KNOWLEDGE, ATTITUDE, AND PRACTICE OF SELF-MEDICATION AMONG UNDERGRADUATE DIPLOMA NURSING STUDENTS IN SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA (USM)

by

MUYASSARAH BINTI ZAINUDDIN

Dissertation submitted in partial fulfilment of the requirements for the degree of Bachelor Of Nursing (Honours)

June 2020

CERTIFICATION

This is to certify that the dissertation entitled "Knowledge, Attitude, and Practice of Self-medication Among Undergraduate Diploma Nursing Students, School of Health Sciences, Universiti Sains Malaysia (USM)" is the bona fide record of research work done by Ms. Muyassarah Binti Zainuddin during the period from September 2019 to August 2020 under my supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Nursing (Honours).

Main Supervisor,

.....

Pn. Salwismawati Binti Badrin
Lecturer
School of Health Sciences
Universiti Sains Malaysia,
Health Campus,
16150 Kubang Kerian,
Kelantan, Malaysia

Date: .....

DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research, and promotion purposes.

.....

Muyassarah Binti Zainuddin (Matric No: 134134)
Bachelor of Nursing (Honours)
School of Health Sciences,
Health Campus,
Universiti Sains Malaysia,
16150 Kubang Kerian,
Kelantan, Malaysia

Date: .....

ACKNOWLEDGEMENT

Thank you Allah S.W.T, the Great Almighty, the author of knowledge and wisdom, for His endless blessing and love.

The completion of this undertaking are impossible without the support and assistance from those people who either directly or indirectly involved. My deep gratitude goes first to Puan Salwismawati, my supervisor. Her willingness to guide and engaged fully with my research, her generosity with time and patience in answering my questions and curiosity. My appreciation extends to my colleagues. Of all their hard work in mentoring, encouraging, and gave me new perspectives in order for me to write a better part of this dissertation and also the memories along these 4 years of study.

Above all, I am indebted to my family for the huge opportunity and privilege that they gave me to pursue education on my chosen path. Their presence physically and emotionally has made this journey more bearable and paid its worth.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADR	Adverse Drug Reaction
HREC	Human Research Ethics Committee
IIUM	International Islamic University Malaysia
NSAID	Nonsteroidal Anti-Inflammatory Drug
OTC	Over-the-counter
RAM	Roy's Adaptation Model
SPSS	Statistical Package for Social Science
USM	Universiti Sains Malaysia
WHO	World Health Organization

ABSTRAK

Pengenalan terhadap ubatan kendiri merupakan isu yang tidak asing lagi bagi masyarakat kita atas faktor-faktor penyebaran yang sudah sekian lama muncul tidak kira samada melalui rakan sebaya, ataupun pendedahan pengetahuan dan media massa. Pelbagai kajian telah dilaksanakan bagi mengetahui pengetahuan, tingkahlaku, dan praktis pelajar dan hubungkaitnya dengan ubatan kendiri. Objektif bagi kajian ini adalah untuk mengetahui pengetahuan, tingkahlaku, dan praktis terhadap ubatan kendiri dalam kalangan pelajar sarjana muda Diploma kejururawatan, Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia (USM). Kajian keratan rentas melalui persampelan konvenien telah diguna pakai untuk menerangkan pengetahuan, tingkahlaku, dan praktis terhadap ubatan kendiri dalam kalangan pelajar sarjana muda Diploma kejururawatan, Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia (USM). Data telah dikumpul menggunakan borang soal-selidik berstruktur dan dianalisa melalui Pakej Statistik untuk Sains Sosial (SPSS) versi 22.0. Pearson's Chi-square telah digunakan untuk menganalisa objektif keempat, iaitu mencari hubungkait antara ciri-ciri pilihan (jantina dan tahun pengajian) dan tahap pengetahuan dan tingkahlaku terhadap ubatan kendiri kalangan pelajar sarjana muda Diploma kejururawatan dengan signifikan (nilai α) <0.05. Sebanyak 118 pelajar sarjana muda Diploma kejururawatan, Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia (USM) telah direkruit. Hasil perkaitan antara ciri-ciri sosio-demografi pilihan (jantina dan tahun pengajian) dan tahap pengetahuan terhadap ubatan kendiri telah merekodkan tiada hubungan signikan (nilai p> 0.05) bagi jantina manakala terdapat hubungkait positif antara tahun pengajian dan ubatan kendiri (nilai p<0.05). Perkaitan antara ciri sosio-demografi pilihan (jantina) dan tahap tingkahlaku dalam kalangan pelajar sarjana muda Diploma kejururawatan, didapati tiada hubungkait signifikan (nilai p= 0.282). Hubungkait antara ciri sosio-demografi pilihan (tahun

pengajian) dan tahap tingkahlaku mencadangkan tiada hubungan signifikan disebabkan oleh nilai *p* lebih daripada 0.05 (nilai *p*= 0.763). Kajian ini menyediakan maklumat yang berguna untuk dijadikan panduan terutamanya dalam merangka aktiviti-aktiviti pendidikan yang lebih konvensional dan idea-idea baru dalam kalangan pelajar kejururawatan di institusi pendidikan.

