SELF-REPORTED EMPATHY AMONG NURSING STUDENTS OF SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA

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BY

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Dissertation submitted in partial fulfilment of

the requirements of the degree

of Bachelor of Nursing (Honours)

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CERTIFICATE

This is to certify that the dissertation entitled "Self-reported Empathy Among Nursing Students of School of Health Sciences, Universiti Sains Malaysia" is the bona fide record of research work done by Ms Fatinnur Badrina binti Ahmad Sani during the period from October 2021 to July 2022 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).

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledge. 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 promotional purposes.

FATINNUR BADRINA BINTI AHMAD SANI

Date: ……

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LAPORAN EMPATI DIRI DALAM KALANGAN PELAJAR KEJURURAWATAN DI PUSAT PENGAJIAN SAINS KESIHATAN, UNIVERSITI SAINS MALAYSIA

ABSTRAK

Empati mempunyai kesan yang signifikan terhadap hubungan antara jururawat dan pesakit, dan kualiti penjagaan yang mereka berikan. Sejak konsep empati mula diperkenalkan ke dalam bidang sains kejururawatan, ia telah diiktiraf sebagai komponen penting dalam penjagaan kejururawatan yang cekap dan juga dalam pendidikan kejururawatan. Kajian ini bertujuan untuk menilai tahap empati dalam kalangan pelajar kejururawatan Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia. Selain itu, kajian ini juga menyiasat hubungan antara data sosio-demografi dengan tahap empati dalam kalangan pelajar kejururawatan Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia. Data dikumpulkan melalui satu set soal selidik yang telah didaptasi dari Spreng et al. (2009) dan diedarkan secara dalam talian, dari Mac 2022 hingga Mei 2022. Seramai 187 orang pelajar kejururawatan berumur antara 18 hingga 29 tahun dari program diploma dan ijazah terlibat dalam kajian ini. Hasil kajian menunjukkan bahawa majoriti pelajar kejururawatan di USM (n = 111, 59.4%) mempunyai tahap empati yang tinggi. Dua data sosio-demografi iaitu jantina (p = 0.001) dan program pengajian (p = 0.016) mempunyai perbezaan yang signifikan dengan tahap empati. Kesimpulannya, walaupun kebanyakan pelajar kejururawatan di USM mempunyai tahap empati yang tinggi, penemuan ini juga menunjukkan beberapa pelajar dengan tahap empati yang rendah, yang bermaksud masih ada pelajar yang kurang empati. Oleh itu, keupayaan pendidikan selanjutnya perlu dipertimbangkan untuk meningkatkan tindak balas empati.

SELF-REPORTED EMPATHY AMONG NURSING STUDENTS OF SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA

ABSTRACT

Empathy has a significant impact on the relationship between nurses and patients, and on the quality of care that they provide. Since the time when the concept of empathy was first introduced into the field of nursing science, it has come to be acknowledged as an essential component of efficient nursing care as well as in nursing education. This study aimed to assess the level of empathy among nursing students of School of Health Sciences, Universiti Sains Malaysia. Besides that, this study also investigates the association between socio-demographic data with the level of empathy among nursing students of School of Health Sciences, Universiti Sains Malaysia. Data was collected through a set of questionnaires adapted by Spreng et al. (2009) that was distributed through an online platform, from March 2022 to May 2022. A total of 187 nursing students aged between 18 to 29 years old from diploma and degree programme were involved in this study. The findings revealed that majority of nursing students in USM (n = 111, 59.4%) have a high level of empathy. Two socio-demographic data which are gender (p = 0.001) and programme of study (p = 0.016) have statistically significant difference with level of empathy. In conclusion, even though most of the nursing students in USM have high level of empathy, the findings also show quite a few numbers of students with low level of empathy, which means there are still students with lack of empathy. Hence, a further ability of education needs to be considered to improve empathic response.

