UNIVERSITI PUTRA MALAYSIA

RELATIONSHIP BETWEEN HEALTH LITERACY AND FREQUENCY OF OUTPATIENT HEALTHCARE UTILISATION AMONG UNDERGRADUATE STUDENTS AT A PUBLIC UNIVERSITY IN SELANGOR

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BACHELOR OF NURSING

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ABSTRACT

RELATIONSHIP BETWEEN HEALTH LITERACY AND FREQUENCY OF OUTPATIENT HEALTHCARE UTILISATION AMONG UNDERGRADUATE STUDENTS AT A PUBLIC UNIVERSITY IN SELANGOR

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Background: Health literacy was very crucial for the health outcomes in an individual. University students were at high risk to have unhealthy behaviours and thus having an adequate health literacy level was very crucial for them to have good decision making for their health. **Objective:** The main objective was to determine the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in Universiti Putra Malaysia, Selangor. **Method:** A cross-sectional study with a convenient sampling method was used in this study. The data were collected from July to September 2021 and 155 undergraduate students were participated in this study by answering a set of the questionnaire via google forms. Data were analyzed by using Statistical Analysis Package for Social Sciences (SPSS) version 22.0. **Results:** Out of 155 participants, 115 (74.2%) of them were female and 40 (25.8%) of them were male. The age of the participants was ranged from 19 to 26 years old. The data showed that 16.1% (n = 25) of the participants were having limited health literacy, 57.4% (n= 89) of the participants were having sufficient health literacy and 26.5% (n = 41) of the participants were having excellent health literacy. The mean for the HLS-M-Q18 index score was 38.91 with a standard deviation of 5.601. The study results showed that there was no significant relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students with p = 0.658. **Conclusion:** This study showed the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students. It also provided baseline data for the university health centre or other university authorities to improve the health literacy among their undergraduate students.

Keywords: health literacy, frequency, outpatient healthcare utilisation, undergraduate students

ABSTRAK

HUBUNG KAIT ANTARA LITERASI KESIHATAN DAN KEKERAPAN PENGGUNAAN RAWATAN KESIHATAN PESAKIT LUAR DI KALANGAN PRASISWAZAH DI SEBUAH UNIVERSITI AWAM DI SELANGOR

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Pengenalan: Literasi kesihatan sangat penting untuk hasil kesihatan seseorang. Pelajar universiti berisiko tinggi untuk mempunyai tingkah laku yang tidak sihat dan dengan itu tahap literasi kesihatan yang mencukupi sangat penting untuk membantu mereka dalam membuat keputusan yang baik untuk kesihatan mereka sendiri. **Objektif:** Objektif utama adalah untuk menentukan hubung kait antara literasi kesihatan dan kekerapan penggunaan rawatan kesihatan pesakit luar di kalangan prasiswazah di Universiti Putra Malaysia, Selangor. **Kaedah: l**Reka bentuk kajian keratan rentas dengan kaedah kemudahan sampel digunakan dalam kajian ini. Data dikumpulkan dari bulan Julai hingga September 2021. Seramai 155 prasiswazah yang telah mengikuti kajian ini dengan menjawab satu set soal selidik melalui borang google. Semua data dianalisis dengan menggunakan *Statistical Analysis Package for Social Sciences (SPSS)* versi 22.0. **Keputusan dan perbincangan:** Daripada 155 peserta, 115 (74.2%) daripada mereka adalah perempuan dan 40 (25.8%) daripada mereka adalah lelaki. Umur peserta yang terlibat dalam kajian ini adalah di antara 19 tahun hingga 26 tahun. Data menunjukkan bahawa 16.1% (n = 25) peserta mempunyai literasi kesihatan yang terhad, 57.4% (n = 89) peserta mempunyai literasi kesihatan yang mencukupi dan 26.5% (n = 41) peserta mempunyai kesihatan yang tinggi. Purata untuk skor indeks HLS-M-Q18 adalah 38.91 dengan sisihan piawai 5.601. Hasil kajian menunjukkan bahawa tidak ada hubungan yang signifikan antara literasi kesihatan dan kekerapan penggunaan rawatan kesihatan pesakit luar di kalangan prasiswazah dengan nilai p = 0.658. **Kesimpulan:** Kajian ini menunjukkan hubung kait antara literasi kesihatan dan kekerapan penggunaan rawatan kesihatan pesakit luar di kalangan prasiswazah. Ia juga memberikan data asas untuk pusat kesihatan universiti atau pihak berkuasa universiti yang lain untuk meningkatkan literasi kesihatan di kalangan prasiswazah mereka.

Kata kunci: literasi kesihatan, kekerapan, penggunaan rawatan kesihatan pesakit luar, prasiswazah

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In addition, I would like to thank the dean from the Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Human Ecology, and Faculty of Design and Architecture for allowing me to conduct this research among the undergraduate students from their faculties. Their supports were very appreciated.

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LIST OF ABBREVIATIONS

JKEUPM	*Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia*
NHMS	National Health and Morbidity Survey
PIS	Participant Information Sheet
UPM	Universiti Putra Malaysia
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Health literacy was defined as "the degree to which people are able to access, understand, appraise and communicate information to engage with the demands of different health contexts to promote and maintain good health across the life-course" (Kwan, Frankish & Rootman, 2006). There was a difference between literacy and health literacy. Literacy was meant by basic skills that were required to succeed in society whereas health literacy needed some extra skills which include those required to find, evaluate and integrate health-related information from different contexts (Kanj & Mitic, 2009). The literacy level would directly affect the ability to act on health information and take more control to health as an individual, family, and community (Kanj & Mitic, 2009).

Furthermore, health literacy was very crucial for the health outcomes in an individual. According to a study conducted by Rababah, Al-Hammouri, Drew and Aldalaykeh (2019), they mentioned that university students were at high risk to have unhealthy behaviours such as unhealthy eating and lack of physical activities that might affect their academic performance and health status. This was because university students spent a lot of time in a stressful environment and they might tend to have unhealthy behaviours to release their stress. Therefore, having an adequate health literacy level was very crucial for university students to have good decision making for their health.

Hence, the researcher would like to study the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in Universiti Putra Malaysia (UPM), Selangor.

1.2 Problem Statement

Based on a study done by Duplaga (2020), 34.8% of the respondents aged 18 years and above were having limited health literacy meanwhile 65.2% were having sufficient health literacy. In another study conducted by Rademakers and Heijmans (2018) in the Netherlands among people with chronic disease, 13.4% were having an inadequate level of health literacy, followed by 26.5% for limited health literacy and 60.1% for sufficient health literacy.

Furthermore, according to Joveini, Rohban, Askarian, Maheri, and Hashemian (2019), they reported that among the adults aged 18 to 65 years old in Iran, 18.1% of them were having inadequate health literacy, 27.7% were having marginal health literacy, 39.4% were having adequate health literacy and 14.7% were having excellent health literacy.

In addition, a study conducted by Sukys, Cesnaitiene, and Ossowsky (2017) reported that a large sample of young adults in university were having insufficient health literacy. Moreover, according to Ruenda-Medina et al. (2020), they reported that less than half of the students were having sufficient health literacy meanwhile 30.2% of the students were having inadequate or problematic health literacy.

In Malaysia, there were some studies done on health literacy. According to National Health and Morbidity Survey [NHMS] (2019), the overall health literacy prevalence among Malaysian adults showed that 40.7% of the population was having sufficient health literacy level, followed by 35.0% for limited health literacy level and 24.3% for excellent health literacy level. According to Sorensen et al. (2015), the health literacy index score could be divided into four which were inadequate (0-25), problematic (>25-33), sufficient (>33-42), and excellent (>42-50). The inadequate and problematic levels were merged to become one level which was limited health literacy level (0-33). This was to identify the vulnerable group. The average mean score for the Malaysian population stated in the report was 35.5 which falls under the sufficient category (33-42) (NHMS, 2019). Although the average mean score was fall under the sufficient category, the recommended sufficient category in the health literacy index score was 37. This indicated that the health literacy level among the Malaysian population was considered as insufficient and still could be improved in the future.

According to another study done by Hamzah, Suandi, and Ishak (2016), they reported that 56.3% of the respondents had moderate health literacy level, followed by 42.1% for high health literacy level and 1.6% for low health literacy level. This study was carried out by Universiti Putra Malaysia (UPM) among adolescents in Malaysia.

Moreover, according to a study conducted by Eltayeb, Salmiah, and Suriani (2016) on "Association of Health Literacy with Obesity and Overweight among Arabic

Secondary School Students in Kuala Lumpur and Putrajaya, Malaysia", they reported that the percentage of low health literacy, moderate health literacy, and adequate health literacy among the respondents was 9.4%, 42.1%, and 48.5% respectively.

Furthermore, there was a study done by Shah and Hamzah (2016) on "Developing a Conceptual Model of Youth Health Literacy in Malaysia" that evaluated an instrument tool to determine the level of health literacy among adolescents in Malaysia. The main focus for this study was on the adolescent health literacy level and not specific to young adults or undergraduate students.

In addition, education was being identified as one of the important and common denominators to address poor health literacy globally (Vamos & Yeung, 2016). According to Evans, Anthony, and Gabriel (2019), they stated that most of the time, university students were expected to have good health literary level. Hence, the health literacy among undergraduate students was crucial to be identified to determine their exact level of health literacy.

There were a few studies that examine health literacy in Malaysia and overseas. However, the researcher noticed that most of the previous researches done were more focused on health literacy itself. The researcher hardly found the research paper specifically about the relationship between health literacy and frequency of outpatient healthcare utilisation. Also, most of the studies were conducted among adults and adolescents but were limited to undergraduate students in Malaysia.

Therefore, in this study, the researcher would like to determine the health literacy level among the undergraduate students and then determine its relationship with the frequency of outpatient healthcare utilisation. Moreover, the researcher would like to compare the health literacy level between the selected faculties in UPM, Selangor.

1.3 Research Question

The research question below was to be answered in this study:

1. What is the relationship between health literacy and the frequency of outpatient healthcare utilisation among undergraduate students in UPM, Selangor?

1.4 Objectives

1.4.1 General Objective

To determine the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in UPM, Selangor.

1.4.2 Specific Objective

1. To determine the health literacy level among undergraduate students.
2. To determine the frequency of outpatient healthcare utilisation among undergraduate students.
3. To determine the relationship between socio-demographic characteristics and health literacy among undergraduate students.
4. To determine the relationship between socio-demographic characteristics and frequency of outpatient healthcare utilisation among undergraduate students.
5. To determine the relationship between health literacy and frequency of

outpatient healthcare utilisation among undergraduate students.

1.5 Significance of the Study

This study could provide information about the health literacy level among undergraduate students from different faculties in UPM. Hence, the researcher could compare and determine which faculties' students were having low health literacy and further health promotion interventions could be implemented in those faculties. This was one of the ways to promote health literacy and improve health outcomes among undergraduate students in UPM.

1.6 Hypothesis

1.6.1 Alternative Hypothesis

Ho1: There is a significant relationship between socio-demographic characteristics and health literacy among undergraduate students at $p < 0.05$.

Ho2: There is a significant relationship between socio-demographic characteristics and the frequency of outpatient healthcare utilisation among undergraduate students at $p < 0.05$.

Ho3: There is a significant relationship between health literacy and the frequency of outpatient healthcare utilisation among undergraduate students at $p < 0.05$.

1.6.2 Null Hypothesis

Ho1: There is no significant relationship between socio-demographic characteristics and health literacy among undergraduate students at $p > 0.05$.

Ho2: There is no significant relationship between socio-demographic characteristics and frequency of outpatient healthcare utilisation among undergraduate students at $p > 0.05$.

Ho3: There is no significant relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students at $p > 0.05$.

1.7 Operational Definition

1.7.1 Health literacy

Health literacy was meant by the ability to access, understand and apply the health information to make an appropriate decision in daily life regarding healthcare, disease prevention, and promotion to enhance health and quality of life.

1.7.2 Undergraduate students

Undergraduate students were referred to students who are studying for their first degree in the Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Human Ecology, and Faculty of Design and Architecture in UPM. Undergraduate students from Year 1 to Year 4 were included in this study.

1.7.3 Frequency

Frequency referred to the rate at which the undergraduate students use outpatient healthcare over a particular time.

1.7.4 Outpatient healthcare

Outpatient healthcare referred to the undergraduate students who have received any traditional, complementary, or modern advice, check-up, or treatment at healthcare facilities such as public or private hospitals, clinics, or University Health Centre, UPM without any overnight stay.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

According to Duplaga (2020), he stated that health literacy was recognized as one of the most crucial concepts for modern health promotion activities to be successful. Next, health literacy was shown as an important determinant of health in the Declaration arising from the 9th Global Conference of Health Promotion held in Shanghai in 2016. The Declaration also stated that health literacy acted as a vital tool to empower the citizens and enable their engagement in collective health promotion action. Low health literacy would give negative impacts on an individual's health outcomes and their utilisation of the health care system. Individuals with low health literacy would have a higher possibility that they were unable to make the right decisions related to their health (DeMarco & Nystrom, 2010).

2.2 Health Literacy

According to World Health Organization [WHO] (1998), it stated that health literacy referred to "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health." Health literacy was also referred to as "the degree to which individuals have the capacity to obtain, process and understand the basic health information and services needed to make appropriate health decisions" (Ratzan & Parker, 2000).

Moreover, according to Sorensen et al. (2015), they stated that health literacy incorporated the competency of an individual to access, understand, appraise and apply the information related to health in three domains. The three domains mentioned by them were (1) healthcare, (2) disease prevention, and (3) health promotion. For healthcare, it was referred to the ability of an individual to access the information related to medical issues, comprehend the medical information, interpret and evaluate the medical information, and then make their own decisions that related to medical issues and obey with medical advice. Next, disease prevention was referred to the ability of an individual to obtain health information related to risk factors, understand the risk factors information, interpret and evaluate the risk factors information and then make their decisions to secure themselves from the risk factors. For health promotion, it was referred to the ability of an individual to constantly upgrade themselves regarding the health determinants in a physical and social environment. They also needed to have the ability to interpret and evaluate the information related to the health determinants and make their own decisions on determinants of health in the physical and social environment.

Health literacy was very crucial in strengthening an individual health responsibility and there was an association between inadequate health literacy and an unhealthy lifestyle (Uysal, Ceylan & Koç, 2019). Also, according to Rueda-Medina et al. (2020), they stated that there was an association between health literacy and health lifestyle profiles. Thus, health literacy acted as a crucial determinant of health behaviours that support the importance of including a focus on health literacy in the higher education system.

In addition, limited health literacy would have a significant effect on human health. It correlated with less participation in health-promoting and disease detection activities, diminished management of chronic diseases such as hypertension and diabetes mellitus, poor adherence to the prescribed medication, increased in risky health choices such as high smoking rate, increased admission to the hospital as well as readmission, increased morbidity and premature death (WHO, 2013). Also, effective responses to the threat posed by infectious diseases needed multifactorial interventions, including the availability of adequate clinical care, improvements in the citizens' living conditions, and their accessibility to education (Saker, Lee, Cannito, Gilmore & Campbell-Lendrum, 2004). It was very important for the citizens to enhance their self-efficacy to adopt the recommended preventive measures; for example, vaccination and encouraging their engagement in the same public health intervention (Marais et al., 2015). Such public involvement needed adequate information; however, determinants such as health literacy could influence the effective use of the knowledge (Castro- Sánchez, Chang, Vila-Candel, Escobedo & Holmes, 2016).

2.3 Frequency of Outpatient Healthcare Utilisation

Based on a study carried out by Viktorsson, Yngman-Uhlin, Törnvall, and Falk (2019), they stated that there was an increase in healthcare utilisation among young adults during the last decades.

In contrast, according to NHMS (2019), it reported that the utilisation of outpatient healthcare services was lower compared to the previous NHMS studies (12.6% in NHMS 2011, 9.0% in NHMS 2015, and 8.1% in NHMS 2019). In the past eight years, there was a decline in outpatient healthcare utilisation by 4.5% and this contradicted with the global trend in which there were some studies indicated that outpatient healthcare services would replace inpatient healthcare services. Based on the same report, it also stated that when the awareness among the population increased, they would have a better understanding of their health status and thus empower them to make decisions for themselves and avoid unnecessary outpatient visits.

2.4 Socio-Demographic Characteristics

There was a study conducted by Bodur, Filiz, and Kalkan (2017) stated that demographic variables such as gender, age, education level, and income level were associated with the level of health literacy. Also, according to Madyaningrum, Chuang, and Chuang (2018), they stated that socio-demographic and cultural factors, finance, and the availability of regional resources could affect outpatient healthcare utilisation. Therefore, in this study, the researcher would like to determine the relationship between socio-demographic characteristics towards health literacy and frequency of outpatient healthcare utilisation among undergraduate students.