ABSTRACT

The introductory of self-medication is no foreign to our society as its advertising factors has been long poses either through peers, or exposure of knowledge and mass media. Lots of study has been conducted in determining the students' knowledge, attitude, and practice in correlation to self-medication. The objective of this study is to determine the knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM). A cross-sectional study via convenient sampling was applied in this study to describe the knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM). Data were collected by using a structured self-administered questionnaire and analysed via Statistical Package for Social Science (SPSS) version 22.0. Pearson's Chi-square test was used to analyse the fourth objective, which was to determine the association between selected data (gender and academic year) with the level of knowledge and attitude on self-medication among undergraduate Diploma nursing students with significant level (α value) was set <0.05. A total of 118 undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM) were recruited. The results of association between selected socio-demographic characteristics (gender and academic year) and the level of knowledge on self-medication had reported not significant associated (*p*-value > 0.05) for gender while a positive correlation between academic year and self-medication (*p*-value <0.05). The association between selected socio-demographic characteristic (gender) and the level of attitude on self-medication among undergraduate Diploma nursing had found not significant associated (*p*-value= 0.282). Between socio-demographic characteristic (academic year) and the attitude level on self-medication, it suggested not significant relation as the *p*-value is more than 0.05 (*p*-value=

0.763). This study gave out basis information that might be useful as a reference especially in designing more conventional and new ideas for educational activities among nursing students in educational institution.

CHAPTER 1: INTRODUCTION

1.1 Background of Study

It is common as a human to feel sick or discomfort once a while and it is also our nature to seek for immediate remedial, be it herbs, potions, modern medication, etc. just to make the trouble symptoms to resolve quickly. Lots of alternative have been discovered on behalf of the health department. Nowadays, people are keen on fixing their health issues via self-medication. Self-medication is best described as the treatment of common health ailments with medicines, taken with the patient's initiative without consulting medical supervision or advice from a pharmacist (Parihar, Sharma, & Malhotra, 2018). In normal stances, the consuming of medication should be based on the current situational narratives of patients, consult by a certified medical or pharmacist. The outcome will be either for the diagnosis, prescription, or surveillance treatment purposes. When it comes to self-medication, it all depends on patients' prediction on what is the best for them to treat their self-recognized symptoms incited upon them. Self-medication forms an integral part of self-care, but the involvement of drugs may do good or harm to them (Badiger et al., 2012).

The phenomenon of self-medication do come from vary sources of action. One can acquire medications without the need for formal prescription or resubmitting their old prescription to purchase and gain the medicines as well as the habitual of sharing medicines with the kin or members of the same social circle (Beyene et al., 2017). What even more, some has been practicing the using of leftover medicines stored at home after some time or abide the prescription by prolonging or interrupting it early or increase or decrease the dosage than what are they originally prescribed (Parihar et al., 2018).

The “perpetrator” of this act never mind for any forms of people. Different studies had shown significant patterns of self-medication among different populations (Beyene et al., 2017). A generalized conclusion is achieved as it showed that self-medication is more common among groups of nurses, pharmacists, physicians, and students with pharmacological knowledge background (medical, nursing, and pharmacy) compared to the general population (Aljinović-Vučić, Trkulja, & Lacković, 2005). They are a segment of populations that are highly educated about medications and have easy access to seek for medications as well as the knowledge to be used whenever they needed (Mehta & Sharma, 2015). A study by James, Handu, Al Khaja, Otoom, & Sequeira (2006) has suggested that students possessed poor knowledge about adequate self-medication. On the other hands, they seemed to understand more about the knowledge of usefulness and harms of medication. Fact check, students do equipped with the knowledge of medications, but till what extends, they do not have the power to interpret and understand what makes a good self-medication.

In this study, undergraduate Diploma nursing students were included as the respondents. The researcher wished to conduct a study regarding the matter of knowledge, attitude, and practice of self-medication on the selected nursing students based on the current situational in Universiti Sains Malaysia (USM).

1.2 Problem Statement

Self-medication is the use of drugs with therapeutic value but without consulting professional prescription or advice (Raut et al, 2014). It is also known as the used of nondescription medicines. The intend to do this act drive by the need to relieve the side symptoms like headache, coughs, cold, throat, stomach ache, and fever (Uppal, Agarwal, & Roy, 2014). Most cases start from a very trivial health issues but, with the consume of

inappropriate portion and unfavourable self-condition, eventually it become worse. Those who have direct contact with health association like nurses, physician, pharmacist, and the students are contributed to most of the ratios' incidence (Sharif, Bugaighis, & Sharif, 2015). The abuse privileges of pharmacological knowledge and easy gain of the drugs make this action become more distinctive among them.