CHAPTER 1

INTRODUCTION

1.1 Background of The Study

Empathy is a personality quality that has a significant impact on interpersonal relationships and communication abilities (Hemmerdinger et al., 2007). Since its introduction in nursing science in 1973, the idea of empathy has come to be recognised as a necessary component of effective nursing care (Herdman, 2004; Kunyk & Olson, 2001; Määttä, 2006). According to Hojat (2009), empathy is a cognitive attribute mainly that includes the understanding of experiences, problems and perspectives of the patient, and the ability to communicate this understanding and an intention to help. Empathy is both a multidimensional and skills-based construct according to the conceptual background provided by Mercer and Reynolds, (2002). They described four components of the empathy construct: cognitive elements (identify and understand another's feelings), emotional (experiment with and share feelings), moral (internal encouragement to empathise), and relationship (communicative response to understanding).

Empathy is a fundamental aspect of all human relationships, and it is especially important in the nurse–patient relationship (Cunico et al., 2012) that has been proven to boost patient satisfaction (Derksen et al., 2013). It also lowers the chances of misunderstandings, and, as such, demands (Kelm et al., 2014; Nosek et al., 2014; B. Williams, Boyle, et al., 2014). Yu and Kirk (2009) concluded after performing a comprehensive review that when patients are cared for by nurses who demonstrate empathy, they feel lower levels of anxiety and discomfort; at the same time, the feature of empathy among nurses allows the perceived needs of patients to be understood. As a result, empathy is still taught in nursing school; undergraduate nursing students are taught

basic communication skills as well as the significance of developing an empathic relationship with patients (Ozcan et al., 2010).

Most studies that looked at nursing students' empathy in other nations, such as those conducted in Australia (B. Williams, Brown, et al., 2014), the United States (Fields et al., 2011), and the United Kingdom (Wilson et al., 2012) found that they had a high level of empathy. The Ouzouni and Nakakis (2012) study in Greece found moderate levels of empathy. The results of studies on whether empathy increases or diminishes as students advance through a programme were inconsistent, according to the literature.

1.2 Problem Statement

Empathy is crucial and a key element to a better communication in healthcare (Mercer and Reynolds, 2002). Empathy has a variety of positive effects on the nursing profession, healthcare organisations, and societies. It can aid in the achievement of organisational goals, the promotion of public health, and the prevention of loneliness and job burnout. It also boosts life and job satisfaction, promotes occupational health, and broadens communication and inter-professional abilities, and enriches professional experiences. It can also improve the quality of patient care and nursing's public image. Lack of empathy among nurses, on the other hand, has a detrimental impact on teamwork, nurse occupational health, patient health, and organisational goal achievement (Montazeri et al., 2020).

Despite growing acknowledgment of the influence of empathy on patient outcomes, there is solid evidence that today's healthcare is plagued by a widespread lack of empathy (Lown et al., 2011). As a result, this might take the form of apathy, indifference, callousness, harshness, and dehumanisation, and can put patients at danger

of injury (West et al., 2006). According to J. Williams and Stickley (2010), patients still perceive the lack of empathy in the nurse-patient relationship. Empathy, on the other hand, is something that can be learned (Cunico et al., 2012).

According to certain studies, nursing students' empathy levels can drop when enrolled in an undergraduate programme (Ward et al., 2012). Others believe that nursing students are more empathic than students from other disciplines, which could reduce the teaching effect (Gallagher et al., 2017). A study by McKenna et al. (2012) found that undergraduate nursing students that enrolled in Bachelor of Nursing at one campus of an Australian university exhibited a good level of empathy. Besides that, a study of empathy level among nursing students in Tehran and Jordan also shows a good empathy level (Ashghali Farahani et al., 2016). While Everson et al. (2015) reported that the empathy scores of n second-year nursing students is at averaged.

There are few similar studies that have been conducted among students in Malaysia such as among medical students in UPNM (Haque et al., 2018), in Melaka-Mannipal Medical College Malaysia (Diong Chi Teng et al., 2020), in JC School of Medicine and Health Sciences, Sunway, Malaysia (B. Williams, Sadasivan, et al., 2014), among undergraduate doctor of veterinary medicine students in Universiti Putra Malaysia (Azahar et al., 2014), among pharmacy students in Malaysian University in Selangor (Yazrin Ali Nasiruddin et al., n.d.), in IMU (Shahzad Hasan et al., 2013) as well as among dental students in Malaysia (Babar et al., 2013).