2.4.1 Gender

According to Bodur, Filiz, and Kalkan (2017), they found out that women were having a better understanding of health-related information given by healthcare providers compared to men. This was probably because the frequency of healthcare services utilization was high in women compared to men. Moreover, based on a study conducted by Clouston, Manganello, and Richards (2016), they reported that the performance of women on health literacy was better than men in which only 40% of the women were having poor health literacy as compared with 50% of men.

Furthermore, NHMS (2019) reported that women had higher utilisation of outpatient healthcare as compared to men.

2.4.2 Age

Based on the study conducted by Berens, Vogt, Messer, Hurrelmann, and Schaeffer (2016), they mentioned that the population that had limited health literacy increased by age. In their study, 47.3% of the respondent aged 15 to 29 years were showing limited health literacy and those aged 30 to 45 years were 47.2%. 55.2% of the respondent aged 46 to 64 years were having limited health literacy and 66.4% for respondents aged 65 years and above. Moreover, better general health literacy had a significant association with younger age (Toçi, Burazeri, Myftiu, Sørensen & Brand, 2015). Furthermore, according to Rathnakar et al. (2013), they stated that individuals with young age showed better health literacy levels compared to individuals aged 25 years old and above.

Moreover, in general, those respondents aged 55 years old and above utilised outpatient healthcare more than the younger aged group especially those aged 75 years old and above were having the highest utilisation (NHMS, 2019). Also, outpatient care needs were likely to increase as the population ages (Madyaningrum, Chuang & Chuang, 2018).

2.4.3 Year of Study

Based on a study conducted by Uysal, Ceylan, and Koç (2019), they reported that there was no significant relationship between health literacy and the school year. In contrast, according to Zhang et al. (2016), they mentioned that among the medical university students in Chongqing, China, Grade Three students were having the highest health literacy questionnaire (HLQ) score meanwhile Grade One students were having the lowest score. Furthermore, according to Rong et al. (2017), they stated that senior students were significantly having a higher health literacy level as compared to junior students.

2.4.4 Education Programme and Faculty

According to Gallè et al. (2020), they stated that there was an association between health literacy and the healthcare educational field even if the healthcare students had shown a lower adherence to healthy behaviours than their counterparts. Furthermore, there was a study conducted by Uysal, Ceylan, and Koç (2019) stated that nursing students were having a higher level of health literacy in all subscales when compared to other non-health-related departments. The reason was that studying health-related

courses could instil higher health literacy in the nursing students compared to non-nursing students according to the research. Therefore, students who took health-related courses generally would have higher health literacy because they were exposing to health-related subjects and gaining more health knowledge.

In addition, NHMS (2019) stated that respondents with no formal education had the most utilisation of outpatient healthcare as compared to other levels of education.

2.4.5 Household Income

In a study conducted by Cho, Lee, Lim, and Lee (2020), they stated the health literacy was low among people with a low-income level. This was because the income level represented an index and a factor that decided the socioeconomic status of an individual, and the lower the income level, the harder it was for them to concern their health status. Furthermore, according to Silbersdorff, Lynch, Klasen, and Kneib (2018), they stated that the risk of having bad health outcomes was strongly related to the income level. Therefore, health literacy in an individual could be affected by their poverty or income level.

Moreover, those in household income quintile Q1 (20% poorest) utilised the outpatient healthcare services the most (NHMS, 2019).

2.4.6 Health Problem

Based on a study conducted by Edwards, Wood, Davies, and Edwards (2012), they stated that "becoming health literate is an ongoing process that develops over time through a range of health experiences and encounters within different health contexts". In the same study, the authors also mentioned that "patients with a long-term condition can develop health literacy skills over time and put their skills into practice in becoming more active in healthcare consultations".

On the other hand, there was a study conducted by Madyaningrum, Chuang, and Chuang (2018) reported that having more chronic diseases was correlated to a higher frequency of outpatient healthcare utilisation.

2.4.7 Close Relationship with Family Members who work as Healthcare Staff

According to a study done by Kutner, Greenberg, Jin, and Paulsen (2006), they stated that a higher number of adults obtained health information from family members or friends. However, a study conducted by Oedekoven et al. (2019) suggested that an individual's health literacy had a firm relationship to the concepts of self-efficacy and action planning in the context of health and health behaviours.

2.5 Relationship between Health Literacy and Frequency of Outpatient Healthcare Utilisation

Based on a study done by Cho, Lee, Arozullah, and Crittenden (2008), they stated that health literacy was having direct effects on an individual's health status and the utilisation of hospital and emergency room. In addition, Javadzade et al. (2012) reported that the reasons for individuals to visit outpatient healthcare were thoroughly different. The study stated that individuals with adequate health literacy had more outpatient visits for screening tests and checkups; however, inadequate health literacy individuals had more outpatient healthcare visits because of their diseases and health problems. Furthermore, according to a study conducted by Rasu, Bawa, Suminski, Snella, and Warady (2015), they stated that for all types of visits, individuals with below basic or basic health literacy averaged showed the most visits compared to individuals with above basic health literacy. Also, Viktorsson, Yngman-Uhlin, Törnvall, and Falk (2019) stated that there was an association between young adults' reliance on the healthcare system and health literacy.

2.6 Conceptual Framework

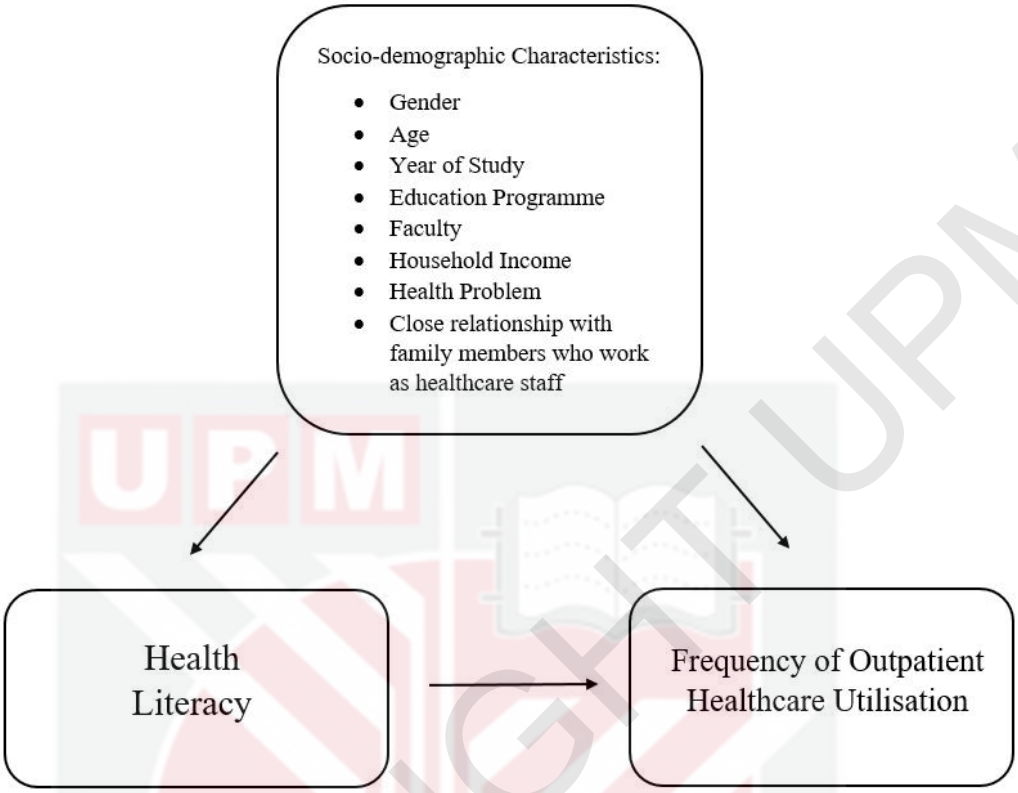

Figure 2.1: Conceptual Framework

The diagram above showed the relationship between socio-demographic characteristics, health literacy, and frequency of outpatient healthcare utilisation. Health literacy and socio- demographic characteristics such as gender, age, year of study, education programme, faculty, household income, health problem and close relationship with family members who work as healthcare staff were the independent variables (IV) meanwhile frequency of outpatient healthcare utilisation was the dependent variable (DV).

In the diagram, two arrows were pointing towards the frequency of outpatient healthcare utilisation in which that the two variables could influence the frequency of outpatient healthcare utilisation among undergraduate students in UPM.

CHAPTER 3

METHOD

3.1 Introduction

This chapter described the methods used in this study of the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in UPM, Selangor. It included study design, study location, study population, study duration, sampling method, study instrument, data collection, and data analysis.

3.2 Study Design

This study was conducted by using quantitative research method in which the undergraduate students was given a set of the questionnaire via google form to answer during the data collection.

A cross-sectional study was carried out to investigate the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in UPM, Selangor. The data was collected at a single point in time and it required low cost.

3.3 Study Location

The study was conducted at UPM, Selangor. According to Prospectus Universiti Putra Malaysia (2020), it stated that UPM was a multidisciplinary university with 89-year of history. It was located approximately 22 kilometres from Malaysia's capital city, Kuala Lumpur. Besides that, UPM was one of the five designated Research universities (RU) in Malaysia that was deeply committed to the discovery and distribution of knowledge. UPM was well-known as one of the more distinguished universities in Malaysia. It had more than 27561 students enrolled in 82 bachelors, 7 diplomas, 62 coursework programmes and 5 research programmes at Masters and PhD levels.

There were 15 faculties in UPM; however, only 5 faculties were selected. The selection of faculties was done by using the coin tossing method and all the faculties were having an equal probability to be selected in this study. Hence, the 5 selected faculties were Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Veterinary Medicine, Faculty of Human Ecology, and Faculty of Design and Architecture in Universiti Putra Malaysia (UPM). However, the researcher could not obtain the approval to collect data from the Faculty of Veterinary Medicine's dean. Hence, the Faculty of Veterinary Medicine was automatically removed from the 5 selected faculties.

3.4 Study Population

3.4.1 Target Population

The study population for this study was the Year 1 to Year 4 undergraduate students from the Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Human Ecology and Faculty of Design and Architecture in UPM.

3.4.2 Inclusion Criteria

- Malaysian
- Undergraduates students from Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Human Ecology, and Faculty of Design and Architecture
- Year 1 to Year 4

3.4.3 Exclusion Criteria

- Part-time undergraduates students
- Undergraduate students on long medical leave or holiday

3.5 Study Duration

This study was carried out from October 2020 to September 2021 and the data was collected from July 2021 to September 2021.

3.6 Sample Size

In this study, the sample size was calculated by using two-sample proportions. The proportions required were obtained from the previous studies. This sample size calculation gave us the recommended sample size required to determine the difference between the two proportions.

Two Proportions Sample Size Calculation,

$$n = (Z_{\alpha/2} + Z_{\beta})^2 (p_1 (1-p_1) + p_2 (1-p_2)) / (p_1-p_2)^2$$

Where,

n = required sample size in each group (i.e. = 1,2)

$Z_{\alpha/2}$ = value of the normal distribution at α/2 (e.g. for a confidence level of 95%, α is 0.05 and the value is 1.96)

Z_{β} = value of the normal distribution at β (e.g. for a power of 80%, β is 0.2 and the value is 0.84)

p_1 and p_2 = expected sample proportions of the two groups

Firstly, the sample size for calculating two population proportions which the p_1 = 5.7% (0.057) was the proportion of students with a medical background which have high health literacy in a study, "Exploring Health Literacy in Medical University Students of Chongqing, China: A Cross-Sectional Study conducted by Zhang et al. (2016) meanwhile p_2 = 24.3% (0.243) was the proportion of public which have excellent health literacy level obtained from National Health and Morbidity Survey (NHMS) 2019: Vol 1: NCDs – Non-Communicable Diseases: Risk Factors and other Health Problems.

Sample size was calculated as below:

$$n = (Z_{\alpha/2} + Z_{\beta})^2 (p_1 (1-p_1) + p_2 (1-p_2)) / (p_1-p_2)^2$$

$$n = ((1.96 + 0.82)^2) (0.057 (1-0.057) + 0.243(1-0.243)) / (0.057-0.243)^2$$

$$n = 53.1$$

$$n \approx 53$$

Addition of 10% of participants who refuse to participate in this study

$$n = 53 + 10\%$$

$$n = 58.3$$

$$n \approx 58$$

Next, the sample size for calculating two population proportions which the p_1 = 18.1% (0.181) was the proportion of students which medical and health sciences backgrounds who had received outpatient healthcare in a study, "Students' Utilization of Health Services: A Hospital-Based Study in Mansoura University, Egypt conducted by El-Gilany, El-Masry and Badawy (2014). On the other hand, p_2 = 8.1% (0.081) was the proportion of the public who had received outpatient healthcare obtained from National Health and Morbidity Survey (NHMS) 2019: Vol II: Healthcare Demand.

Sample size was calculated as below:

$$n = (Z_{\alpha/2} + Z_{\beta})^2 (p_1 (1-p_1) + p_2 (1-p_2)) / (p_1-p_2)^2$$

$$n = ((1.96 + 0.84)^2) (0.181(1-0.181) +0.081(1-0.081)) / (0.181-0.081)^2$$

$$n = 174.5$$

$$n \approx 175$$

Addition of 10% of participants who refuse to participate in this study

$$n = 175 + 10\%$$

$$n = 192.5$$

$$n \approx 193$$

The highest number of calculations was chosen to cover the population of undergraduate students from 4 selected faculties in UPM. Thus, 193 undergraduate students who met the eligibility criteria were recruited as participants of this study.

3.7 Sampling Method

Firstly, the researcher listed out all the 15 faculties in UPM, Selangor. After that, the researcher used simple random sampling to select the faculty to be involved in this study. It was a type of probability sampling method in which each member of the statistical population has an equal probability to be selected as the representative of the group (Hayes, 2020). The faculties were selected by using the coin tossing method. The list of faculties was obtained from Universiti Putra Malaysia (UPM) Facts & Figures (2020). The selection of faculties was shown in the table below:

Table 3.1: Results of selected faculties by using coin tossing method

No.	Faculty	Coin Tossing Results
1.	Faculty of Agriculture	Heads
2.	Faculty of Science	Tails
3.	Faculty of Engineering	Tails
4.	Faculty of Educational Studies	Tails
5.	Faculty of Food Science and Technology	Heads
6.	Faculty of Forestry and Environment	Tails
7.	Faculty of Veterinary Medicine	Heads
8.	Faculty of Human Ecology	Heads
9.	Faculty of Modern Languages and Communication	Tails
10.	Faculty of Design and Architecture	Heads

11.	Faculty of Medicine and Health Sciences	Tails
12.	Faculty of Computer Science and Information Technologies	Tails
13.	Faculty of Biotechnology and Biomolecular Sciences	Tails
14.	Faculty of Agriculture Science and Forestry	Tails
15.	Faculty of Humanity, Management, and Science	Tails

Heads indicated that the faculty was accepted and involved in this study meanwhile tails indicated that the faculty was rejected. Since the researcher could not obtain permission to collect data from the Faculty of Veterinary Medicine's dean, hence this faculty was removed from the selected faculties list. Therefore, the final selected faculties were the Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Human Ecology, and Faculty of Design and Architecture.

Furthermore, because of the pandemic COVID-19 and the restriction to access undergraduate students' data from each faculty's dean due to privacy issues, the researcher could not obtain the undergraduate students' name list and contact details to choose the participants randomly. Thus, the researcher changed the sampling method from simple random sampling to convenience sampling for the data collection. Convenience sampling was a non-probability sampling in which the target population that meets the practical criteria, for instance, easy accessibility and the willingness to participate was included in the study (Dörnye, 2007).

After obtaining permission to collect data from the selected faculties, the researcher had requested the undergraduate students' names and contact details. Unfortunately, due to privacy issues, all the selected faculties did not allow the researcher to get the information. Therefore, the researcher sent the questionnaire google link to all the faculty deans and asked their help to share the google link with all of their students. When the respective faculties did not have enough participants, the researcher approached several undergraduate students from the selected faculties and asked their help to fill in the google link and share it with their friends.

3.8 Study Instrument

The questionnaire used in this research consists of three parts. The first part was related to participants' socio-demographic information such as gender, age, year of study, education programme, faculty, household income, health problem, and any close relationship with family members who work as healthcare staff.