In cases of students, the sentiments of using non-prescription medicines are due to the reasoning of prior experiences of oneself or a friend taking the very same medicines (Uppal et al., 2014). It is also seen as an economically convenient and can save time spent rather than waiting in line to seek for doctor. Self-medication is seen as a life saver for a readily relief of acute medical problems and in emergency situations (Parihar et al., 2018). Notwithstanding, sometimes valuable knowledges can turn against people as it makes them too confident on treating their own illness. The consuming of medication should be based on how to take or use the drugs, the probable effects and side effects, the ways to monitor these side effects, the possible interaction with other drugs, the duration of the drugs, etc. (Raut et al, 2014). On another perspective of self-medication, it brings dangers to many things like habitual and allergic reactions that may be severe or even worse, fatal (Mehta & Sharma, 2015). When it comes to the dosage of the drugs, self-medication practice accordingly to what are the students perceived in order to resolve the symptoms. Under-dosage may not even cure the symptoms meanwhile over-dosage will affect and cause a collateral damage to the organs (Mehta & Sharma, 2015).

The idea of self-medication among students- the knowledge of benefits and harmful effects of drugs, then it turns into attitudes on what is the appropriate way for the drugs should be taken, and eventually committing self by turning it into practice. This is probably the path that the students assure of its beneficiary.

1.3 Significance of the Study

Self-medication is an own personal choice and responsibility. It is now considered as a part of self-care, that can either bring the good or bad things to the individual's well-being. Looking from the analysis, this study would provide significant data that would be addressing the matter of knowledge, attitude, and practice of self-medication among Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM). The measurement on these 3 major components gave an insight and understanding from the students' perspectives on how they use their existing knowledge on medication and act on it when needed. Interpretation of the data described the majority ways of thinking and the reasoning for the actions. Within this entry, the finding's end results made a brilliant addition to the subjective literature data regarding the used and influenced of self-medication among nursing students.

Furthermore, the probable significant association between selected data (gender and academic year) with the level of knowledge and attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM) showed which among them are prone to do so than the others. The authorities that are responsible for the nursing curriculum will be more aware on which side is in need to give more intensive and exposure for the approaching topic of self-medication.

1.4 Research Questions

i. What are the level of knowledge on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM)?

ii. What are the level of attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM)?

i. What are the practice on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM)?

ii. Is there any association between selected data (gender and academic year) with the level of knowledge and attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM)?

1.5 Research Objectives

1.5.1 General Objectives

The general objective of this study is to determine the knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

1.5.2 Specific Objectives

iii. To determine the level of knowledge on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

iv. To determine the level of attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

v. To determine the practice on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

vi. To determine the association between selected data (gender and academic year) with the level of knowledge and attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

1.6 Hypothesis

H_0 : There is no significant association between selected data (gender and academic year) with the level of knowledge and attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

H_A : There is significant association between selected data (gender and academic year) with the level of knowledge and attitude on self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

1.7 Conceptual and Operational Definitions

Self-medication An individual self-selection on the use of medicines or medicinal products including herbal and traditional to treat self-recognized symptoms or disorders, or, the use of a past prescribed medication by a physician for chronic or recurring disease or symptoms intermittently or continuously ("WHO Guidelines for the regulatory

assessment of medicinal products for use in self-medication," 2000).

In this study, the knowledge, attitude and practice of self-medication among undergraduate Diploma nursing students were assessed by using a structured self-administered questionnaire with the permission from the original authors (Abebe, Tenaw, Dessalegn, & Franelee, 2017).

Knowledge

The state or fact of being aware of something, or a familiarity gained through association (Merriam-Webster, 2019).

In this study, the level of knowledge on self-medication among undergraduate Diploma nursing students was assessed by using a structured self-administered questionnaire (15 items on knowledge) with the permission from the original authors (Abebe, Tenaw, Dessalegn, & Franelee, 2017).

Attitude

The arrangement or mental position that assumed for a specific purpose, fact, or state (Merriam-Webster, 2019)

In this study, the level of attitude on self-medication among undergraduate Diploma nursing students was assessed by using a structured self-administered questionnaire (10 items on attitude) with the permission from the original authors (Abebe, Tenaw, Dessalegn, & Franelee, 2017).

Practice	To engage or perform habitually (Merriam-Webster, 2019). In the study, the practice of self-medication among undergraduate Diploma nursing students was assessed by using a structured self-administered questionnaire (6 items) with the permission from the original authors (Abebe, Tenaw, Dessalegn, & Franelee, 2017).
Undergraduate	Undergraduates are the students who are currently enrolling a college or university and has not received a first, especially a bachelor's degree (Merriam-Webster, 2019). In this study, it referred to undergraduate Diploma nursing students (Year 1, 2 and 3) that are currently studying in School of Health Sciences, Universiti Sains Malaysia (USM).