However, there is still no published studies regarding empathy level that have been conducted among nursing students in Malaysia. This highlights the need to investigate empathy among Malaysian nursing students, whose behaviours and beliefs may differ from other courses or programmes and nursing students in other countries

where research has been conducted. Thus, the purpose of this research study is to assess the empathy level and the association between the selected demographic data (age, gender, programme of study and year of study) with the level of empathy among nursing students of School of Health Sciences, Universiti Sains Malaysia.

1.3 Research Question

1. What is the level of empathy among nursing students in School of Health Sciences, Universiti Sains Malaysia?
2. Is there any association between selected demographic data (age, gender, programme of study and year of study) with the level of empathy among nursing students of School of Health Sciences, Universiti Sains Malaysia?

1.4 Research Objective

1.4.1 General Objective

To determine the level of empathy among nursing students in School of Health Sciences, Universiti Sains Malaysia.

1.4.2 Specific Objectives

1. To determine the empathy level among nursing students of School of Health Sciences in Universiti Sains Malaysia.
2. To determine the association between selected demographic data (age, gender, programme of study and year of study) with the level of empathy among nursing students in School of Health Sciences, Universiti Sains Malaysia.

1.5 Hypothesis

H_O: There is no significant association between selected demographic data (age, gender, programme of study and year of study) and the level of empathy among nursing students in School of Health Sciences, Universiti Sains Malaysia.

H_A: There is a significant association between selected demographic data (age, gender, programme of study and year of study) and the level of empathy among nursing students in School of Health Sciences, Universiti Sains Malaysia.

1.6 Conceptual and Operational Definitions

Table 1.1: Conceptual and Operational Definitions

Self-reported	According to APA Dictionary of Psychology (2021), self-reported is a statement or series of answers to questions that an individual provides about his or her state, feelings, thoughts, beliefs, past behaviours, and so forth. Self-report methods rely on the participant's honesty and self-awareness and are particularly useful for assessing actions or attributes that are difficult to witness first-hand. In this study, Toronto Empathy Questionnaire was used. The respondents was answer to questions based on their honesty and self-awareness through the TEQ instrument.

Table 1.1: continued

Empathy	Empathy is the ability to share someone else's feelings or experiences by imagining what it would be like to be in that person's situation (Cambridge English Dictionary, n.d.). In this study, the nurses' level of empathy was measured by using self-administered questionnaire (16 items) originally by Spreng et al., 2009, to determine the empathy level, higher mean indicates high level of empathy.
Student Nurses	A student in a program leading to certification in a form of nursing; usually applied to students in an RN or practical nurse program (Medical Dictionary, n.d.). In this study, it referred to Degree nursing students (Year 1, 2, 3 and 4) and Diploma nursing students (Year 1, 2 and 3)

1.7 Significance of The Study

Empathy is crucial and a key element to a better communication in healthcare (Mercer and Reynolds, 2002). Empathy is also a prerequisite for providing quality nursing care. In clinical and educational settings, an empathetic interaction between the nurse and the patient leads to positive treatment outcomes and moral sensitivity among students

(Ashghali Farahani et al., 2016). In order to achieve this, empathy level among them is essential to be assessed. Thus, this study is significant for nursing students as well as for lecturers or clinical instructor in teaching and learning process.

Aside from that, this study is important for nursing schools in School of Health Sciences and can be referred to or evaluated in advance by other nursing schools or health facilities. These findings are relevant to nursing education, research, administration, and nursing practice area. These findings also will be used as a baseline for future research in more detailed studies.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This literature review is to summarize research that has been on the subject. The aim is to achieve the understanding regarding the level of empathy among nursing students in School of Health Sciences, Universiti Sains Malaysia.

2.2 Concept of Empathy

Aestheticians coined the term "empathy" in the mid-nineteenth century. They adopted the German term "Einfühlung" to refer to the emotional "knowing" of a work of art from inside, because of experiencing an emotional resonance with the work of art. By the late nineteenth century, psychologist Theodore Lipps had broadened this idea to mean "feeling one's way into another's experience" by postulating that inner mimicry of others' acts was crucial for generating empathy. Martin Buber, a philosopher, infused the concept of empathy with more nuance by referring to empathic relationships as "I and Thou" against unemphatic disdain as "I and It." (Riess, 2017).