The second part of the questionnaire was the questions about health literacy. The participant's health literacy will be assessed by using HLS-M-Q18. HLS-M-Q18 was adopted from a study entitled "Establishing the HLS-M-Q18 short version of the European health literacy survey questionnaire for the Malaysian context". This article was published by Mohamad et al. (2020) at BMC Public Health. This instrument was a short adapted version of the questionnaire HLS-EU-Q47 developed by Sorensen et al. (2013). This questionnaire consisted of 18 items that cover 9 sub-dimensions (dimensions such as obtaining, understanding, or appraising the information and application relevant to healthcare, disease prevention, and health

promotion). The perceived difficulty of each item was rated by using a 4-point Likert scale (Very difficult = 1, fairly difficult = 2, fairly easy = 3, and very easy = 4), with a possible lowest mean score of 1 and a possible highest mean score of 4. Hence, the mean score ranged from 1 to 4, and the range of the mean score was (4-1 = 3). The indices for health literature were standardized to unified metrics with a minimum score of 0 and a maximum score of 50 by using the formula: Index = (mean – 1)*(50/3). According to Sorensen et al. (2015), the four levels of health literacy were calculated according to this metric as shown below:

Table 3.2: Health Literacy Level

Index Scores	**Description**	
0 – 25	Inadequate Health Literacy	To identify the vulnerable groups, the inadequate and problematic levels combined to become one level which was Limited Health Literacy (0 -33).
>25 – 33	Problematic Health Literacy	
>33 – 42	Sufficient Health Literacy	Sufficient Health Literacy
>42 - 50	Excellent Health Literacy	Excellent Health Literacy

The third part of the questionnaire was the questions about the frequency of outpatient healthcare utilisation. Question 1 was asking about the frequency of outpatient healthcare utilisation in the previous 6 months. There were 5 choices for the participant to choose which were never, 1 to 3 times, 4 to 6 times, 7 to 9 times, and more than 9 times. Next, question 2 was asking about the types of services that the participant received when visiting the outpatient facilities in the previous 6 months. There were 4 choices for them to choose which were health problems, follow-up, medical check-up, and others. If the participant was choosing others, they were required to write down the types of services. Moreover, questions 3 and 4 were asking about the participant's perception if they have any queries about their health or experience any health problems will they seek medical advice or visit the outpatient healthcare. They needed to rate from 0 to 10 (0 = Extremely No and 10 = Extremely Yes).

3.9 Pre-test

A pre-test was conducted among the undergraduate students in UPM, Selangor. 10% of the estimated sample size was chosen to answer the questionnaire. Hence, 20 undergraduate students participated in this pre-test. The findings from the pre-test was reviewed by the supervisor and co-supervisor. The 10% of participants were removed automatically from the actual data collection.

3.10 Variability and Reliability

The questionnaire was modified by the researcher. This was to ensure that the questionnaire was suited to the context of the study related to the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in UPM, Selangor. Hence, the questionnaire needed to have a pre-test to determine its validity and reliability.

Firstly, the researcher used face validity whereby the questionnaire was checked and revised by the supervisor. Next, the researcher used content validity. The questionnaire was found to be appropriate with the scale level content validity index (S-CVI) of 0.928 for Part B Health Literacy and 0.975 for Part C Frequency of Outpatient Healthcare Utilisation.

Next, Cronbach's alpha (α) test was used to measure the reliability of the questionnaire. 10% of the actual participants were selected to participate in this pre-test. The results from the pre-test were analyzed by using the Statistical Packages for Social Sciences (SPSS) version 22.0 to get the Cronbach's alpha (α) value. The result showed that Part B Health Literacy in the questionnaire was good and acceptable with the Cronbach's alpha value of 0.884. Since Part C Frequency of Outpatient Healthcare Utilisation in the questionnaire did not have internal consistency, hence the result was calculated from test-retest. The value of Intraclass Correlation Coefficient (ICC) value was classified into different agreement such as ≤ 0.50 = poor, 0.51 – 0.74 = Moderate, 0.75 – 0.90 = Good and ≥ 0.91 = Excellent.

The results of the Intraclass Correlation Coefficient value from each respective item were shown in the table below:

Table 3.3: Results of Intraclass Correlation Coefficient value for Part C Frequency of Outpatient Healthcare Utilisation in the questionnaire

Items	Intraclass Correlation Coefficient value	Agreement
Frequency of Outpatient Healthcare Utilisation	0.979	Excellent
Reason to Visit Outpatient Healthcare	0.959	Excellent
Rate for Seeking Medical Advice	0.871	Good
Rate for Visiting Outpatient Healthcare	0.779	Good

3.11 Date Collection Flowchart

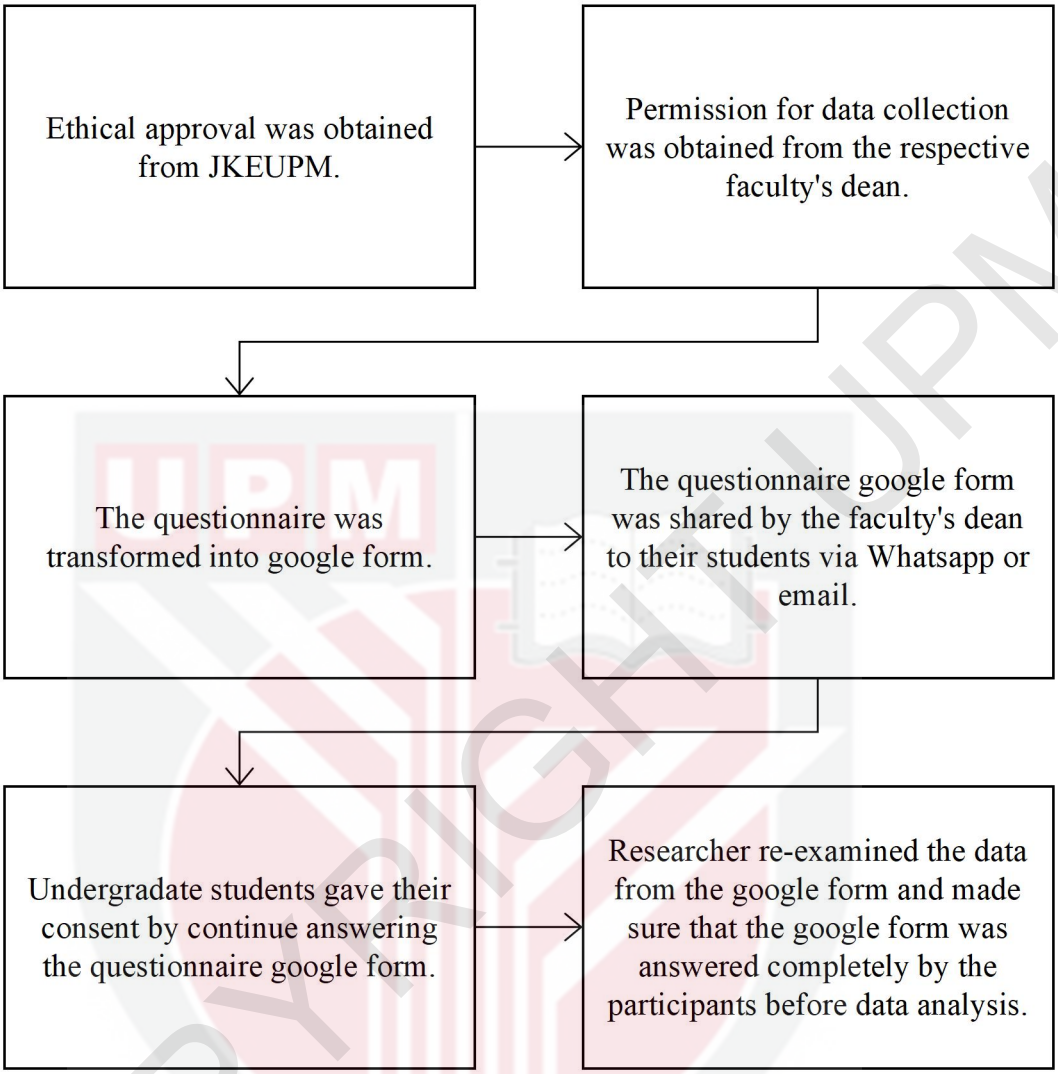

Figure 3.1: Data Collection Flowchart

After obtaining the ethical approval from *Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia* (JKEUPM), the researcher gained the permission for data collection among undergraduate students in the Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Human Ecology, and Faculty of Design and Architecture by submitting an official letter to the faculty dean. After getting the permission, the researcher shared the google form with the respective

faculty dean, and the faculty dean shared it with their students via Whatsapp or email. When the respective faculty did not have enough participants, the researcher approached several undergraduate students from the selected faculties and asked their help to fill in the google link and share it with their friends. The undergraduate students gave their consent by continue answering the questionnaire. The researcher re-examined the data from the google form and made sure that the google form was answered completely by the participants before data analysis. The google form was not included in the data analysis if the participant did not answer it completely.

3.12 Data Analysis

Data analysis was done by using Statistical Analysis Package for Social Sciences (SPSS for Windows version 22.0). The suitable statistical procedures used were depending on the study objectives. It was analyzed by using descriptive statistics and inferential analysis.

Table 3.4: Types of descriptive and inferential analysis.

Socio-demographic Data			
Objectives	**Variables**	**Type of Data**	**Presentation of Data**
To determine the socio-demographic characteristics among undergraduate students.	Gender	Categorical	Frequency and percentage
	Age	Numerical	Mean and standard deviation
	Year of Study	Categorical	Frequency and percentage
	Faculty	Categorical	Frequency and percentage
	Education Programme	Categorical	Frequency and percentage
	Household Income	Categorical	Frequency and percentage

	Health Problem	Categorical	Frequency and percentage
	Close relationship with family members who work as healthcare staff	Categorical	Frequency and percentage
Descriptive Data			
Objectives	**Variables**	**Type of Data**	**Presentation of Data**
To determine the health literacy level among undergraduate students.	Health Literacy Index Score	Continuous	Mean and standard deviation
	Health Literacy Level	Categorical	Frequency and percentage
To determine the frequency of outpatient healthcare utilisation among undergraduate students.	Frequency of outpatient healthcare utilisation	Categorical	Frequency and percentage

Inferential Data			
Objectives	**Dependent Variable**	**Independent Variable**	**Presentation of Data**
To determine the relationship between socio-demographic and health literacy among undergraduate students	Health literacy (Categorical)	Socio-demographic characteristics (Categorical): • Gender • Year of study • Faculty • Education programme • Household income • Health problem • Close relationship with family members who work as healthcare	Pearson Chi-Square

		staff	
	Health Literacy (Categorical)	Sociodemographic characteristics (Continuous): • Age	Point-Biserial Correlation
To determine the relationship between socio-demographic characteristics and frequency of outpatient healthcare utilisation among undergraduate students.	Frequency of outpatient healthcare utilisation (Categorical)	Socio-demographic characteristics (Categorical): • Gender • Year of study • Faculty • Education programme • Household income • Health problem • Close relationship with family	Pearson Chi-Square

		members who work as healthcare staff	
	Frequency of outpatient healthcare utilisation (Categorical)	Socio-demographic characteristics (Continuous): • Age	Point-Biserial Correlation
To determine the relationship between health literacy and the frequency of outpatient healthcare utilisation among undergraduate students.	Frequency of outpatient healthcare utilisation (Categorical)	Health Literacy (Categorical)	Pearson Chi-Square

3.13 Expected Outcome

It was expected that there was an association between socio-demographic characteristics, health literacy, and frequency of outpatient healthcare utilisation. Also, this study allowed the researcher to determine the health literary level and the frequency of outpatient healthcare utilisation among undergraduate students in UPM. Undergraduates students with a high level of health literacy were expected to have a better health outcome and low frequency of outpatient healthcare utilisation.

3.14 Ethical Consideration

The ethical approval for this study was obtained from *Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia* (JKEUPM). A permission letter for data collection among undergraduate students was submitted to the dean from the Faculty of Agriculture, Faculty of Food Science and Technology, Faculty of Veterinary Medicine, Faculty of Human Ecology, and Faculty of Design and Architecture. However, the researcher could not obtain the approval to collect data from the Faculty of Veterinary Medicine dean. Hence, the Faculty of Veterinary Medicine was automatically removed from the 5 selected faculties.

The participants participated in this study by clicking the google form link that shared by the respective faculties dean via Whatsapp or email. The Participant Information Sheet (PIS) was included in the google form. All the participants were given adequate information about the study and their participation was voluntary. After reading the PIS, participants gave their consent by continue answering the google form. Participants had the right to withdraw from the study at any time by not

completing or submitting the questionnaire. There was no identifying information such as name, identification card number was obtained from this study. This was to ensure that the participant's identity was remained anonymous and confidential. The data collected was kept in a secured facility that only can be seen by the researcher and the supervisor. The researcher will keep the data for at least five years and permanently deleted or destroyed it after that period.

CHAPTER 4

RESULTS

4.1 Introduction

The questionnaire used in this research consisted of three parts (Part A, Part B, and Part C). Part A was related to participants' socio-demographic information. Part B was the questions about health literacy and Part C was the questions about the frequency of outpatient healthcare utilisation. This chapter consisted of the descriptive data for these three parts and it was presented in table form. Moreover, the association between these three parts was also determined in this chapter.

4.2 Socio-Demographic Characteristics of Participants

A total of 155 undergraduate students were included in this study. Majority of the participants were female (74.2%). The mean age of the participants was 22.45 with a standard deviation of 1.397. In addition, the number of participants attaining Year 1, Year 2, Year 3, and Year 4 were 21.9%, 16.8%, 29.0%, and 32.3% respectively. For faculty, 27.1% of participants were studied at both Faculty of Agriculture and Faculty of Food Science and Technology. 24.5% were studied at the Faculty of Design and Architecture and 21.3% were studied at the Faculty of Human Ecology. Moreover, 18 education programmes were involved in this study. The majority of the participants had studied Bachelor of Landscape Architecture with Honours (12.9%) and the minority of the participants had studied Bachelor of Science in Food Manufacturing Operations with Honours and Bachelor of Human Development Science with Management (0.6%) respectively. Furthermore, the highest number of participants was having household income between RM1000 to RM3000 (47.1%).

13.5% of the participants were having household incomes less than RM 1000 and 39.4% of the participants were having household incomes more than RM 3000. Moreover, majority of the participants were not having any health problems (90.3%) and close relationship with any family members who worked as healthcare staff (71.6%). Details of the data as described in Table 4.1.

Table 4.1 Descriptive analysis of participant's socio-demographic characteristics (n = 155)

Socio-demographic Characteristics	Frequency (n)	Percentage (%)	Mean	Standard Deviation
Gender				
Male	40	25.8		
Female	115	74.2		
Age			22.45	1.397
Year of study				
Year 1	34	21.9		
Year 2	26	16.8		
Year 3	45	29.0		
Year 4	50	32.3		
Faculty				
Faculty of Agriculture	42	27.1		
Faculty of Food Science and Technology	42	27.1		
Faculty of Design and Architecture	38	24.5		
Faculty of Human Ecology	33	21.3		

Socio-demographic Characteristics	Frequency (n)	Percentage (%)	Mean	Standard Deviation
Education programme				
Bachelor of Agricultural Science with Honours	9	5.8		
Bachelor of Horticultural Science with Honours	8	5.2		
Bachelor of Science in Agribusiness with Honours	8	5.2		
Bachelor of Science in Aquaculture with Honours	3	1.9		
Bachelor of Agriculture in Animal Science with Honours	11	7.1		
Bachelor of Science Plantation Management with Honours	3	1.9		
Bachelor of Science (Food Service Management) with Honours	12	7.7		
Bachelor of Food Science and Technology with Honours	13	8.4		
Bachelor of Science (Food Studies) with Honours	16	10.3		
Bachelor of Science in Food Manufacturing Operations with Honours	1	0.6		
Bachelor of Landscape Architecture with Honours	20	12.9		
Bachelor of Science in Architecture with Honours	6	3.9		
Bachelor of Design (Industrial Design) with Honours	12	7.7		
Bachelor of Human Development Science	6	3.9		

Socio-demographic Characteristics	Frequency (n)	Percentage (%)	Mean	Standard Deviation
Education Programme				
Bachelor of Human Development Science with Management	1	0.6		
Bachelor of Human Development Science with Information Technology	11	7.1		
Bachelor of Consumer Studies	6	3.9		
Bachelor of Music	9	5.8		
Household income				
Less than RM 1000	21	13.5		
RM 1000 – RM 3000	73	47.1		
More than RM 3000	61	39.4		
Health problem				
Absent	140	90.3		
Present	15	9.7		
Any close relationship with family members who work as healthcare staff				
Yes	44	28.4		
No	111	71.6		

4.3 Health Literacy Level

Health literacy among undergraduate students was assessed by using HLS-M-Q18. HLS-M-Q18 was a short version of the questionnaire HLS-EU-Q47 developed by Sorensen et al. (2013). It was divided into three domains which were (1) healthcare, (2) disease prevention, and (3) health promotion. In the healthcare domain, there were more than half (54.2%) of the total participants felt that it was fairly easy to call an ambulance in an emergency. There were almost half (48.4%) of the total participants felt that it was fairly easy to judge the need to get a second opinion from another doctor. Also, 41.3% of the participants felt that it was fairly easy to understand what to do in a medical emergency. There were more than half (54.2%) of the total participants felt that it was very easy to follow the instruction from the doctor or pharmacist. Next, 55.5% of participants felt that it was fairly easy to judge how information from the doctor applied to them. Almost half (45.8%) of the total participants felt that it was fairly easy to understand the leaflets that come with the medicine.