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provide general information about self-medication, prevalence of self-medication, knowledge regarding self-medication, attitude regarding self-medication, practice regarding self-medication, and the association between socio-demographic characteristics and the knowledge and attitude on self-medication. The conceptual framework used in this study, Roy's Adaptation Model (RAM) is also discussed.

2.2 Self-medication

The term of "self-medication" is actually explains its nature and can be understood directly- the used of nondescription medicines without a renewal prescription and not consulting the physicians. Responsible self-medication has been advocated by the World Health Organization (WHO) in such cases that do not require medical consultation for the treatment and prevention of symptoms ("WHO Guidelines for the regulatory assessment of medicinal products for use in self-medication," 2000). This intervention is viewed as a cheaper alternative in treating common illnesses especially in those country with difficult health facilities access and shortage of personnel in rural areas. A responsible self-medication can save the scarce medical resources from getting wasted on treating minor ailments that later reduce the burden of health care facilities, and eventually decrease the cost and time of people to visit the facilities just because of minor symptoms (Gyawali, Ravi Shankar, Poudel, & Saha, 2015).

The intention on self-medicated may not be seen as a bad decision-making in some situation as the effects are rarely harmful and purposely for a quick relief only but later,

it may come in handy. Various studies had portrayed self-medication in a bad light, as it was believed to lead a delay in care seeking that later cause a paradoxical economic loss due to the delay of diagnosis of underlying conditions and the supposedly treatment. The stance on saving money for the use of self-medication is somehow contradicted with the way it supposed to serve (Mehta & Sharma, 2015). The interactions with prescribed medicinal may increase the likelihood of adverse drug reaction (ADR) as well as the failure of the patients to describe the actual symptoms, with additional symptoms from self-medication as it may cause troubles for the physician to diagnose and further delay the treatment (Gyawali et al., 2015). According to Abebe, Tenaw, Dessalegn, & Franelee (2017) and Parihar et al. (2018), self-medication would only resulting in waste of resources, increases the percentage of resistance of pathogens and causes several health hazards like ADR and drug dependence.

All the doing on this behaviour is inevitable; there is a need for greater responsibility of drug regulatory authorities and health care professional on the control of self-medication (Mehta & Sharma, 2015). A proper drug statutory should be employed with rational alternatives like putting a limitation on the amount of over-the-counter (OTC) drugs provided, prohibiting the supply of medicines without a valid prescription, and only allowing pharmacy graduates to sale drugs as it would potentially reduce the risk of abuse of drug dose and duration that can be controlled to some extent (Beyene et al., 2017; Mehta & Sharma, 2015). The positive attitude towards self-medication is acceptable when the students are accountable enough to seek and consults certified pharmacist (Raut et al, 2014).

2.3 Prevalence of Self-medication

Based on a cross-sectional study conducted among pharmacy students from International Islamic University Malaysia (IIUM), a total percentage of 77.2% of the female students would preferred self-medication. This attributed to the facts that most of the female students were reluctant to go out and seek for physician or treated as an outpatient for trivial matters (Mohamed Elkalmi et al., 2018). This finding was in agreement with a study by Raut et al (2014) with an additional of menstrual problems as one of the predictors. Parihar et al. (2018) has stated the prevalence of self-medication among medical students in Acharya Shri Chander College of Medical Sciences and Hospital, Jammu is higher in males at 50% while 45.5% of female students were in favour of self-medication. However, another study noted that there was no distinction between the prevalence rate of self-medication on both gender- prevalence rate showed at 92% (94% male and 91% female students) (Mehta & Sharma, 2015). Female students self-medicate more than the males but there was no significant association between the gender (Gyawali et al., 2015).

2.4 Knowledge Regarding Self-medication

The pre-existing knowledge on self-medication gives the reasoning from where the ideas of committing comes from- be it either the students against or in favour of the action. According to the study conducted by Parihar et al. in 2018, most of the students are aware and knew the intend of self-medication. Based on the students' reasoning, majority of them are rather not to visit the doctor just because of minor illnesses, followed by past experience, ease and convenience, and as a quick relief. This study is in sync with the results from Beyene et al. (2017) with an addition of emergency use as one the causes for self-medicated. In contrast, those who against self-medication are conscious and fear

on the risk of adverse effects, risk of using the wrong drugs, risk of misdiagnosis, and risk of drug dependence (Parihar et al., 2018; Johny, Torgal, & Mathew, 2017). Few has stated that the condition may become worse and drug resistance may occur.

When asked about their level of awareness on the mentioned issues, most of the respondents would read the package insert and search the drug's information; fully understood the content (44.1%), partially understood (31.6%), and not at all (16%) (Raut et al, 2014). Among the majority of study respondents, previous doctors and pharmacist are chose as the main source of information for the drugs used for self-medication. However, the study also concluded that half of the students are prone to use internet as their secondary choice as well as asking advices and knowledge from parents, family, and health education (Mohamed Elkalmi et al., 2018). Aside that, reading materials (like books), advice from physician or nurses but without prescription and personal experience are also accounting for the responses (Beyene et al., 2017).