According to Mann & Barnett (2013), empathy is defined as “a cognitive and emotional understanding of another’s experience, resulting in an emotional response that is congruent with a view that others are worthy of compassion and respect and have intrinsic worth”. Emotional, cognitive, and behavioural components make up the concept of empathy (Montazeri et al., 2020). It is one of the major characteristics of interpersonal actions that makes it easier to develop successful communication in social situations. Empathy among group members is required for social life and group activities. Empathy

is also critical to the success of enterprises, since it has a considerable impact on humanistic behaviours, moral decision, worker performance and customer happiness (Montazeri et al., 2020).

2.3 Components of Empathy

2.3.1 Affective Empathy

The affective dimension of empathy is well-known. Affective empathy is also known as emotional empathy. It is the ability to feel what other people are feeling. Most humans possess an innate talent for emotional empathy. Additionally, this form of empathy must be balanced with self-regulation to assist control high levels of emotional arousal, which may result in blurred boundaries and personal pain (Decety et al., 2012).

The consensus among philosophers tends to be that only what is indicated above under the heading 'affective empathy' is affective empathy proper. Social psychologists, by contrast, generally talk of what philosophers' term sympathy, when they talk of empathy or, more accurately, empathic concern. To comprehend affective empathy, one needs to understand how it is connected to, yet different from, these other affective states. The research on empathic affect and empathy-related emotions has been dominated by a focus on the feelings of those in need: pain, anguish, melancholy, and so on. It has been considered that empathy with individuals suffering plays a key role in moral development and behaviour, and in social adjustment (Maibom, 2017).

2.3.2 Cognitive Empathy

Cognitive or thinking empathy is a means of regulating the amount of perceptual information that enters your own conscious sentiments. Before cognitive empathy may be experienced, numerous components of psychological development and behavioural

competence are required. Cognitive empathy requires the capacity to recognise on a fundamental level that another person has ideas and emotions distinct from your own (Decety et al., 2012).

2.3.3 Empathy Concern

The third dimension of empathy is empathic concern. It is the internal motive that prompts individuals to react and demonstrate their desire to care for the wellbeing of another person. The primary advantage of cognitive and affective empathy is that they arouse empathy, which may inspire action and compassion. Empathic capacity is not a fixed condition of being. It varies significantly, and our empathetic worry is an excellent indicator of when our empathic abilities have gotten muted (Decety et al., 2012).

2.4 Empathy and Nursing Practice

In health care, empathy is a critical cognitive attribute because it entails an understanding of the patient's experiences, concerns, and perspectives, thereby establishing the foundation for prosocial and altruistic behaviours such as social skills, sympathy, flexibility, tolerance, emotional intelligence, moral judgement, sense of humour, conscientiousness, and kindness (Hojat, 2016). The nursing profession has been impacted in recent years by breakthroughs in scientific knowledge and technology. Nonetheless, the profession's essence has always been and will remain a collaborative connection with the individual receiving care. An empathic approach is critical for the establishment of the therapeutic relationship between nurse and patient, and of all the characteristics that a nurse should possess, empathy is the most crucial (Doyle et al., 2014). The nurse-patient relationship's purpose is to guarantee that the patient's needs are identified, and that essential therapies and care are supplied. To recognise these needs,

nurses must have a thorough awareness of their patients' thoughts, beliefs, and circumstances. All these things necessitate a high level of empathy (Ferri et al., 2017).

A strong capacity for empathy in nurses has been associated with improved patient well-being and satisfaction, increased patient compliance, and a reduction in errors and problems, not to mention improved health outcomes (Petrucci et al., 2016). It is possible that an empathic approach will result in a shorter duration of treatment or a lower demand on resources (William B. et al., 2014). According to Doyle et al. (2014), an examination of cases brought before the New South Wales (Australia) nurses' disciplinary tribunal indicates that most complaints against nurses in this jurisdiction stem from callousness or a lack of empathy. Additionally, empathy has been linked to decreased burnout among nurses and nursing students and increased professional satisfaction (Ferri P. et al., 2015).