In the health promotion domain, there were almost half (47.1%) of the participants felt that it was very easy to understand the information in the media such as the internet, newspaper, magazine on how to get healthier. Moreover, 55.5% of the participants felt that it was fairly easy to judge where their life such as community and residential area affects their health and wellbeing and 52.3% of the participants felt that it was fairly easy to judge how their housing conditions help them to stay healthy. Almost half (43.9%) of the total participants felt that it was fairly easy for them to take part in activities that improve health and wellbeing in their community meanwhile there were more than half (51.6%) of the total participants felt that it was

fairly easy to understand advice on health from family members or friends. Also, there were more than half (52.9%) of the total participants felt that it was easy for them to make decisions to improve their health.

In the health prevention domain, more than half (60%) of the total participants felt that it was very easy for them to understand health warnings about behaviour such as smoking, low physical activity, unhealthy food consumption, and drinking too much. Almost half (49%) of the total participants felt that it was fairly easy for them to find information on how to manage mental health problems like stress or depression. Moreover, 45.2% of the participants felt that it was fairly easy for them to understand why they need health screenings such as obesity screening test, cervical cancer screening test, HIV screening test, breast examination, blood sugar test, blood pressure, and cholesterol test. Half (50.3%) of the participants found that it was fairly easy for them to find information about vaccinations and health screenings that they should have. Furthermore, 43.9% of the participants found that it was fairly easy for them to judge which health screenings they should have and 49% of the participants felt that it was fairly easy for them to judge when they need to go to a doctor for a check-up. Details of the data as described in Table 4.2.

Table 4.2 Health Literacy Scale Responses (n = 155)

	Questions	Very Difficult, n (%)	Fairly Difficult, n (%)	Fairly Easy, n (%)	Very Easy, n (%)
	Healthcare				
1.	How easy it is for you to call an ambulance in an emergency?	2 (1.3)	28 (18.1)	84 (54.2)	41 (26.5)
2.	How easy it is for you to judge when you may need to get a second opinion from another doctor?	2 (1.3)	57 (36.8)	75 (48.4)	21 (13.5)
3.	How easy it is for you to understand what to do in a medical emergency?	8 (5.2)	58 (37.4)	64 (41.3)	25 (16.1)
4.	How easy it is for you to follow instructions from your doctor or pharmacist?	1 (0.6)	10 (6.5)	60 (38.7)	84 (54.2)
5.	How easy it is for you to judge how information from your doctor applies to you?	0 (0)	31 (20.0)	86 (55.5)	38 (24.5)
6.	How easy it is for you to understand the leaflets that come with your medicine?	0 (0)	30 (19.4)	71 (45.8)	54 (34.8)
	Health Promotion				
7.	How easy it is for you to understand the information in the media (internet, newspaper, magazine) on how to get healthier?	0 (0)	11 (7.1)	71 (45.8)	73 (47.1)
8.	How easy it is for you to judge where your life (community, residential area) affects your health and wellbeing?	1 (0.6)	28 (18.1)	86 (55.5)	40 (25.8)
9.	How easy it is for you to judge how your housing conditions help you to stay healthy?	1 (0.6)	28 (18.1)	81 (52.3)	45 (29.0)
10.	How easy it is for you to take part in activities that improve health and wellbeing in your community?	7 (4.5)	37 (23.9)	68 (43.9)	43 (27.7)
11.	How easy it is for you to understand advice on health from family members or friends?	1 (0.6)	13 (8.4)	80 (51.6)	61 (39.4)
12.	How easy it is for you to make decisions to improve your health?	1 (0.6)	20 (12.9)	82 (52.9)	52 (33.5)

	Questions	Very Difficult, n (%)	Fairly Difficult, n (%)	Fairly Easy, n (%)	Very Easy, n (%)
	Health Prevention				
13.	How easy it is for you to understand health warnings about behaviour such as smoking, low physical activity, unhealthy food consumption, and drinking too much?	0 (0)	6 (3.9)	56 (36.1)	93 (60.0)
14.	How easy it is for you to find information on how to manage mental health problems like stress or depression?	5 (3.2)	20 (12.9)	76 (49.0)	54 (34.8)
15.	How easy it is for you to understand why you need health screenings? (obesity screening test, cervical cancer screening test, HIV screening test, breast examination, blood sugar test, blood pressure and cholesterol test)	2 (1.3)	22 (14.2)	70 (45.2)	61 (39.4)
16.	How easy it is for you to find information about vaccinations and health screenings that you should have?	3 (1.9)	14 (9.0)	78 (50.3)	60 (38.7)
17.	How easy it is for you to judge which health screenings you should have (obesity screening test, cervical cancer screening test, HIV screening test, breast examination, blood sugar test, blood pressure and cholesterol test)?	8 (5.2)	46 (29.7)	68 (43.9)	33 (21.3)
18.	How easy it is for you to judge when you need to go to a doctor for a checkup?	4 (2.6)	44 (28.4)	76 (49.0)	31 (20.0)

HLS-M-Q18 index score was the combination of three domains which were healthcare, health promotion, and health prevention. The indices for health literacy were standardized to unified metrics with a minimum score of 0 and a maximum score of 50. Furthermore, the HLS-M-Q18 index score was then classified into three levels which were limited health literacy, sufficient health literacy, and excellent health literacy. The mean for the HLS-M-Q18 index score was 38.91 with a standard deviation of 5.601. For the health literacy level, more than half (57.4%) of the total participants were having sufficient health literacy. 16.1% of the participants were having limited health literacy and 26.5% of the participants were having excellent health literacy. Details of the data as described in Table 4.3.

Table 4.3 Descriptive analysis of participant's health literacy level (n = 155)

	Frequency (n)	Percentage (%)	Mean	Standard Deviation
HLS-M-Q18 Index Score			38.91	5.601
Health Literacy Level				
Limited Health Literacy	25	16.1		
Sufficient Health Literacy	89	57.4		
Excellent Health Literacy	41	26.5		

4.4 Frequency of Outpatient Healthcare Utilisation

Based on the result, almost half of the participants (48.4%) never visit the outpatient healthcare facilities (public or private hospital, clinics, or University Health Centre, UPM) in the previous 6 months. Only one participant (0.6%) visited the outpatient healthcare facilities more than 9 times in the previous 6 months. Details of the data as described in Table 4.4.

There were 33.5% of the participants who visited the outpatient healthcare facilities due to health problems. Moreover, there were 15 participants (9.7%) who went to outpatient healthcare facilities for medical check-up and 11 participants (7.1%) went for a follow-up. Only two participants (1.3%) went to outpatient healthcare facilities to have their vaccinations. Also, 48.4% of participants never visit the outpatient healthcare facilities in the previous 6 months, hence this question did not apply to them. Details of the data as described in Table 4.5.

Furthermore, more than half of the participants (66.5%) were having a high perception to seek medical advice when they had queries about their health meanwhile more than half of the participants (67.1%) were having high perception to visit the outpatient healthcare to seek for treatment if they had any health problem. Details of the data as described in Table 4.6 and Table 4.7.

Table 4.4 Descriptive analysis of questions for frequency of outpatient healthcare utilisation (n = 155)

Question	Frequency (n)	Percentage (%)
How many times did you visit outpatient healthcare facilities (public or private hospital, clinics, or University Health Centre, UPM) in the previous 6 months?		
Never	75	48.4
1 – 3 times	72	46.5
4 – 6 times	7	4.5
7 – 9 times	0	0
More than 9 times	1	0.6

Table 4.5 Descriptive analysis of questions for the type of services that participants received when visiting the outpatient facilities (n = 155)

Questions	Frequency (n)	Percentage (%)
What is the type of service that you received when visiting the outpatient facilities in the previous 6 months?		
Never visit outpatient facilities	75	48.4
Health Problem	52	33.5
Follow-up	11	7.1
Medical check up	15	9.7
Others	2	1.3

Table 4.6 Descriptive analysis of questions for participants' perception to seek medical advice (n = 155)

Questions	Frequency (n)	Percentage (%)
If you have any queries about your health, will you seek medical advice?		
Low Perception	2	1.3
Moderate Perception	50	32.3
High Perception	103	66.5

Table 4.7 Descriptive analysis of questions for participants' perception on the utilisation of outpatient healthcare (n = 155)

Questions	Frequency (n)	Percentage (%)
If you have any health problems, will you visit outpatient healthcare to seek treatment?		
Low Perception	2	1.3
Moderate Perception	49	31.6
High Perception	104	67.1

4.5 Relationship between socio-demographic characteristics and health literacy

Based on the result, the socio-demographic characteristics such as gender, age, year of study, faculty, education programme, household income, health problem, and close relationship with family members who worked as healthcare staff were not significantly associated with health literacy. Details of the data as described in Table 4.8.

Table 4.8 Distribution of relationship between socio-demographic characteristics and health literacy (n = 155)

Socio-demographic characteristics	Health Literacy					
	r	Limited Health Literacy	Sufficient Health Literacy	Excellent Health Literacy	χ^2 (df)	p-value
Gender					5.117 (2)	0.077[a]
Male		2 (5.0)	27 (67.5)	11 (27.5)		
Female		23 (20.0)	62 (53.9)	30 (26.1)		
Age	-0.009					0.913[b]
Year of Study					0.743 (6)	0.994[a]
Year 1		5 (14.7)	19 (55.9)	10 (29.4)		
Year 2		5 (19.2)	15 (57.7)	6 (23.1)		
Year 3		8 (17.8)	25 (55.6)	12 (26.7)		
Year 4		7 (14.0)	30 (60.0)	13 (26.0)		

Socio-demographic characteristics	Health Literacy					
	r	Limited Health Literacy	Sufficient Health Literacy	Excellent Health Literacy	χ^2 (df)	p-value
Faculty					5.592 (6)	0.470[a]
Faculty of Agriculture		3 (7.1)	26 (61.9)	13 (31.0)		
Faculty of Food Science and Technology		8 (19.0)	24 (57.1)	10 (23.8)		
Faculty of Design and Architecture		9 (23.7)	18 (47.4)	11 (28.9)		
Faculty of Human Ecology		5 (15.2)	21 (63.6)	7 (21.2)		
Education programme					32.519 (34)	0.540[a]
Bachelor of Agricultural Science with Honours		0 (0)	7 (77.8)	2 (22.2)		
Bachelor of Horticultural Science with Honours		2 (25.0)	5 (62.5)	1 (12.5)		
Bachelor of Science in Agribusiness with Honours		1 (12.5)	3 (37.5)	4 (50.0)		
Bachelor of Science in Aquaculture with Honours		0 (0)	1 (33.3)	2 (66.7)		
Bachelor of Agriculture in Animal Science with Honours		0 (0)	8 (72.7)	3 (27.3)		
Bachelor of Science Plantation Management with Honours		0 (0)	2 (66.7)	1 (33.3)		

Socio-demographic characteristics	Health Literacy				
	r	Limited Health Literacy	Sufficient Health Literacy	Excellent Health Literacy	χ^2 (df)	p-value
Education programme					
Bachelor of Science (Food Service Management) with Honours		2 (16.7)	6 (50.0)	4 (33.3)		
Bachelor of Food Science and Technology with Honours		4 (30.8)	7 (53.8)	2 (15.4)		
Bachelor of Science (Food Studies) with Honours		1 (6.3)	11 (68.8)	4 (25.0)		
Bachelor of Science in Food Manufacturing Operations with Honours		1 (100.0)	0 (0)	0 (0)		
Bachelor of Landscape Architecture with Honours		6 (30.0)	8 (40.0)	6 (30.0)		
Bachelor of Science in Architecture with Honours		1 (16.7)	3 (50.0)	2 (33.3)		
Bachelor of Design (Industrial Design) with Honours		2 (16.7)	7 (58.3)	3 (25.0)		
Bachelor of Human Development Science		0 (0)	5 (83.3)	1 (16.7)		
Bachelor of Human Development Science with Management		0 (0)	1 (100.0)	0 (0)		

Socio-demographic characteristics	Health Literacy				
	r	Limited Health Literacy	Sufficient Health Literacy	Excellent Health Literacy	χ^2 (df)	p-value
Education programme						
Bachelor of Human Development		2 (18.2)	5 (45.5)	4 (36.4)		
Science with Information Technology						
Bachelor of Consumer Studies		0 (0)	4 (66.7)	2 (33.3)		
Bachelor of Music		3 (33.3)	6 (66.7)	0 (0)		
Household income					1.858 (4)	0.762[a]
Less than RM 1000		3 (14.3)	14 (66.7)	4 (19.0)		
RM 1000 – RM 3000		14 (19.2)	39 (53.4)	20 (27.4)		
More than RM 3000		8 (13.1)	36 (59.0)	17 (27.9)		
Health problem					0.589 (2)	0.745[a]
Absent		23 (16.4)	79 (56.4)	38 (27.1)		
Present		2 (13.3)	10 (66.7)	3 (20.0)		
Any close relationship with family members who work as healthcare staff					1.538 (2)	0.463[a]
Yes		5 (11.4)	25 (56.8)	14 (31.8)		
No		20 (18.0)	64 (57.7)	27 (24.3)		

a. Pearson Chi-Square

b. Point-Biserial Correlation

$P \leq 0.05$ is considered as statistically significant

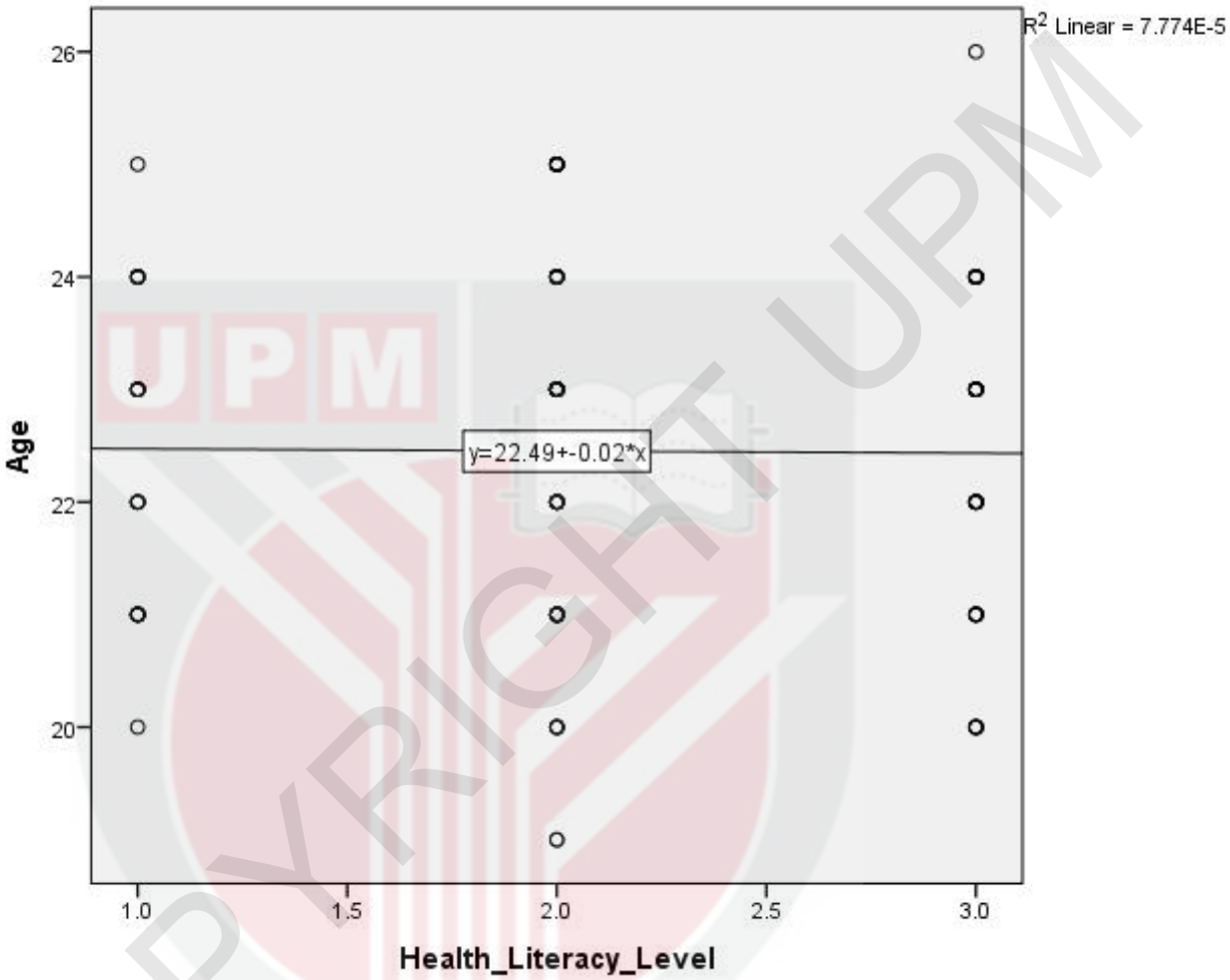

Figure 4.1 Point-Biserial Correlation between Age and Health Literacy

4.6 Relationship between socio-demographic characteristics and frequency of outpatient healthcare utilisation

Based on the result, there was a significant relationship between faculty and frequency of outpatient healthcare utilisation ($p = 0.017$). Details of the data as described in Table 4.9.