2.5 Attitude Regarding Self-medication

Students' attitude towards self-medication were explored by assessing their points of agreement (acceptable) or disagreement (unacceptable). According to Johny et al. in 2017, he found about 69.3% from his respondents were confident that they could treat minor illnesses while others were not sure and not confident on treating themselves at 25.8% and 4.6% respectively. Major part of the respondents also felt that learning pharmacology have made them more caution and considered the issues (drug selection, right dose, adverse effects and etc) first before seriously self-medicated. On the other hands, a study by Parihar et al. (2018) strongly disagreed and quoted for negative behaviour when enquired about the influence of medical education. Self-medication which is also part of self-care can be practiced when the illness in not too serious

(Mohamed Elkalmi et al., 2018). A study involved Pharmacy students in 2017 had stated that self-medication would be harmful if taken without proper knowledge of disease and drug. They also in agreement as it is acceptable for medical students to commit self-medication as well as believed those who are health science students to have good ability to practice self-medication (Beyene et al., 2017).

2.6 Practice Regarding Self-medication

Despite of having stances on the opposition side, some of the students still find themselves committing the deeds. Raut et al. (2014) has found a situational difference in forms of accommodation of study population (hostlers versus day scholar). The hostlers were revealed to have more positive attitude towards self-medication as to compare with day scholar. The reasons are, self-medication is seen as an immediate solution as they have to take care of themselves and unlike at home, they can easily obtained drugs from inmates. Others might retrieved the source of self-medication from the nearest pharmacy shop as OTC drugs, primary health care centre, medical representatives and friends or family. The problem with choosing friends or family as the source of medication were that, it might carried the risk of sharing expired medication or the prescribed dose of medication was never meant for the students' condition or related to the problems (Raut et al, 2014).

The indications of self-medication comes with the need to resolve common health ailments like fever, headache, body pain as well as cough, diarrhea, and acidity (Raut et al, 2014). Beyene et al., (2017) and Mohamed Elkalmi et al. (2018) had achieved the same agreement as the previous study with fever and headache as the most frequent morbidities. Following symptoms like gastric pain, constipation, vomiting, and common cold also added to the list (Abebe et al., 2017; Parihar et al., 2018). Furthermore, according to

Johny et al. (2017), the most common drug groups used by the students for self-medicated purposes were analgesics and antipyretics or more specifically nonsteroidal anti-inflammatory drugs (NSAID) like paracetamol and ibuprofen. This finding was in conjunction with the study conducted by Parihar et al. (2018) with additional of antibiotics, antihistamines, antianxiety, and antifungal stated accordingly to the level of occasionally used. However, a study on self-medication among Malaysian pharmacy students beg to differ as their most common classes of drugs used are vitamin supplements (66%), antipyretics (62.5%), and analgesics (60.4%). Their least commonest drugs were found to be antibiotics and antiemetics (Mohamed Elkalmi et al., 2018).

In case of the frequency of self-medication taken, averagely, most of the students rated "sometime", "rarely", and "no one always" as their either options (Raut et al, 2014). Within the same study, they also found a strict correlation between the frequency of self-medication consuming and ADR. The first impression usually perceived on those students who took "sometimes" self-medication to be more prone on getting ADR while comparing with "rarely taking" students. A study reported that students had practiced self-medication with the most frequency 1-5 times in the past one year (Johny et al., 2017).

2.7 Association Between Socio-demographic Characteristics and the Knowledge and Attitude on Self-medication

The association of socio-demographic characteristics with self-medication concerning the gender and current academic enrolment of students. According to Mohamed Elkalmi et al. (2018), his study reported with no statistically significant association in term of gender (*p*-value= 0.603) by looking from the knowledge domain. Another study had quoted no significant association according to respondents' gender (*p*-

value=0.345) in knowledge scores (Gyawali et al., 2015). On behalf of academic enrolment of students, it seemed like those who had a fair of knowledge about drug information were most likely to get involve in self-medication. Students especially the senior that have the knowledge on pharmacology and applied therapeutics subjects have a good level of awareness on various aspects self-medication; aware about OTC drugs and generic, aware of the side effects of drug administered, and aware of the problems of self-medication like antibiotic resistance, drug dependence etc and yet, they would still indulged in this activity. This somehow led to a false sense of confidence as they felt that they are good enough to self-diagnosis and self-management that eventually had brought them to self-prescribed irrationally (Raut et al, 2014). This also reflects the influence of medical training as it is noted that the cognitive level is gradually increase by academic years (Mohamed Elkalmi et al., 2018).