Empathy is generally understood as the capability to accurately perceive and understand another individual's state and emotions. Empathy is necessary to create interpersonal relations. In order to fulfil nursing curriculum prepares the nursing student to carry out competently in clinical setting, empathy among nursing students is essential for effective nurse-patient relationship.

2.5 Nurse-patient Communication

Health outcomes have been improved using a variety of theoretical and conceptual methods, including patient-centered communication (Treiman et al., 2018). The provision of high-quality health care relies heavily on effective communication with the patient (Treiman et al., 2018). A study found that high-quality patient-centered communication can help patients build their relationship with nurses, manage their emotions, absorb

crucial information about their disease, deal with ambiguity, and engage more completely in decisions involving their health (Treiman et al., 2018).

Nurse–patient communication is critical for enhancing not just the patient-nurse connection, but also the patient's view of the treatment process and outcome. Additionally, strong communication skills are critical for health care providers' practise and their capacity to comprehend their patients' clinical symptoms, psychological and emotional requirements. Patient-centered communication supports the development of therapeutic connections, enabling health care providers to communicate with patients about their services in an informed, sensitive, and collaborative manner (Treiman et al., 2018).

2.6 Nurse-patient Relationship

The nurse-patient relationship's quality influences how patients perceive and benefit from treatment and care. Nurse-patient relationships have been identified as a critical component of successful treatments in research (Molin et al., 2016). Being in a trusting patient–nurse relationship is crucial for excellent patient outcomes (Dinç & Gastmans, 2012). Without trust, it is impossible to meet patients' requirements effectively, to assure their satisfaction with nursing care (Dinc & Gastmans, 2013), and to build a long-term healthy society.

Trust emerges as a central feature of the nurse-patient relationship, and findings indicate that trust is intimately connected with open communication, personal sharing, and intimacy (Strandås & Bondas, 2018). To establish and maintain a trusting nurse–patient relationship, nurses must be dependable, knowledgeable, experienced, and motivated by a genuine desire to help patients. Patients, on the other hand, should believe

and anticipate that the nurses are well-intentioned (Dinç, & Gastmans, 2012). As a result, through education and dedication, nurses' professional and personal traits will foster a trusting relationship with patients. Personal traits include loyalty, sincerity, love, compassion, empathy, honesty, dependability, patience, listening, cultural understanding and sensitivity, respect, tenderness, and consistency in the nurses' care relationships with patients (Belcher & Jones, 2014).

2.7 Empathy Level Among Nursing Students

A few studies that have been conducted among nursing students in other country showed an overall good empathy level such as in Italy (Cunico et al., 2012 and Ferri et al., 2017), Australia (McKenna et al. 2012), Tehran (Ashghali Farahani et al., 2016), England (Sheehan et al., 2016) and Jordan (Altwalbeh et al., 2019). Previous study conducted by B. Williams and colleagues in 2014 has been reported that level of empathy increases as number of age increases. Other than that, it has been found that the female nursing students recorded higher level of empathy compared to male nursing students according to some previous studies conducted by Cunico et al., (2012), Ozcan et al., (2012), Ferri et al., (2017), Bas-Sarmiento et al., (2017) and Hajibabaee et al., (2018).

Besides that, a study that has been conducted by McKenna et al., (2012), reported that there were no statistical differences between year of study with the empathy level among nursing students, while a study conducted by Hajibabaee et al., (2018) and Altwalbeh et al., (2019), found that empathy scores increased with the number of years of study in university. However, Ward et al., (2012), Ferri et al., (2017), found it contrary. All of the previous studies mentioned above use different type of instrument to determine the level of empathy among nursing students.

