducting the research**

[ ] Disapproved

Please note that the approval is **VALID UNTIL 29 JUNE 2023**

Researchers should comply with the following:

I. Complete a Study Final Report upon study completion (Form 3.2).

II. Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

III. Applicable for Clinical Trial Studies and Clinical interventional Studies only: Progress Report has to be submitted to JKEUPM at every 6 months from the date of approval (Form 3.1). Report occurrences of all Serious Adverse Events (SAEs), Suspected Unexpected Serious Adverse Reaction (SUSARs) and Protocol Deviation/ Violation at all JKEUPM approved sites to JKEUPM. SAEs are to be reported within 15 calendar days from awareness of event by

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Appendix F: HPUPM Approval

UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

FAKULTI PERUBATAN DAN SAINS KESIHATAN
FACULTY OF MEDICINE AND HEALTH SCIENCES

Rujukan kami : UPM.FPSK.JNUR.600-4/30/2
Tarikh : 29 Jun 2022

YBHG. PROF. DR. HAMIDON BIN BASRI
Pengarah
Hospital Pengajar Universiti Putra Malaysia
Persiaran MARDI – UPM
43400 UPM Serdang
Selangor, Malaysia

Melalui,
YBHG. PROFESOR DR. ZAMBERI SEKAWI
Dekan, Fakulti Perubatan dan Sains Kesihatan,
Universiti Putra Malaysia,
43400 UPM Serdang,
Selangor Darul Ehsan.

YBhg. Prof.,
PERMOHONAN KEBENARAN MENJALANKAN AKTIVITI PENYELIDIKAN DI HOSPITAL PENGAJAR UNIVERSITI PUTRA MALAYSIA (HPUPM)

Dengan segala hormatnya merujuk perkara diatas,

2. Adalah dimaklumkan bahawa Muhammad Alif Bin Mohd Zawawi, nombor matrik 198475, pelajar tahun akhir Bacelor Kejururawatan Universiti Putra Malaysia dikehendaki menjalankan projek ilmiah tahun akhir (NUR 4999A) bagi memenuhi keperluan syarat untuk bergraduat.

3. Untuk makluman YBhg. Prof., tajuk penyelidikan yang akan dijalankan adalah seperti berikut:

Tajuk	:	**Pengetahuan, Sikap Dan Amalan Terhadap Hipertensi Dalam Kalangan Pesakit Hipertensi Di Serdang, Selangor.**
Tempoh Kajian	:	**Jun – Ogos 2022**

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Lampiran

PROTOKOL

Ringkasan Projek Penyelidikan

Tajuk Penyelidikan:

Pengetahuan, Sikap Dan Amalan Terhadap Hipertensi Dalam Kalangan Pesakit Hipertensi Di Serdang, Selangor.

Nama dan Jabatan Ketua Penyelidik:

Penyelidik/ Penyelia Utama	:	Dr Ruthpackiavaty A/P Rajen Durai, Jabatan Kejururawatan, Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia.
Penyelia Bersama	:	Dr Navin Kumar A/L Devaraj, Jabatan Perubatan Keluarga, Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia
Penyelidik Bersama (Pelajar)	:	Muhammad Alif Bin Mohd Zawawi (198475), Jabatan Kejururawatan, Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia

Rujukan Kelulusan JKEUPM: JKEUPM-2022-373

Tarikh Mula Penyelidikan: 27 Jun 2022

Tarikh Tamat Penyelidikan: 29 Ogos 2022

Objektif Penyelidikan: Kajian ini bertujuan untuk mengkaji pengetahuan, sikap dan amalan hipertensi dalam kalangan pesakit hipertensi di Serdang, Selangor dengan menggunakan kajian keratan rentas. Oleh kerana kebanyakan kajian terdahulu mengenai pengetahuan, sikap dan amalan hipertensi hanya menyasarkan kepada populasi umum, terdapat keperluan untuk menilai pesakit hipertensi mengenai tahap pengetahuan, sikap dan amalan mereka terutamanya faktor risiko yang boleh diubah suai yang boleh menghalang peningkatan hipertensi.

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