Moreover, there was a significant relationship between health problems and the frequency of outpatient healthcare utilisation ($p = 0.001$). Details of the data as described in Table 4.9.

Socio-demographic characteristics such as gender, age, year of study, education programme, household income, and close relationship with family members who worked as healthcare staff was not significantly associated with the frequency of outpatient healthcare utilisation. Details of the data as described in Table 4.9.

Table 4.9 Distribution of relationship between socio-demographic characteristics and frequency of outpatient healthcare utilisation (n = 155)

Socio-demographic characteristics	Frequency of Outpatient Healthcare Utilisation							
	r	Never	1-3 times	4-6 times	7-9 times	More than 9 times	χ^2 (df)	p-value
Gender							3.759 (3)	0.289 [a]
Male		18.0 (45.0)	22 (55.0)	0 (0)	0 (0)	0 (0)		
Female		57 (49.6)	50 (43.5)	7 (6.1)	0 (0)	1 (0.9)		
Age	0.003							0.975 [b]
Year of study							7.873 (9)	0.547 [a]
Year 1		18 (52.9)	15 (44.1)	1 (2.9)	0 (0)	0 (0)		
Year 2		8 (30.8)	17 (65.7)	1 (3.8)	0 (0)	0 (0)		
Year 3		25 (55.6)	17 (37.8)	3 (6.7)	0 (0)	0 (0)		
Year 4		24 (48.0)	23 (46.0)	2 (4.0)	0 (0)	1 (2.0)		
Faculty							20.076 (9)	**0.017** **[a]**
Faculty of Agriculture		13 (31.0)	28 (66.7)	1 (2.4)	0 (0)	0 (0)		
Faculty of Food Science and Technology		28 (66.7)	13 (31.0)	1 (2.4)	0 (0)	0 (0)		
Faculty of Design and Architecture		19 (50.0)	17 (44.7)	1 (2.6)	0 (0)	1 (2.6)		
Faculty of Human Ecology		15 (45.5)	14 (42.4)	4 (12.1)	0 (0)	0 (0)		

Socio-demographic characteristics	Frequency of Outpatient Healthcare Utilisation							
	r	Never	1-3 times	4-6 times	7-9 times	More than 9 times	χ^2 (df)	p-value
Education programme							53.179 (51)	0.390[a]
Bachelor of Agricultural Science with Honours		3 (33.3)	5 (55.6)	1 (11.1)	0 (0)	0 (0)		
Bachelor of Horticultural Science with Honours		1 (12.5)	7 (87.5)	0 (0)	0 (0)	0 (0)		
Bachelor of Science in Agribusiness with Honours		2 (25.0)	6 (75.0)	0 (0)	0 (0)	0 (0)		
Bachelor of Science in Aquaculture with Honours		1 (33.3)	2 (66.7)	0 (0)	0 (0)	0 (0)		
Bachelor of Agriculture in Animal Science with Honours		5 (45.5)	6 (54.5)	0 (0)	0 (0)	0 (0)		
Bachelor of Science Plantation Management with Honours		1 (33.3)	2 (66.7)	0 (0)	0 (0)	0 (0)		
Bachelor of Science (Food Service Management) with Honours		9 (75.0)	3 (25.0)	0 (0)	0 (0)	0 (0)		
Bachelor of Food Science and Technology with Honours		9 (69.2)	4 (30.8)	0 (0)	0 (0)	0 (0)		
Bachelor of Science (Food Studies) with Honours		9 (56.3)	6 (37.5)	1 (6.3)	0 (0)	0 (0)		

Socio-demographic characteristics	Frequency of Outpatient Healthcare Utilisation							
	r	Never	1-3 times	4-6 times	7-9 times	More than 9 times	χ^2 (df)	p-value
Education programme								
Bachelor of Science in Food Manufacturing Operations with Honours		1 (100)	0 (0)	0 (0)	0 (0)	0 (0)		
Bachelor of Landscape Architecture with Honours		12 (60.0)	7 (35.0)	0 (0)	0 (0)	1 (5.0)		
Bachelor of Science in Architecture with Honours		1 (16.7)	5 (83.3)	0 (0)	0 (0)	0 (0)		
Bachelor of Design (Industrial Design) with Honours		6 (50.0)	5 (41.7)	1 (8.3)	0 (0)	0 (0)		
Bachelor of Human Development Science		1 (16.7)	5 (83.3)	0 (0)	0 (0)	0 (0)		
Bachelor of Human Development Science with Management		1 (100.0)	0 (0)	0 (0)	0 (0)	0 (0)		
Bachelor of Human Development Science with Information Technology		5 (45.5)	4 (36.4)	2 (18.2)	0 (0)	0 (0)		
Bachelor of Consumer Studies		3 (50.0)	1 (16.7)	2 (33.3)	0 (0)	0 (0)		
Bachelor of Music		5 (55.6)	4 (44.4)	0 (0)	0 (0)	0 (0)		

Socio-demographic characteristics	Frequency of Outpatient Healthcare Utilisation							
	r	Never	1-3 times	4-6 times	7-9 times	More than 9 times	χ^2 (df)	p-value
Household income							1.607 (6)	0.952[a]
Less than RM 1000		9 (42.9)	11 (52.4)	1 (4.8)	0 (0)	0 (0)		
RM 1000–RM 3000		35 (47.9)	34 (46.6	3 (4.1)	0 (0)	1 (1.4)		
More than RM 3000		31 (50.8)	27 (44.3)	3 (4.9)	0 (0)	0 (0)		
Health problem							16.304 (3)	**0.001**[*a]
Absent		73 (52.1)	61 (43.6)	6 (4.3)	0 (0)	0 (0)		
Present		2 (13.3)	11 (73.3)	1 (6.7)	0 (0)	1 6.7)		
Any close relationship with family members who work as healthcare staff							3.033 (3)	0.386[a]
Yes		19 (43.2)	22 (50.0)	2 (4.5)	0 (0)	1 (2.3)		
No		56 (50.5)	50 (45.0)	5 (4.5)	0 (0)	0 (0)		

a. Pearson Chi-Square

b. Point-Biserial Correlation

$P \leq 0.05$ is considered as statistically significant

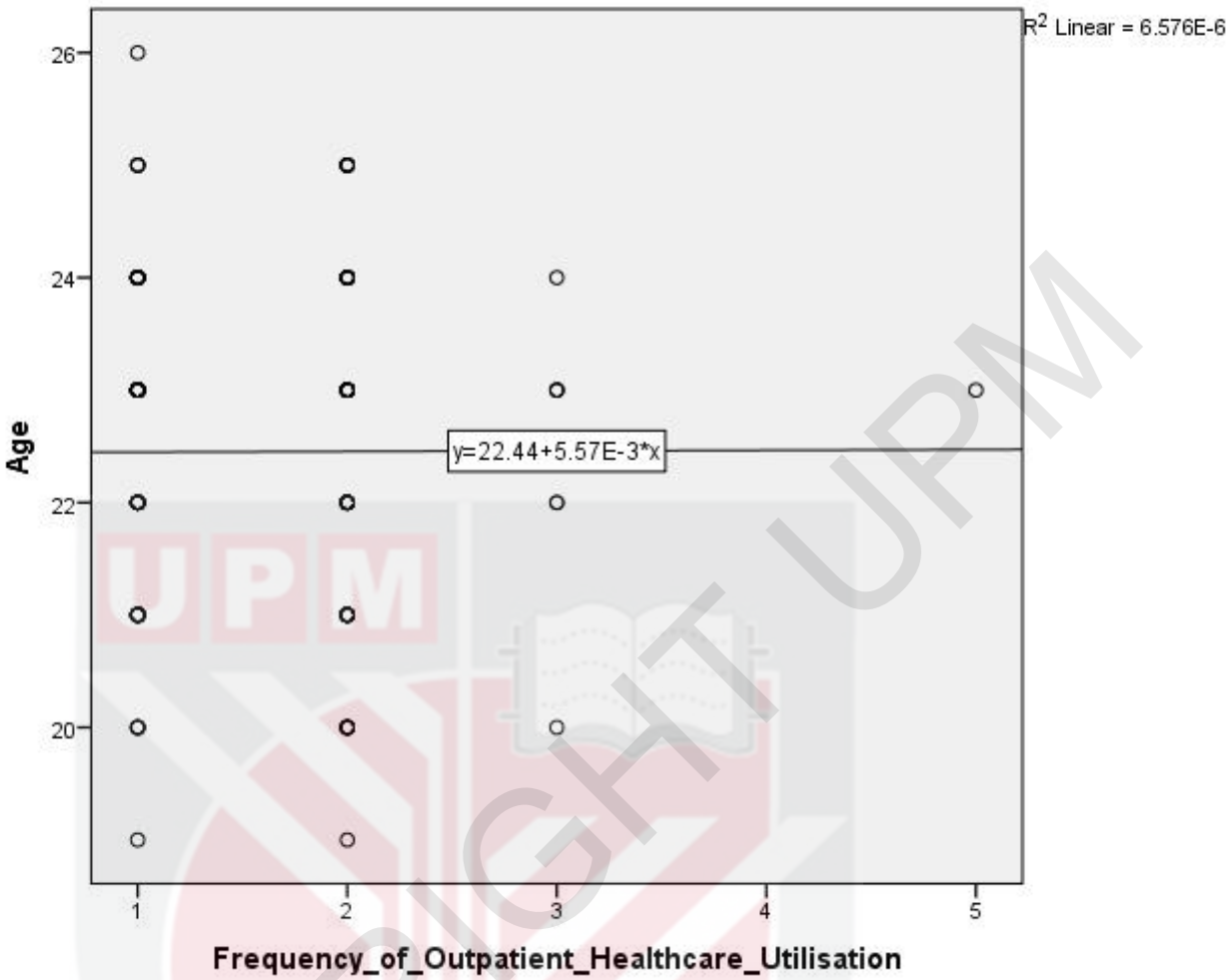

Figure 4.2 Point-Biserial Correlation between Age and Frequency of Outpatient Healthcare Utilisation

4.7 Relationship between health literacy and frequency of outpatient healthcare utilisation

Based on the results, there was no significant relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students with p = 0.739. Details of the data as described in Table 4.10.

Table 4.10 Distribution of relationship between health literacy and frequency of outpatient healthcare utilisation (n = 155)

Health Literacy	Frequency of Outpatient Healthcare Utilisation						
	Never	1-3 times	4-6 times	7-9 times	More than 9 times	χ^2 (df)	p-value
						3.534 (6)	0.739
Limited Health Literacy	13 (52.0)	10 (40.0)	2 (8.0)	0 (0)	0 (0)		
Sufficient Health Literacy	43 (48.3)	43 (48.3)	2 (2.2)	0 (0)	1 (1.1)		
Excellent Health Literacy	19 (46.3)	19 (46.3)	3 (7.3)	0 (0)	0 (0)		

$p \leq 0.05$ is considered as statistically significant

CHAPTER 5

DISCUSSION

5.1 Introduction

In this chapter, the results of this study were further discussed according to the study objectives to determine the relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in UPM.

5.2 Health Literacy Among Undergraduate Students

According to the results, the mean for the HLS-M-Q18 index score was 38.91 with a standard deviation of 5.601. For the health literacy level, it indicated that more than half (57.4%) of the total participants were having sufficient health literacy. 16.1% of the participants were having limited health literacy and 26.5% of the participants were having excellent health literacy. According to a study done by Sukys, Cesnaitiene and Ossowsky (2017), they stated that 43.5 % of the students had sufficient health literacy. 6.9% of the students had low health literacy meanwhile 23.5% of students had excellent health literacy. Furthermore, based on another study done in Greece, the health literacy among undergraduate students aged 18 to 24 years old was ranged from medium to high level and they had a very good health status (Vozikis, Drivas & Milioris, 2014). However, there was one study conducted by Evans, Anthony, and Gabriel (2019) reported that 54.6% of the undergraduate students had limited health literacy with a mean score of 32.2.

5.3 Frequency of Outpatient Healthcare Utilisation

Based on the results, almost half of the participants (48.4%) never visit the outpatient healthcare facilities (public or private hospital, clinics, or University Health Centre, UPM) in the previous 6 months. Only one participant (0.6%) visited the outpatient healthcare facilities more than 9 times in the previous 6 months. Congruent to this finding, a study done by Bonnie, Stroud and Breiner (2015) revealed that there was a significantly low rate of health care utilisation among young adults as compared to other groups of people. In this study, the authors also mentioned that only 7% of the young adults aged 18 to 25 had visited the hospital outpatient department as compared to adults aged 26 to 44 (12%), adults aged 45 to 64 (20%), and adults aged more than 65 (30%). Contradicting to the study result, there was an increase in healthcare utilisation among young adults during the last decades stated by Viktorsson, Yngman-Uhlin, Törnvall and Falk (2019).

Apart from this, there were 33.5% of the participants visited the outpatient healthcare facilities due to health problems. Moreover, there were 15 of the participants (9.7%) went to outpatient healthcare facilities for medical check-up and 11 participants (7.1%) went for a follow-up. Only two participants (1.3%) went to outpatient healthcare facilities to have their vaccinations. Also, 48.4% of participants never visit the outpatient healthcare facilities in the previous 6 months, hence they chose never to visit outpatient healthcare facilities for this question. According to another study conducted by Javadzade et al. (2012), they reported that 73% of the participants had visited outpatient facilities at least 1 times in the previous 3 months and 71% of the referral was due to health problems. Only 20% of the participants had been referred for check-ups and screening tests. The same study also stated that individuals with

lower health literacy had referred more for their health problem whereas higher health literacy had referred for check-ups and screening tests.

Furthermore, more than half of the participants (66.5%) were having a high perception to seek medical advice when they had queries about their health meanwhile more than half of the participants (67.1%) were having high perception to visit the outpatient healthcare to seek for treatment if they had any health problem.

5.4 Relationship between socio-demographic characteristics and health literacy

According to the study results, the socio-demographic characteristics such as gender, age, year of study, faculty, education programme, household income, health problem, and close relationship with family members who worked as healthcare staff were not significantly associated with health literacy.

Some studies contradict to the findings; for example, there was a study stated that the health literacy of female was higher than male in which 72% of the female were having adequate health literacy as compared with 68% of male (Bodur, Filiz & Kalkan, 2017). Moreover, according to a study conducted by Clouston, Manganello, and Richards (2016), they reported that 60.3% of females were having high health literacy as compared with 52.6% of males. Also, there was an association between gender and general health literacy in which males showed significantly lower health literacy scores as compared to females (Sukys, Cesnaitine & Ossowsky, 2017).

Apart from this, there was a study revealed that individuals with young age showed better health literacy levels compared to individuals aged 25 years old and above (Rathnakar et al., 2013). Furthermore, a population that had limited health literacy increases by age (Berens, Vogt, Messer, Hurrelmann & Schaeffer, 2016). The same study showed that 47.3% of the respondents aged 15 to 29 years were showing limited health literacy and those aged 30 to 45 years were 47.2%. 55.2% of the respondents aged 46 to 64 years were having limited health literacy and 66.4% for respondents aged 65 years and above. Also, a study done by Toçi, Burazeri, Myftiu, Sørensen, and Brand (2015) stated that there was an association between better general health literacy and younger age.

To support the study result, a study done by Uysal, Ceylan, and Koç (2019) stated that there was no significant relationship between health literacy and the school year. In contrast, according to Zhang et al. (2016), they mentioned that among the medical university students in Chongqing, China, Grade Three students were having the highest health literacy questionnaire (HLQ) score meanwhile Grade One students were having the lowest score. Moreover, senior students were significantly having a higher health literacy level as compared to junior students (Rong et al., 2017).

Congruent to the study results, a study done by Sukys, Cesnaitiene, and Ossowsky (2017) revealed that there was no significant association between students that enrolled in health-related courses and health literacy. Contradicting to the study results, there was a study conducted by Uysal, Ceylan, and Koç (2019) stated that nursing students were having a higher level of health literacy in all subscales when compared to other non-health-related departments. Also, there was an association

between health literacy and the healthcare educational field even if the healthcare students had shown a lower adherence to healthy behaviours than their counterparts (Gallè et al., 2020).