2.8 Conceptual Framework of the Study

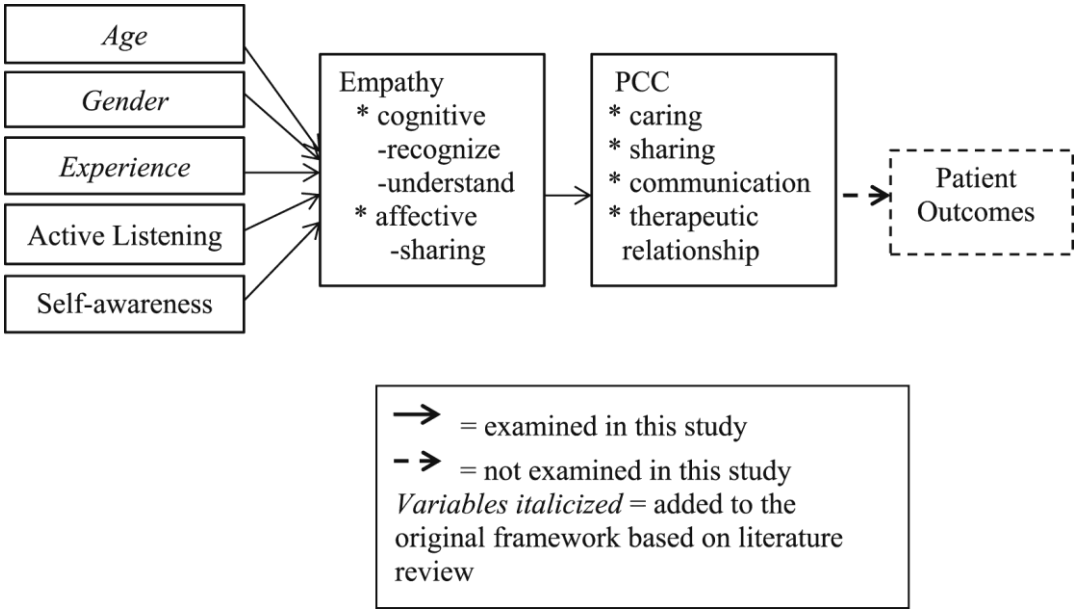

Figure 1: Theoretical Framework: Modified Model of Rogers' Patient-Centered Theory adapted from Brandy Haley, Seongkum Heo et al. (2017)

Rogers' Patient-Centered theory (1959), alternatively referred to as the client-centered or person-centered approach, proposed several modifiable factors affecting patient-centered care (PCC) (Figure 2.1). Rogers proposed that empathy influences PCC and that active listening and self-awareness influence empathy (Rogers, 2007). Rogers defined empathy as the capacity to recognise, comprehend, and share the experience of another person (Rogers, 2007). Rogers asserts that empathy possesses cognitive and affective characteristics. The theory's suggested relationship between empathy and PCC has been supported in several studies (Jones & Huggins, 2014), even though the PCC instruments used did not capture all four characteristics of PCC.

Rogers (2007) proposed that active listening and self-awareness are modifiable dimensions of empathy. Active listening was defined as the internal process of determining whether the words spoken by another person provided insight into one's own

emotions and feelings (Arnold, 2014), which may aid in the development of empathy. Rogers believed that another modifiable factor affecting empathy was self-awareness. He defined self-awareness as the capacity to comprehend oneself to express one's attitudes and beliefs toward other people (Rogers, 2007). Additionally, self-awareness may foster the capacity for self-evaluation of one's morals and the ability to be non-judgmental, which may aid in the development of empathy (Rogers, 1975). Self-awareness aided nursing students in developing empathy (Waite & McKinney, 2016). Empathy may improve because of developing active listening skills and self-awareness. The increased empathy may then assist the nurse in focusing on providing care that is specific to the patient's needs, which is PCC (Rogers, 2007). Thus, these relationships imply that empathy acts as a mediator between active listening and self-awareness and PCC. Age, gender, and experience were added to Rogers' theory because some literature suggests that they are factors associated with empathy (Haley et al., 2017).

Using this Modified Model of Rogers' Patient-Centered Theory, this study explores modifying factors which are sociodemographic factors that include age, gender, programme of study and year of study. This study will be conducted to determine the association between selected demographic data (age, gender, programme of study and year of study) with the level of empathy among nursing students of School of Health Sciences in Universiti Sains Malaysia.