The association between socio-demographic and attitude on self-medication showed no significant association in scores relating to gender (*p*-value= 0.268) (Gyawali et al., 2015). When it comes to the difference in years of academic, senior students were said to have more positive attitude towards self-medication if to compare with the younger ones. The reasons were probably due to in-depth exposure in clinical topics and practice in hospital as well as knowledge from classroom teaching regarding drugs and disease (Raut et al, 2014).

2.8 Roy's Adaptation Model (RAM)

To inform this study, Roy's Adaptation Model (RAM) was used. The developer, Callista Roy which was also a nurse and sociologist, had based her theory on Harry Helson's work in psychophysics and her very own observation on the children; their resilience and ability to adapt to major physical and psychological changes. The model

was first introduced in Nursing Outlook as “Adaptation: A Conceptual Framework in Nursing” (Roy, 1970) and later published in book form in 1976 and 1984 as Introduction to Nursing: An Adaptation Model (Roy, 1976, 1984). For this theory model, Roy concentrated on the individual as a biopsychosocial adaptive system that employed in a feedback cycle of input. The interrelationship between individual and the environment are the prime sources for the modification of adaptive behaviour, an ongoing purposive response in order to maintain the balance between vary of stimuli. The adaptive response is what she viewed as a contribution to health, a process of being and segregation. Ineffective and maladaptive response do not take part of health.

According to Roy, the stimuli (open system) are based on three classes: focal, contextual, and residual stimuli. When it comes to the relation to this study, self-medication is the focal stimuli (internal or external stimuli) that immediately confronting individual and supporting the behaviour, leading to ineffective response such as fever and pain. Contextual stimuli are all the other internal or external stimuli that act as the contributor and further influence the effect of focal stimuli. Examples would be the dosage of drugs and frequency drugs taken. For residual stimuli it is the beliefs, attitude, or traits having an indeterminate on person’s behaviour, but the effects are not validated.

Following the open system is the throughput, the processes contained by coping mechanism by implementing the adaptive system and also the effectors, psychological mode, self-concept, and role function and interdependence in adaptation. For a brief summarization, psychological mode comprised the body’s physiological needs and adaptation ways in regard to fluids and electrolytes, circulation and oxygenation and so on. For an example would be the elicit response of sweat and common cold may indicate the symptoms of upcoming fever. The intend to take antipyretics as an immediate relief may surface as seeing this symptoms are quite common and prior to past experience. Next

is self-concept. It includes two elements which are the physical self like sensation and body image and the personal self that involves self-ideal, self-consistency, and moral-ethical self. The role function mode explains on the need for social integrity and their position and performance roles given within the society. As for the interdependence mode, it refers to one's relation to others and support system that provide help and affection.

For the outputs, it refers to the individual behaviour either it is adaptive or ineffective responses. These outputs give feedback for the system, derived by the individuals (Blais & Hayes, 2011, p. 113-115).

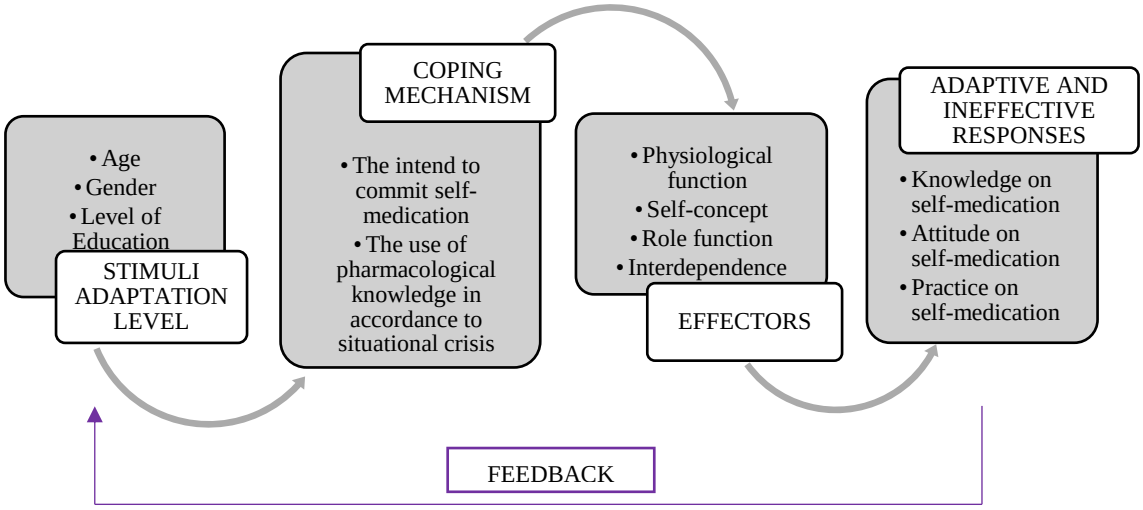

Figure 2.1: Illustration of Roy's Adaptation Model

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter emphasises and explains on the approach utilized to conduct this study. An appropriate research methodology is crucial in order to seek for the rightful way on the conduction of study; research design, study setting and population, sampling plan (including inclusion and exclusion criteria and sampling method), instrumentation (including instrument and validity and reliability of instrument), variables (including variables measurement and scoring), ethical consideration, data collection plan, data analysis, and expected outcome of the study.