Moreover, a study done by Zhang et al. (2016) found that there was a significant difference ($p < 0.05$) in socioeconomic status. Other researches also had proven that there was a significant relationship between health literacy and socioeconomic status (Wawrzyniak, Ownby, McCoy & Waldrop-Valvede, 2013; Vozikis, Drivas & Milioris, 2014). Furthermore, in a study conducted by Cho, Lee, Lim, and Lee (2020), they stated the health literacy was low among people with low-income levels meanwhile according to Silbersdorff, Lynch, Klasen, and Kneib (2018), they stated that the risk of having bad health outcomes was strongly related to the income level. Therefore, health literacy in an individual could be affect by their poverty or income level.

Furthermore, a study conducted by Edwards, Wood, Davies, and Edwards (2012) mentioned that "patients with a long-term condition can develop health literacy skills over time and put their skills into practice in becoming more active in healthcare consultations". The participants in the same study had stated that they critically engaged with numerous health information to gain health knowledge and thus enhance their health literacy skills needed to manage their health problems.

5.5 Relationship between socio-demographic characteristics and frequency of outpatient healthcare utilisation

According to the findings, there was a significant relationship between faculty and frequency of outpatient healthcare utilisation (p = 0.017). According to NHMS (2019), it stated that participants with no formal education had the most utilisation of outpatient healthcare as compared to other levels of education.

Moreover, there was a significant relationship between health problems and the frequency of outpatient healthcare utilisation (p = 0.001). Congruent to this finding, having more chronic diseases were correlated to a higher frequency of outpatient healthcare utilisation (Madyaningrum, Chuang & Chuang, 2018)

Apart from this, socio-demographic characteristics such as gender, age, year of study, education programme, household income, and close relationship with family members who worked as healthcare staff were not significantly associated with the frequency of outpatient healthcare utilisation.

However, according to NHMS (2019), it reported that women had higher utilisation of outpatient healthcare as compared to men. Moreover, in general, outpatient care needs are likely to increase as the population ages (Madyaningrum, Chuang & Chuang, 2018). Also, those in household income quintile Q1 utilised the outpatient healthcare services the most (NHMS, 2019). Furthermore, incongruent to the finding, a study conducted by Kutner, Greenberg, Jin, and Paulsen (2006) stated mentioned that a higher number of adults gained health information from their family members or friends. However, a study conducted by Oedekoven et al. (2019) suggested that an

individual's health literacy had a firm relationship to the concepts of self-efficacy and action planning in the context of health and health behaviours.

5.6 Relationship between health literacy and frequency of outpatient healthcare utilisation

This study found that there was no significant relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students ($p = 0.739$). In contrast, according to Berens et al (2016), they revealed that there was an association between perceived health literacy and the number of doctor visits. The lower the perceived health literacy, the higher the number of doctors' visits. Another study also had been reported that limited health literacy was associated with higher health service utilization (Palumbo, 2016).

Furthermore, a study was done by Viktorsson, Yngman- Uhlin, Törnvall, and Falk (2019) reported that young adults' reliance on the healthcare system was associated with health literacy. Also, for all types of visits, individuals with below basic or basic health literacy averaged showed the most visits compared to individuals with above basic health literacy (Rasu, Bawa, Suminski, Snella & Warady, 2015). According to another study conducted by Javadzade et al. (2012), they reported that the health literacy level was negatively associated with the outpatient visit with $p = 0.003$.

5.7 Summary

In conclusion, this study found that there was no association between socio-demographic characteristics and health literacy among the undergraduate students in UPM. Furthermore, the findings showed that socio-demographic characteristics such as faculty and health problems had a significant relationship with the frequency of outpatient healthcare utilisation with $p = 0.017$ and $p = 0.001$ respectively. Other socio-demographic characteristics such as gender, age, year of study, education programme, household income, and close relationship with family members who worked as healthcare staff were not significantly associated with frequency of outpatient healthcare utilisation. Moreover, there was no significant relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students ($p = 0.739$).

CHAPTER 6

LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

This study was a cross-sectional study with a convenience sampling method that had been conducted in a short time. During the study period, there were several limitations identified and discussed in this chapter.

6.2 Limitations

Firstly, the convenience sampling method used in this study was unable to generalize the results of the survey to the study population which was the undergraduate students in UPM as a whole and it had the possibility of under-or over-representation of the undergraduate students in each selected faculties. Apart from this, cross-sectional study had a high vulnerability to have bias; for example, selection bias and information bias. According to Wang and Cheng (2020), they stated that selection bias could occur when the sample selected was no longer represent the overall population. In the same study, it also mentioned that the nonresponse bias was the most common type of selection bias. It usually occurred when the characteristics of the non-responders differed from the responders. Hence, for this study, not all respondents in the selected faculties that received the google form link would answer the questionnaire. Moreover, Wang and Cheng (2020) also stated that prevalence incidence bias also common in cross-sectional study in which it occurred when the selection process favoured individuals with characteristics that were not representative of the population as a whole. Furthermore, there were two common information biases; for instance, recall bias and detection bias. Since the exposure

and outcome of the cross-sectional study were measured simultaneously, hence the knowledge prior to the study could affect the ascertainment of the exposure or the outcome.

In addition, due to the pandemic COVID-19 and the restriction to access undergraduate students' details from each faculty's dean due to privacy issues, the researcher could not obtain the undergraduate students' name list and contact details to choose the participants randomly. Therefore, the researcher needed to change the sampling method from simple random sampling to convenience sampling for the data collection. As well as that, the researcher only could get 80% of the participants from the total sample size even though the sampling method already changed.

Lastly, the data collection period for this study was short due to the long waiting time in getting the ethical approval from JKEUPM and the permission to collect data from each selected faculties' dean. Hence, the researcher only could get 80% of the participants from the total sample size.

6.3 Recommendations

6.3.1 Nursing Practice

Healthcare organizations such as University Health Centre, UPM are recommended to organize more health education programmes for faculties that had the higher percentage of undergraduate students having limited health literacy such as Faculty of Food Science and Technology and Faculty of Design and Architecture. Examples of health education programs that can be conducted in the future are organizing

health campaigns and talks that require active participation from the undergraduate students, distributing pamphlet physically, or creating health poster and sharing it via social media. Nurses are encouraged to prepare the health material in written or visual formats. This is because it is an effective ways to convey important message to the undergraduate students. Nurses should also constantly give health education to the university students on campus either physically or virtually. Health education is very crucial to improve the health literacy level among university students and thus minimize any preventable outpatient healthcare utilisation. Nurses should encourage university students to build up good health behaviour and thus maintain good physical and mental health throughout their life.

6.3.2 Nursing Education

Apart from that, nurses should empower themselves with good communications skills and equip themselves with varying health-related issues and concerns among undergraduate students by participating various types of courses or training. This is to ensure an effective and positive outcome from the undergraduate students. Moreover, nurses also need to educate the public such as undergraduate students to build up a healthy lifestyle so that they can have good decision making for their health.

6.3.3 Nursing Research

The results of this study might differ as compared between the COVID-19 situation and non-COVID-19 situation. Hence, further study can be done to compare the health literacy of undergraduate students between the COVID-19 situation and the non-COVID situation. Furthermore, other type of research study can be tried to get a

more precise result; for instance, observational study to observe the frequency of outpatient healthcare utilisation among undergraduate students in the real situation.

6.4 Conclusion

In conclusion, 57.4% of the total participants were having sufficient health literacy. 16.1% of the participants were having limited health literacy and 26.5% of the participants were having excellent health literacy. Apart from this, almost half of the participants (48.4%) never visit the outpatient healthcare in the previous 6 months. Moreover, the study results showed that there was no significant relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in UPM, Selangor. The findings of this study could provide a baseline data for the university health centre or other university authorities to improve the health literacy among their undergraduate students. Further health promotion interventions could be implemented in those faculties with limited health literacy. This was one of the ways to promote health literacy and improve health outcomes among undergraduate students in UPM.

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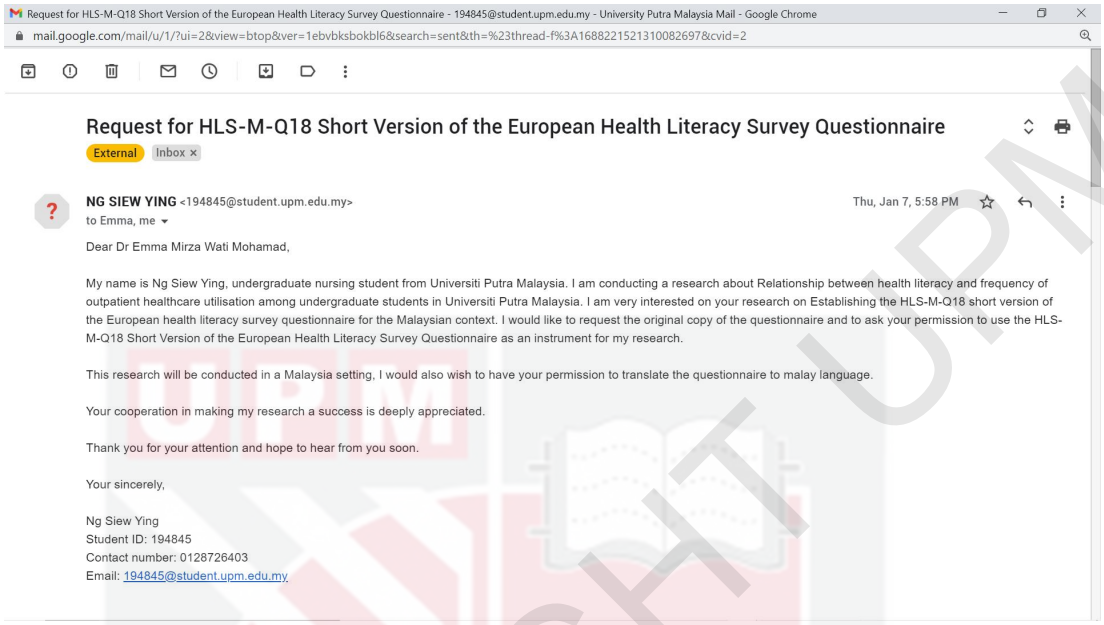
APPENDICES

APPENDIX 1: PERMISSION FOR A STUDY INSTRUMENT



Request for HLS-M-Q18 Short Version of the European Health Literacy Survey Questionnaire - 194845@student.upm.edu.my - University Putra Malaysia Mail - Google Chrome

mail.google.com/mail/u/1/?ui=2&view=btop&ver=1ebvbksbokbl6&search=sent&th=%23thread-f%3A1688221521310082697&cvid=2

Request for HLS-M-Q18 Short Version of the European Health Literacy Survey Questionnaire

External Inbox ×

NG SIEW YING <194845@student.upm.edu.my> Thu, Jan 7, 5:58 PM

to Emma, me

Dear Dr Emma Mirza Wati Mohamad,

My name is Ng Siew Ying, undergraduate nursing student from Universiti Putra Malaysia. I am conducting a research about Relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students in Universiti Putra Malaysia. I am very interested on your research on Establishing the HLS-M-Q18 short version of the European health literacy survey questionnaire for the Malaysian context. I would like to request the original copy of the questionnaire and to ask your permission to use the HLS-M-Q18 Short Version of the European Health Literacy Survey Questionnaire as an instrument for my research.

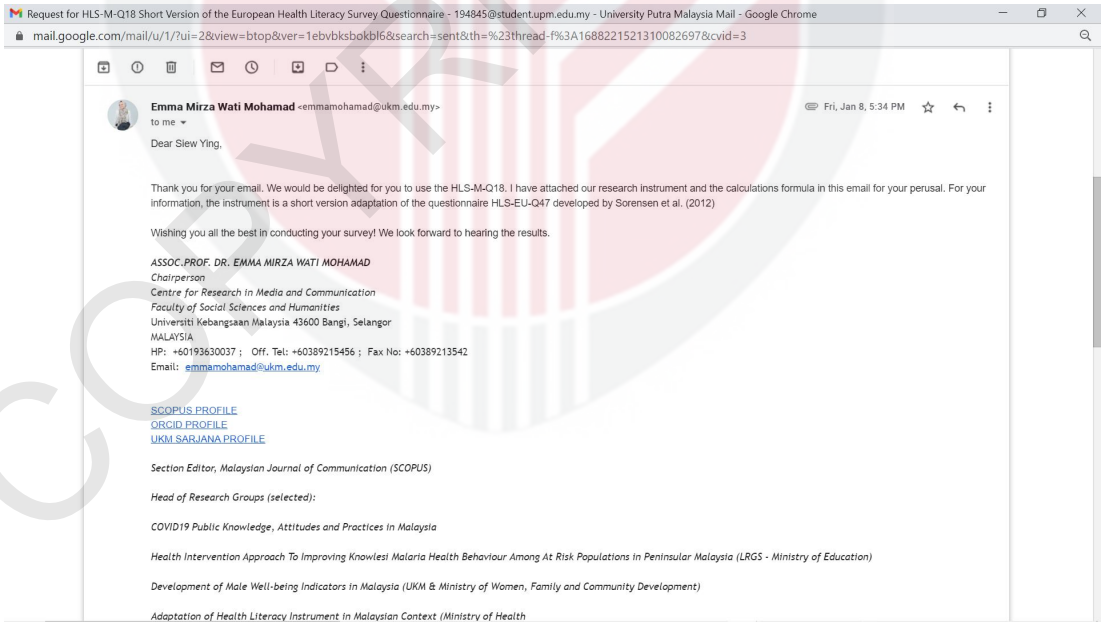
This research will be conducted in a Malaysia setting, I would also wish to have your permission to translate the questionnaire to malay language.

Your cooperation in making my research a success is deeply appreciated.

Thank you for your attention and hope to hear from you soon.

Your sincerely,

Ng Siew Ying
Student ID: 194845
Contact number: 0128726403
Email: 194845@student.upm.edu.my



Request for HLS-M-Q18 Short Version of the European Health Literacy Survey Questionnaire - 194845@student.upm.edu.my - University Putra Malaysia Mail - Google Chrome

mail.google.com/mail/u/1/?ui=2&view=btop&ver=1ebvbksbokbl6&search=sent&th=%23thread-f%3A1688221521310082697&cvid=3

Emma Mirza Wati Mohamad <emmamohamad@ukm.edu.my> Fri, Jan 8, 5:34 PM

to me

Dear Siew Ying,

Thank you for your email. We would be delighted for you to use the HLS-M-Q18. I have attached our research instrument and the calculations formula in this email for your perusal. For your information, the instrument is a short version adaptation of the questionnaire HLS-EU-Q47 developed by Sorensen et al. (2012)

Wishing you all the best in conducting your survey! We look forward to hearing the results.

ASSOC.PROF. DR. EMMA MIRZA WATI MOHAMAD
Chairperson
Centre for Research in Media and Communication
Faculty of Social Sciences and Humanities
Universiti Kebangsaan Malaysia 43600 Bangi, Selangor
MALAYSIA
HP: +60193630037 ; Off. Tel: +60389215456 ; Fax No: +60389213542
Email: emmamohamad@ukm.edu.my

SCOPUS PROFILE
ORCID PROFILE
UKM SARJANA PROFILE

Section Editor, Malaysian Journal of Communication (SCOPUS)

Head of Research Groups (selected):

COVID19 Public Knowledge, Attitudes and Practices in Malaysia

Health Intervention Approach To Improving Knowlesi Malaria Health Behaviour Among At Risk Populations in Peninsular Malaysia (LRGS - Ministry of Education)

Development of Male Well-being Indicators in Malaysia (UKM & Ministry of Women, Family and Community Development)

Adaptation of Health Literacy Instrument in Malaysian Context (Ministry of Health

APPENDIX 2: PARTICIPANT'S INFORMATION SHEET AND CONSENT

Respondent's Information Sheet and Informed Consent Form

1. STUDY TITLE :

Relationship between health literacy and frequency of outpatient healthcare utilisation among undergraduate students at a public university in Selangor.

2. INTRODUCTION:

You are invited to participate in a research study because you have met the criteria for this study that requires your knowledge about health literacy. Health literacy is very crucial for the health outcomes in an individual. University students were at high risk to have unhealthy behaviors such as unhealthy eating and lack of physical activities that might have negative impact to their academic performance and health status. This was because university students spend a lot of time in a stressful environment and they might tend to have unhealthy behaviors to release their stress. Therefore, having adequate health literacy level is very crucial for university students in order to help them to have a good decision making for their own health.

It is important that you understand why the research is being done and what it will involve. Please take your time to read through and consider this information carefully before you decide if you are willing to participate. Ask the researcher if anything is unclear or if you would 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.

Your participation in this study is voluntary. 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 participate 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 been approved by Jawatankuasa Etika Untuk Penyelidikan Melibatkan Manusia (JKEUPM).