3.2 Research Design

A cross-sectional study was applied in this study to describe the knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM).

3.3 Research Location

The study setting was located at Universiti Sains Malaysia (USM).

3.4 Research Duration

The study was commenced from September 2019 until August 2020.

3.5 Research Population

The target population was carried out among undergraduate Diploma nursing students that are currently enrolled in School of Health Sciences, Universiti Sains Malaysia (USM).

3.6 Sampling Plan

3.6.1 Inclusion Criteria

Subjects who meet all the following criteria were enrolled in this study:

- Diploma nursing students (Year 1, 2, and 3) only
- Students who are willing to participate and available during research period

3.6.2 Exclusion Criteria

Subjects who meet any one of the following criteria were excluded from enrolment in this study:

- Advanced Diploma students that are studying in School of Health Sciences
- Students in other programmes in School of Health Sciences

3.6.3 Sample Size Estimation

The sample size of this proposed study was determined by calculating sample size for study objectives. The exact sample size then finalized by considering the one with largest number.

The sample size for the objectives were calculated by using single mean formula:

$$n = \left[\frac{Z}{\Delta}\right]^2 \times p(1-p)$$

n = Sample size required

Z = Value representing the desired confidence level

Δ = Precision

p = Anticipated population proportion

The parameter used were as follows

Prevalence (p) KAP of self-medication was 50%, Z-value 1.96 corresponding to 95% confidence interval (CI), the significant level is 0.05, and margin of error (Δ) was 5% (Abebe et al., 2017).

Substituting,

$$n = \left[\frac{Z}{\Delta}\right]^2 \times p(1-p)$$

$$n = \left[\frac{1.96}{0.05}\right]^2 \times 0.5(1-0.5)$$

$$n = 384$$

The final sample size was determined as follows using correction formula:

$$nf = \frac{no}{1+\frac{no}{N}}$$

nf = Final sample size

no = Initial sample size

N = Number of nursing students in Universiti Sains Malaysia

Substituting,

$$nf = \frac{no}{1+\frac{no}{N}}$$

$$nf = \frac{384}{1+\frac{384}{154}}$$

$$nf = 107$$

Hence, the sample size was 107. However, after considering a non-response of 10%, the adjusted calculated sample (n) was:

$n = 107 + 10\%\ non\ response\ rate$

$n = 107 + 10.7$

$n = 117.7$

$n = 118$

The total calculated sample size was 118.

3.6.4 Sampling Method

This study was using non-probability method via convenient sampling to recruit subjects for this proposed study.

3.7 Research Instrument

In this study, data were collected by using a structured self-administered questionnaire with the permission from the original authors (Abebe et al., 2017).

The questionnaire comprises of 4 sections.

I) Section A consists of demographic information like gender, age, and academic year of participating students (3 items)

II) Section B questions are designed to distinguish the participants' general knowledge about self-medication (15 items)

III) Section C questions are focused on the attitude of participants regarding the safety of self-medication (10 items)

IV) Section D consists of questions concerning participants' practice of self-medication (6 items)

Overall, there were 34 questions need to be answer.

3.7.1 Translation of Instrument

The English version of the instrument was directly used in order to retain the meaning and context of the original. The instrument comprised of simple English

sentence structures and thus, made it easier and understandable in accordance to students' level of comprehension.

3.7.2 Validity and Reliability

The questionnaire was reviewed by three content experts among nursing lecturers. Then, pilot study was done to ensure the reviewed questionnaire is properly designed and understandable for the study population.

3.8 Variables

3.8.1 Variables Measurement

The variables used in this study can be categorized into dependent and independent variables. Table 3.1 summarized the grouping of the variables.

Table 3.1: Independent and dependent variables

Independent variables	Dependent variable
Socio-demographic characteristics; (age, gender, and academic year).	Knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students.

The knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students in School of Health Sciences, Universiti Sains Malaysia (USM) were measured by using a simple scoring system. For section B, 15 responses were designed to distinguish the respondents' general knowledge about self-medication in forms of true or false statements. The score of exact answers were coded as "1" and score of wrong answers were coded as "0". The count (score) for each respondent then were total up and the aggregate scores were used to calculate the mean, standard deviation, and

other descriptive statistics. Based on these results, respondents who had correctly answered more than the mean questions on the knowledge towards self-medication were considered as knowledgeable.

Section C (attitude) was presented in positive statements that came together with the options; “Strongly agree”, “Agree”, “Disagree”, and “Strongly disagree”. The overall attitude scores were then sum up in order to calculate for the mean, median, standard deviation, and other descriptive statistics. By considering the median, those with the scores above median were labelled as having favourable attitude while those with scores below median were labelled as having unfavourable attitude towards self-medication.

For section D (practice), the frequencies of selected answers or options among respondents were calculated and tabulated as it had to be translated into mean, median, and other descriptive statistics.

3.8.2 Variables Scoring

The scores of variables were coded, computed, and analysed via Statistical Package for Social Science (SPSS) version 22.0 and interpreted in descriptive statistics (frequency, percentage, mean, and standard deviation). The results were presented in absolute figures (percentage) as depicted in tables.

3.9 Data Collection Plan

Data collection was commenced in February 2020 until March 2020 upon getting approval from the Human Research Ethics Committee (HREC). The overall data collection process was illustrated as in the flowchart below and the planning of research activity was presented in Gantt chart (Appendix F).

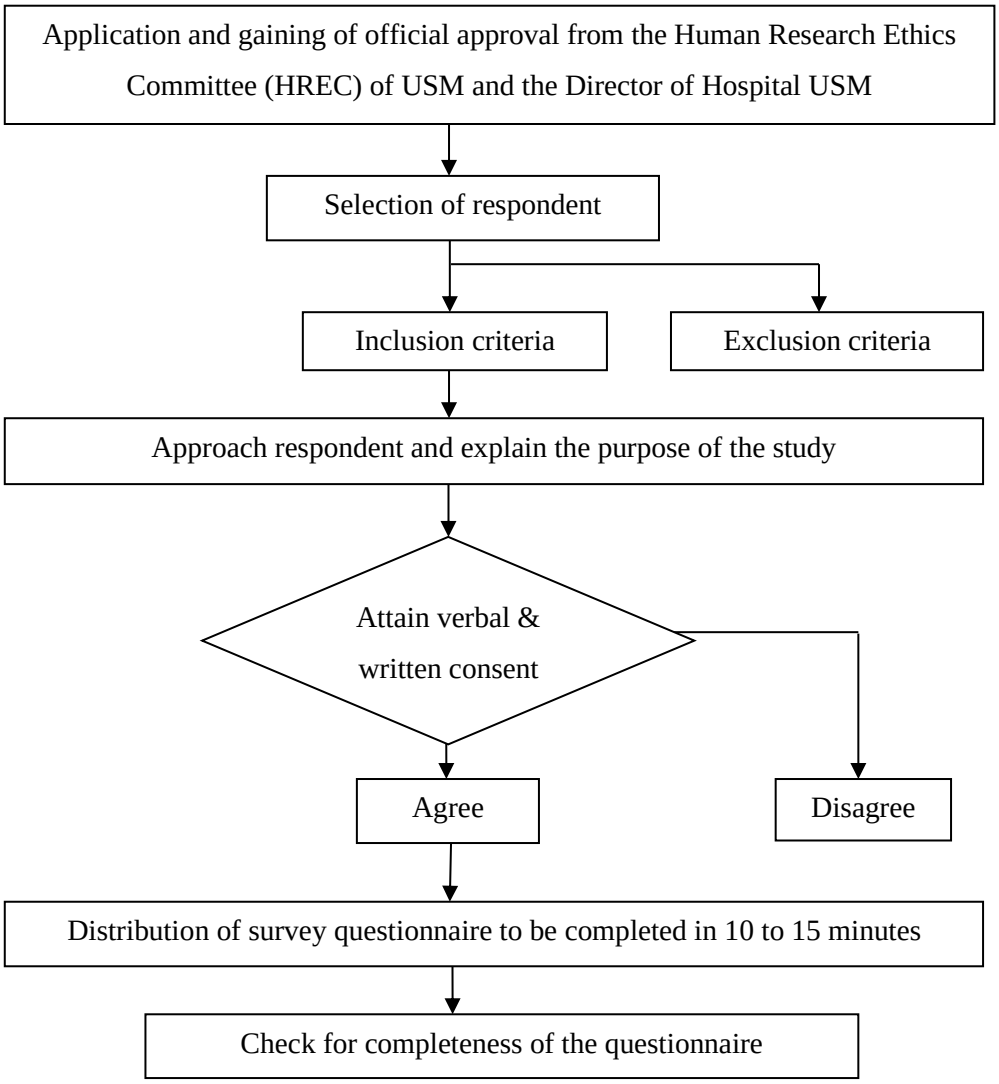

Figure 3.1: Flowchart of data collection process

3.10 Data Analysis

The data were entered and analysed by using a computer software, Statistical Package for Social Science (SPSS) version 22.0. The statistics of knowledge, attitude, and practice of self-medication among undergraduate Diploma nursing students were described in forms of frequency and percentage. Pearson's Chi-square test was used to analyse the fourth objective, which was to determine the association between selected data (gender and academic year) with the level of knowledge and attitude on self-