3. WHAT WILL YOU HAVE TO DO?

It is important that you answer all the questions in the questionnaire honestly and completely. A set of questionnaire will be given to you and the questionnaire consists of 3 parts which are Part A, Part B and Part C. You are required to answer all the questions and your participation will only take about 10 to 15 minutes. It is also important for you to follow the instruction given in the questionnaire to ensure that the process is going well. Your willingness to answer all the questions is highly appreciated.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

International students, postgraduate students, foundation students, part time undergraduates students and undergraduate students on long medical leave or holiday during data collection.

5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT?

The information that you provided regarding your knowledge about health literacy and the frequency of outpatient healthcare utilisation are much appreciated. It may not have direct benefits to the participant, but it will create awareness about health literacy among the participant. The participation is voluntary. Hence, there is no payment given to the participant.

(b) TO THE INVESTIGATOR?
The information and data collected from this study will allow the researcher to assess the health literacy and frequency of outpatient healthcare utilisation among the participants. Researcher is able to determine the relationship between the health literacy and frequency of outpatient healthcare utilisation. The outcomes of this study can suggest for any improvement to be done so that undergraduate students have the awareness to increase their health literacy level and thus improve their health outcomes.

6. WHAT ARE THE POSSIBLE RISKS?

There is no risk and side effects when you participate in this study. You are free to refuse to answer any of the questions that make you feel uncomfortable.

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

Yes. All of your information obtained from this study will be kept and handled in a confidential manner in accordance with applicable laws and/or regulations. Your identity will not be revealed without your permission when presenting or publishing the study results. The principal researchers and the supervisory committee will have full access to the findings of this research.

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

If you have any questions regarding to this study, please contact one of the person listed below:

(a) Researcher
Ng Siew Ying
Bachelor of Nursing
Department of Nursing
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
Contact Number: 012-8726403
Email: siewying3883@gmail.com

(b) Supervisor
Associate Professor Dr. Lee Khuan
Lecturer
Department of Nursing
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
Contact Number: 016-2040157
Email: leekhuan@upm.edu.my

(c) Co – Supervisor
Dr. Lim Poh Ying
Lecturer
Department of Community Health
Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
Contact Number: 03-9769 2950
Email: pohying_my@upm.edu.my

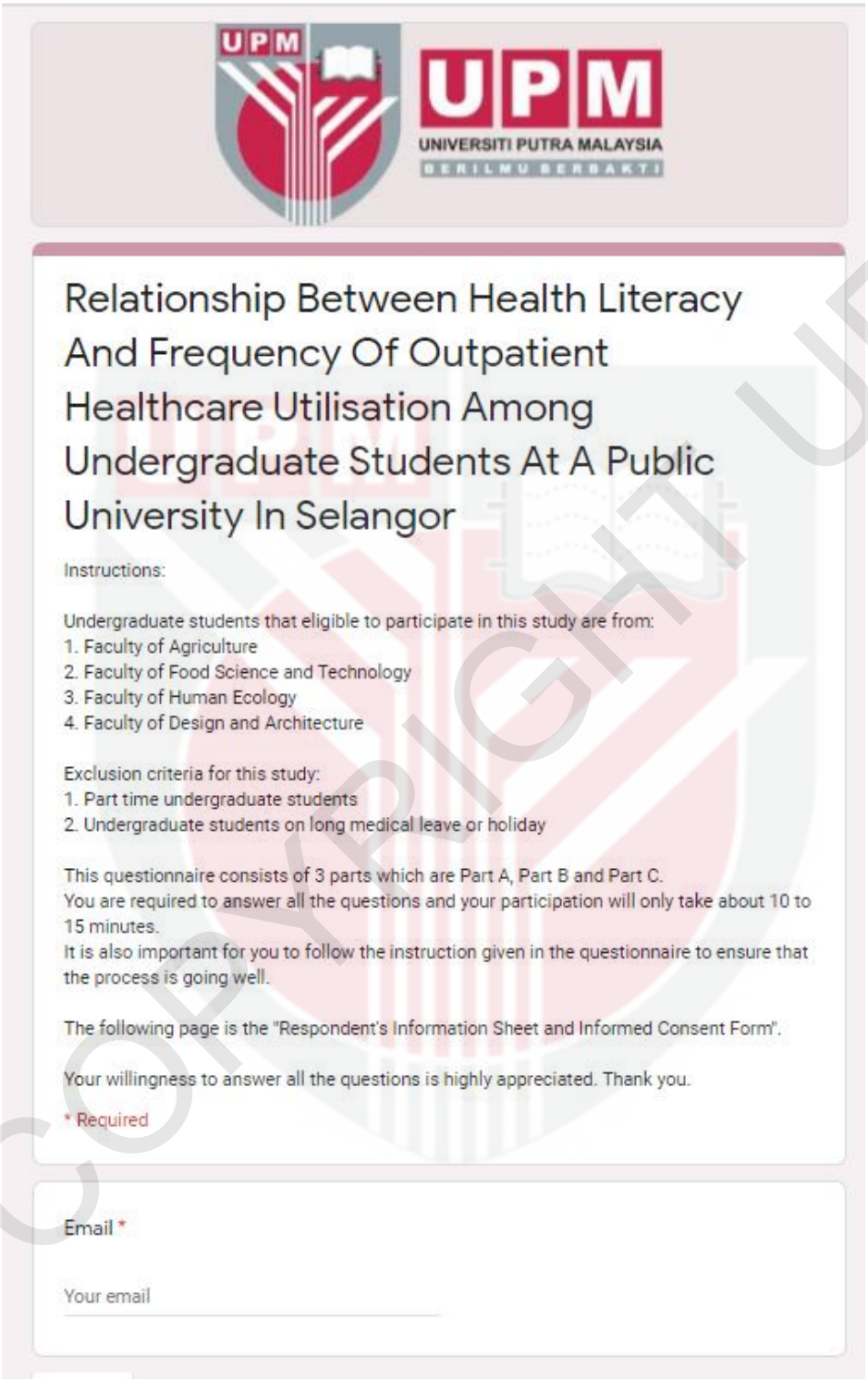
If you have any questions about your rights as a participant in this study, please contact Office of the Deputy Vice Chancellor (Research & Innovation), Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia (JKEUPM), Universiti Putra Malaysia at 03-9769 1002.

I hereby voluntarily agree to take part in this questionnaire-based research. 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. *

- ○ Yes
- ○ No

Back Next Clear form

APPENDIX 3: QUESTIONNAIRE (GOOGLE FORM)



UPM

UNIVERSITI PUTRA MALAYSIA

BERILMU BERBAKTI

Relationship Between Health Literacy And Frequency Of Outpatient Healthcare Utilisation Among Undergraduate Students At A Public University In Selangor

Instructions:

Undergraduate students that eligible to participate in this study are from:
1. Faculty of Agriculture
2. Faculty of Food Science and Technology
3. Faculty of Human Ecology
4. Faculty of Design and Architecture

Exclusion criteria for this study:
1. Part time undergraduate students
2. Undergraduate students on long medical leave or holiday

This questionnaire consists of 3 parts which are Part A, Part B and Part C.
You are required to answer all the questions and your participation will only take about 10 to 15 minutes.
It is also important for you to follow the instruction given in the questionnaire to ensure that the process is going well.

The following page is the "Respondent's Information Sheet and Informed Consent Form".

Your willingness to answer all the questions is highly appreciated. Thank you.

* Required

Email *

Your email

Part A: Socio-demographic Information

Please fill in the following details.

Gender *

- ○ Male
- ○ Female

Age *

Your answer

Year of Study *

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

Faculty *

- ○ Faculty of Agriculture
- ○ Faculty of Food Science and Technology
- ○ Faculty of Veterinary Medicine
- ○ Faculty of Human Ecology
- ○ Faculty of Design and Architecture

Faculty *

- Faculty of Agriculture
- Faculty of Food Science and Technology
- Faculty of Veterinary Medicine
- Faculty of Human Ecology
- Faculty of Design and Architecture

Programme *

Your answer

Household Income *

- Less than RM1000
- RM1000 - RM3000
- More than RM3000

Health Problem *

- Absent
- Present

Do you have any close relationship with family members who work as healthcare staff? *

- Yes
- No

Back Next

Part B: Health Literacy

Please choose the appropriate.

On a scale of "very difficult" to "very easy", rate: *

	Very Difficult (1)	Fairly Difficult (2)	Fairly Easy (3)	Very Easy (4)
1. How easy it is for you to call an ambulance in an emergency?	○	○	○	○
2. How easy it is for you to judge when you may need to get a second opinion from another doctor?	○	○	○	○
3. How easy it is for you to understand what to do in a medical emergency?	○	○	○	○
4. How easy it is for you to follow instructions from your doctor or pharmacist?	○	○	○	○
5. How easy it is for you to judge how information from your doctor applies to you?	○	○	○	○
6. How easy it is for you to understand the leaflets that come with your medicine?	○	○	○	○
7. How easy it is for you to understand information in the media (internet, newspaper, magazine) on how to get healthier?	○	○	○	○

8. How easy it is for you to judge where your life (community, residential area) affects your health and wellbeing?	○	○	○	○
9. How easy it is for you to judge how your housing conditions help you to stay healthy?	○	○	○	○
10. How easy it is for you to take part in activities that improve health and wellbeing in your community?	○	○	○	○
11. How easy it is for you to understand advice on health from family members or friends?	○	○	○	○
12. How easy it is for you to make decisions to improve your health?	○	○	○	○
13. How easy it is for you to understand health warnings about behaviour such as smoking, low physical activity, unhealthy food consumption and drinking too much?	○	○	○	○
14. How easy it is for you to find information on how to manage mental health problems like stress or depression?	○	○	○	○

15. How easy it is for you to understand why you need health screenings? (Eg: obesity screening test, cervical cancer screening test, HIV screening test, breast examination, blood sugar test, blood pressure and cholesterol test)	○	○	○	○
16. How easy it is for you to find information about vaccinations and health screenings that you should have? (Eg: obesity screening test, cervical cancer screening test, HIV screening test, breast examination, blood sugar test, blood pressure and cholesterol test)	○	○	○	○
17. How easy it is for you to judge which health screenings you should have? (Eg: obesity screening test, cervical cancer screening test, HIV screening test, breast examination, blood sugar test, blood pressure and cholesterol test)	○	○	○	○
18. How easy it is for you to judge when you need to go to a doctor for a checkup?	○	○	○	○

Part C: Frequency of Outpatient Healthcare Utilisation

Please choose the appropriate.

Outpatient healthcare = Receive any traditional, complementary or modern advice, check-up or treatment at healthcare facilities such as public or private hospitals, clinics or University Health Centre, UPM without any overnight stay.

How many times did you visit outpatient healthcare facilities (public or private hospitals, clinics or University Health Centre, UPM) in the PREVIOUS 6 MONTHS? *

- ◯ Never
- ◯ 1 - 3 times
- ◯ 4 - 6 times
- ◯ 7 - 9 times
- ◯ More than 9 times

What is the type of services that you received when visit the outpatient facilities in the PREVIOUS 6 MONTHS? *

- ◯ Never Visit Outpatient Facilities
- ◯ Health Problem
- ◯ Follow-Up
- ◯ Medical Check-Up
- ◯ Other: _____

If you have any queries about your health, will you seek for medical advice? *

	1	2	3	4	5	6	7	8	9	10	
Extremely No	○	○	○	○	○	○	○	○	○	○	Extremely Yes

If you have any health problem, will you visit the outpatient healthcare to seek for treatment? *

	1	2	3	4	5	6	7	8	9	10	
Extremely No	○	○	○	○	○	○	○	○	○	○	Extremely Yes

Back Submit

APPENDIX 4: GANTT CHART

Project	2020			2021								
	10	11	12	1	2	3	4	5	6	7	8	9
Identify research problem												
Discussion with supervisor regarding research title												
Review of article for literature review												
Proposal draft preparation												
Proposal presentation												
Proposal submission												
Ethical approval												
Obtained permission from relevant party												
Data Collection												
Data Analysis and Discussion												
Thesis Presentation												
Thesis Submission												

APPENDIX 5: BUDGET

No.	Items	Quantity X RM/ Unit	Total Cost (RM)
1	Printing	400 X 0.05	200
2	Binding	2 X 1.50	3
3	Internet Data	1 X 100	100
Total			303

APPENDIX 6: APPROVAL FROM JKEUPM

Ref. no: UPM/TNCPI/RMC/JKEUPM/1.4.18.2 (JKEUPM)
Date: 28 May 2021

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

APPLICATION FOR JKEUPM ETHICAL CLEARANCE: APPROVED

With reference to the above, I am pleased to inform you that your application for ethical clearance for the research project entitled **'Relationship Between Health Literacy and Frequency of Outpatient Healthcare Utilisation among Undergraduate Students at a Public University in Selangor'** has been approved.

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

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

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

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

Note: Please use this reference number for any transaction.

- JKEUPM-2021-154

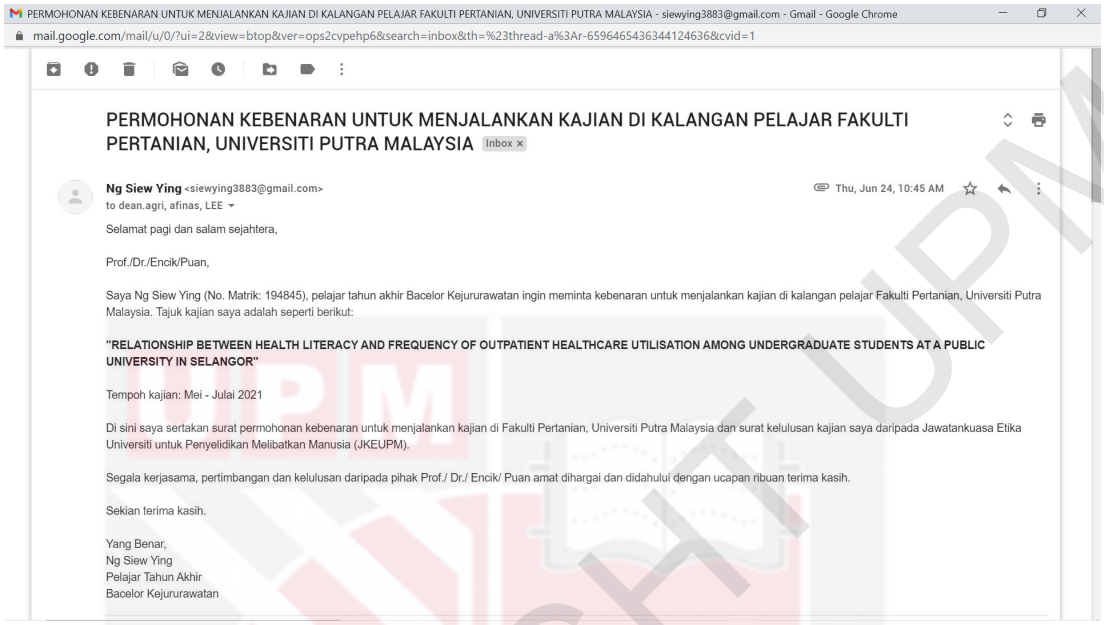
Thank you.

Yours faithfully,

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

APPENDIX 7: PERMISSION FROM SELECTED FACULTIES' DEAN

7.1 FACULTY OF AGRICULTURE



PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI PERTANIAN, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar-6596465436344124636&cvid=1

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI PERTANIAN, UNIVERSITI PUTRA MALAYSIA Inbox ×

Ng Siew Ying <siewying3883@gmail.com>
to dean.agri, afinas, LEE

Thu, Jun 24, 10:45 AM

Selamat pagi dan salam sejahtera,

Prof./Dr./Encik/Puan,

Saya Ng Siew Ying (No. Matrik: 194845), pelajar tahun akhir Bacelor Kejururawatan ingin meminta kebenaran untuk menjalankan kajian di kalangan pelajar Fakulti Pertanian, Universiti Putra Malaysia. Tajuk kajian saya adalah seperti berikut:

"RELATIONSHIP BETWEEN HEALTH LITERACY AND FREQUENCY OF OUTPATIENT HEALTHCARE UTILISATION AMONG UNDERGRADUATE STUDENTS AT A PUBLIC UNIVERSITY IN SELANGOR"

Tempoh kajian: Mei - Julai 2021

Di sini saya sertakan surat permohonan kebenaran untuk menjalankan kajian di Fakulti Pertanian, Universiti Putra Malaysia dan surat kelulusan kajian saya daripada Jawatankuasa Etika Universiti untuk Penyelidikan Melibatkan Manusia (JKEUPM).

Segala kerjasama, pertimbangan dan kelulusan daripada pihak Prof./ Dr./ Encik/ Puan amat dihargai dan didahului dengan ucapan ribuan terima kasih.

Sekian terima kasih.

Yang Benar,
Ng Siew Ying
Pelajar Tahun Akhir
Bacelor Kejururawatan

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI PERTANIAN, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar-6596465436344124636&cvid=1

Dean Agriculture / UPM <dean.agri@upm.edu.my>
to me

Jun 25, 2021, 2:27 PM

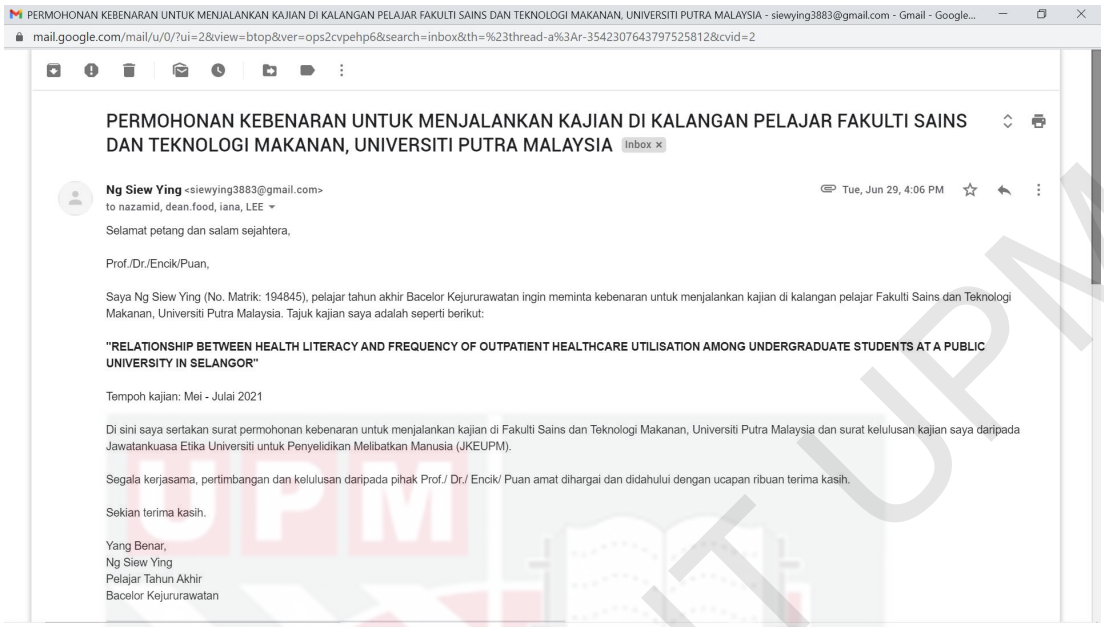
Malay › English Translate message

Turn off for: Malay ×

Salam sejahtera,

Pihak fakulti tiada halangan untuk saudari/i menjalankan kajian.
Terima kasih

7.2 FACULTY OF FOOD SCIENCE AND TECHNOLOGY



PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI SAINS DAN TEKNOLOGI MAKANAN, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google...

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar-3542307643797525812&cvid=2

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI SAINS DAN TEKNOLOGI MAKANAN, UNIVERSITI PUTRA MALAYSIA Inbox ×

Ng Siew Ying <siewying3883@gmail.com> Tue, Jun 29, 4:06 PM

to nazamid, dean.food, iana, LEE

Selamat petang dan salam sejahtera,

Prof./Dr./Encik/Puan,

Saya Ng Siew Ying (No. Matrik: 194845), pelajar tahun akhir Bacelor Kejururawatan ingin meminta kebenaran untuk menjalankan kajian di kalangan pelajar Fakulti Sains dan Teknologi Makanan, Universiti Putra Malaysia. Tajuk kajian saya adalah seperti berikut:

"RELATIONSHIP BETWEEN HEALTH LITERACY AND FREQUENCY OF OUTPATIENT HEALTHCARE UTILISATION AMONG UNDERGRADUATE STUDENTS AT A PUBLIC UNIVERSITY IN SELANGOR"

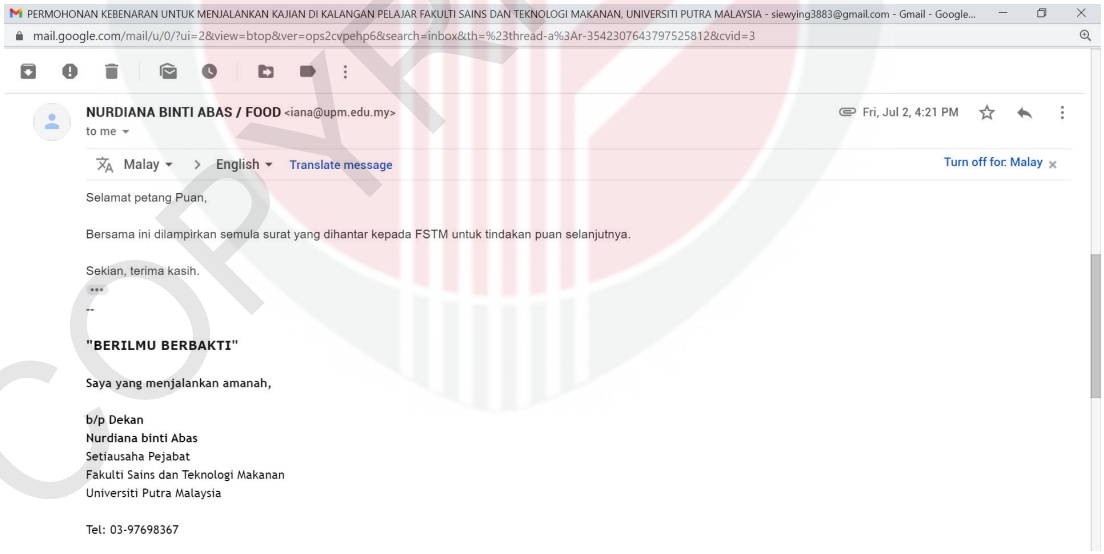
Tempoh kajian: Mei - Julai 2021

Di sini saya sertakan surat permohonan kebenaran untuk menjalankan kajian di Fakulti Sains dan Teknologi Makanan, Universiti Putra Malaysia dan surat kelulusan kajian saya daripada Jawatankuasa Etika Universiti untuk Penyelidikan Melibatkan Manusia (JKEUPM).

Segala kerjasama, pertimbangan dan kelulusan daripada pihak Prof./ Dr./ Encik/ Puan amat dihargai dan didahului dengan ucapan ribuan terima kasih.

Sekian terima kasih.

Yang Benar,
Ng Siew Ying
Pelajar Tahun Akhir
Bacelor Kejururawatan



PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI SAINS DAN TEKNOLOGI MAKANAN, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google...

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar-3542307643797525812&cvid=3

NURDIANA BINTI ABAS / FOOD <iana@upm.edu.my> Fri, Jul 2, 4:21 PM

to me

Malay › English Translate message Turn off for: Malay ×

Selamat petang Puan,

Bersama ini dilampirkan semula surat yang dihantar kepada FSTM untuk tindakan puan selanjutnya.

Sekian, terima kasih.

--

"BERILMU BERBAKTI"

Saya yang menjalankan amanah,

b/p Dekan
Nurdiana binti Abas
Setiausaha Pejabat
Fakulti Sains dan Teknologi Makanan
Universiti Putra Malaysia

Tel: 03-97698367

7.3 FACULTY OF DESIGN AND ARCHITECTURE

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI REKABENTUK DAN SENIBINA, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar4330868882821165792&cvid=4

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI REKABENTUK DAN SENIBINA, UNIVERSITI PUTRA MALAYSIA Inbox ×

Ng Siew Ying <siewying3883@gmail.com>
to dean.frsb, fatimah_mus, LEE

Thu, Jun 24, 11:04 AM

Selamat pagi dan salam sejahtera,

Prof./Dr./Encik/Puan,

Saya Ng Siew Ying (No. Matrik: 194845), pelajar tahun akhir Bacelor Kejururawatan ingin meminta kebenaran untuk menjalankan kajian di kalangan pelajar Fakulti Rekabentuk dan Senibina, Universiti Putra Malaysia. Tajuk kajian saya adalah seperti berikut:

"RELATIONSHIP BETWEEN HEALTH LITERACY AND FREQUENCY OF OUTPATIENT HEALTHCARE UTILISATION AMONG UNDERGRADUATE STUDENTS AT A PUBLIC UNIVERSITY IN SELANGOR"

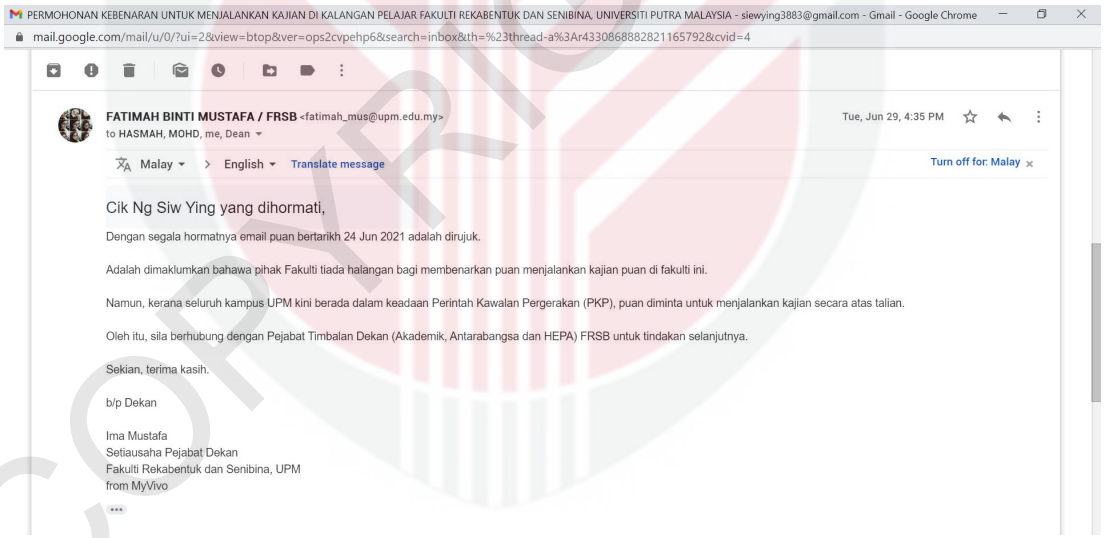
Tempoh kajian: Mei - Julai 2021

Di sini saya sertakan surat permohonan kebenaran untuk menjalankan kajian di Fakulti Rekabentuk dan Senibina, Universiti Putra Malaysia dan surat kelulusan kajian saya daripada Jawatankuasa Etika Universiti untuk Penyelidikan Melibatkan Manusia (JKEUPM).

Segala kerjasama, pertimbangan dan kelulusan daripada pihak Prof./ Dr./ Encik/ Puan amat dihargai dan didahului dengan ucapan ribuan terima kasih.

Sekian terima kasih.

Yang Benar,
Ng Siew Ying
Pelajar Tahun Akhir
Bacelor Kejururawatan



PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI REKABENTUK DAN SENIBINA, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar4330868882821165792&cvid=4

FATIMAH BINTI MUSTAFA / FRSB <fatimah_mus@upm.edu.my>
to HASMAH, MOHD, me, Dean

Tue, Jun 29, 4:35 PM

Malay › English Translate message

Turn off for: Malay ×

Cik Ng Siw Ying yang dihormati,

Dengan segala hormatnya email puan bertarikh 24 Jun 2021 adalah dirujuk.

Adalah dimaklumkan bahawa pihak Fakulti tiada halangan bagi membenarkan puan menjalankan kajian puan di fakulti ini.

Namun, kerana seluruh kampus UPM kini berada dalam keadaan Perintah Kawalan Pergerakan (PKP), puan diminta untuk menjalankan kajian secara atas talian.

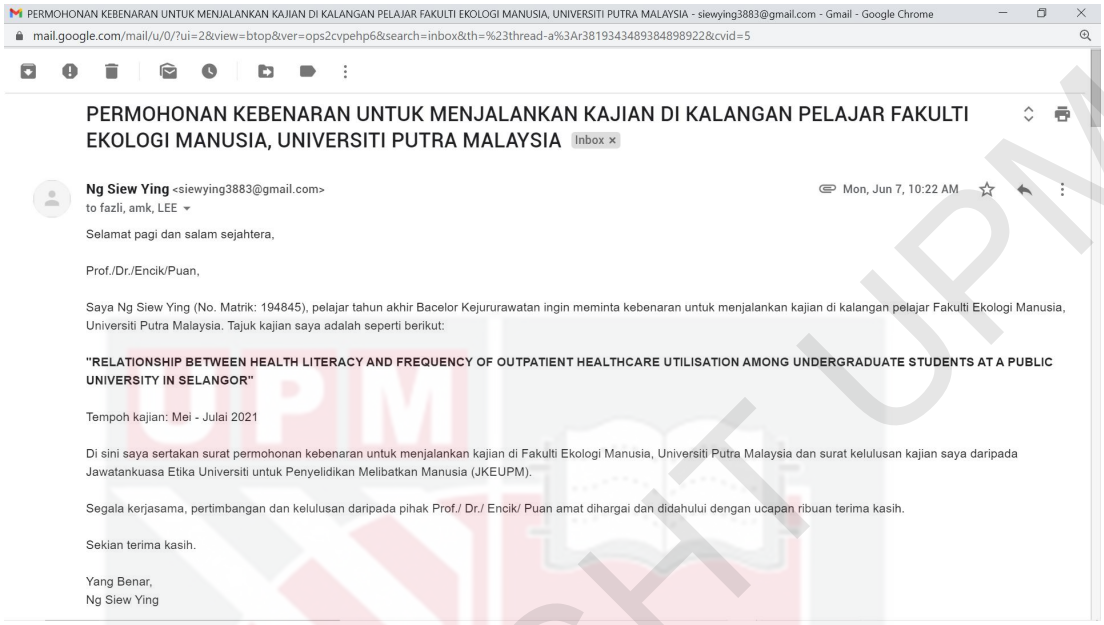
Oleh itu, sila berhubung dengan Pejabat Timbalan Dekan (Akademik, Antarabangsa dan HEPA) FRSB untuk tindakan selanjutnya.

Sekian, terima kasih.

b/p Dekan

Ima Mustafa
Setiausaha Pejabat Dekan
Fakulti Rekabentuk dan Senibina, UPM
from MyVivo

7.4 FACULTY OF HUMAN ECOLOGY



PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI EKOLOGI MANUSIA, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar3819343489384898922&cvid=5

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI EKOLOGI MANUSIA, UNIVERSITI PUTRA MALAYSIA Inbox ×

Ng Siew Ying <siewying3883@gmail.com> Mon, Jun 7, 10:22 AM

to fazli, amk, LEE

Selamat pagi dan salam sejahtera,

Prof./Dr./Encik/Puan,

Saya Ng Siew Ying (No. Matrik: 194845), pelajar tahun akhir Bacelor Kejururawatan ingin meminta kebenaran untuk menjalankan kajian di kalangan pelajar Fakulti Ekologi Manusia, Universiti Putra Malaysia. Tajuk kajian saya adalah seperti berikut:

"RELATIONSHIP BETWEEN HEALTH LITERACY AND FREQUENCY OF OUTPATIENT HEALTHCARE UTILISATION AMONG UNDERGRADUATE STUDENTS AT A PUBLIC UNIVERSITY IN SELANGOR"

Tempoh kajian: Mei - Julai 2021

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Segala kerjasama, pertimbangan dan kelulusan daripada pihak Prof./ Dr./ Encik/ Puan amat dihargai dan didahului dengan ucapan ribuan terima kasih.

Sekian terima kasih.

Yang Benar,
Ng Siew Ying

PERMOHONAN KEBENARAN UNTUK MENJALANKAN KAJIAN DI KALANGAN PELAJAR FAKULTI EKOLOGI MANUSIA, UNIVERSITI PUTRA MALAYSIA - siewying3883@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=inbox&th=%23thread-a%3Ar3819343489384898922&cvid=5

SAIFUL BAHRIE BIN ABDUL MANAP / FEM <sbahrie@upm.edu.my> Fri, Jun 25, 1:17 PM

to me, MOHAMAD, AZLINA, LEE

Malay › English Translate message Turn off for: Malay

Salam Sejahtera Ng Siew Ying,

Merujuk kepada permohonan serta penjelasan berkenaan kaedah pelaksanaan kajian yang akan dijalankan melalui telefon sebentar tadi, pihak Fakulti Ekologi Manusia tiada halangan untuk memberi kebenaran kepada saudari untuk melaksanakan kajian secara dalam talian melibatkan pelajar FEM.

Sekian.

SAIFUL BAHRIE BIN ABDUL MANAP
Penolong Pendaftar Kanan
Pejabat Timbalan Dekan (Akademik, Antarabangsa & HEPA)
Fakulti Ekologi Manusia
Tel: 03 9769 7160 | Fax: 03 89435385