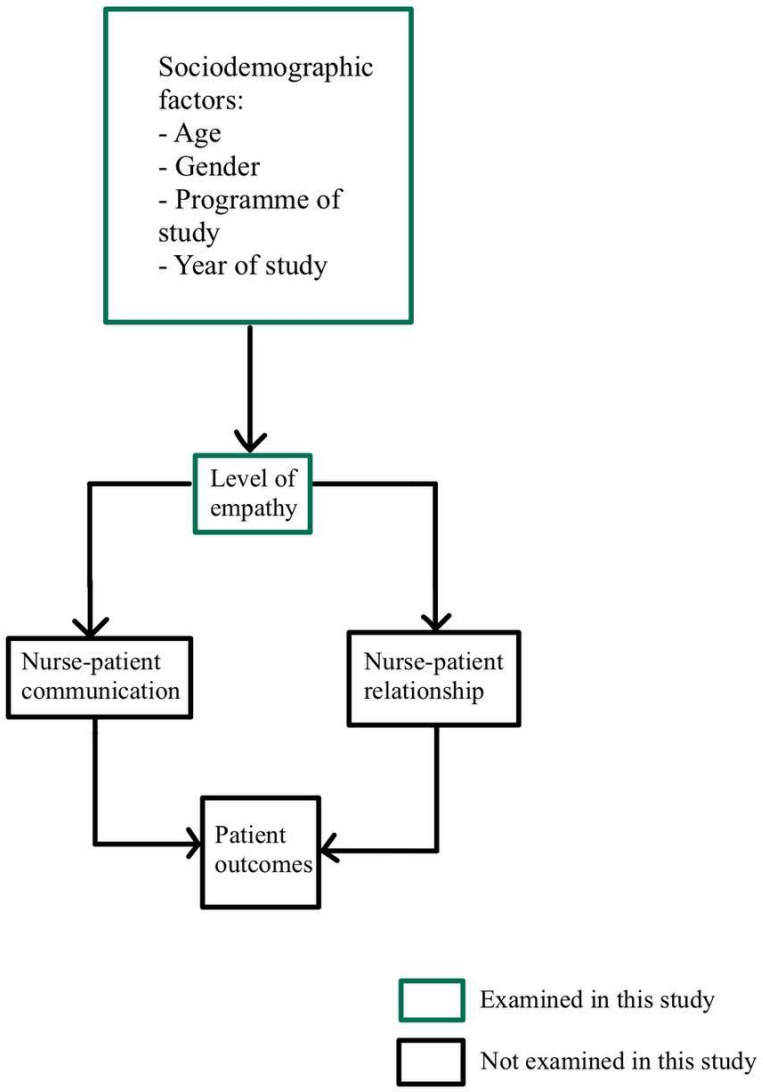

Figure 2: Conceptual framework of the study for empathy level among nursing students

CHAPTER 3

RESEARCH METHOLODOGY

3.1 Introduction

In this chapter, all the information regarding the study in terms of research design, the population and setting of the study, the sampling method, variables, instrumentation, ethical consideration, data collection plan including data analysis plan were discussed.

3.2 Research Design

This study applied descriptive study using quantitative approach to assess the level of empathy among nursing students of School of Health Sciences, Universiti Science Malaysia through a cross sectional survey. The data collected from the entire population and basic statistics such as frequency, percentage, mean, standard deviation and distribution score were reported. Cross-sectional studies were characterized by the collection of relevant data at a given point in time. Therefore, there was no time dimension involved in cross-sectional studies, as all these data were collected and mostly referred to the time at or around the time of the data collection (Kesmodel, 2018).

3.3 Study Setting and Population

There are three different school in USM Health Campus which are School of Health Sciences, School of Medical Sciences and School of Dental Sciences. However, this study only included nursing students from School of Health sciences which has a total of 306 students of diploma and degree.

3.4 Sampling Plan

The sample obtained by following the inclusion and exclusion criteria as below:

3.4.1 Sample Criteria

Table 3.1: Sample Criteria

Inclusion Criteria	Exclusion Criteria
Nursing students from Degree and Diploma at Health Campus, USM	Advance Diploma students that currently enrolled under nursing programme.
Age 18 years old and above	

3.4,.2 Sampling Size Estimation

Sample size for this study is calculated by using Raosoft Sample Size Calculator. The margin error, confidence level and the response distribution are set to 5%, 95% and 50% respectively. Total number of nursing students (Diploma and Degree) in School of Health Sciences in USM is 302 students. When calculated, the recommended sample size is 170.

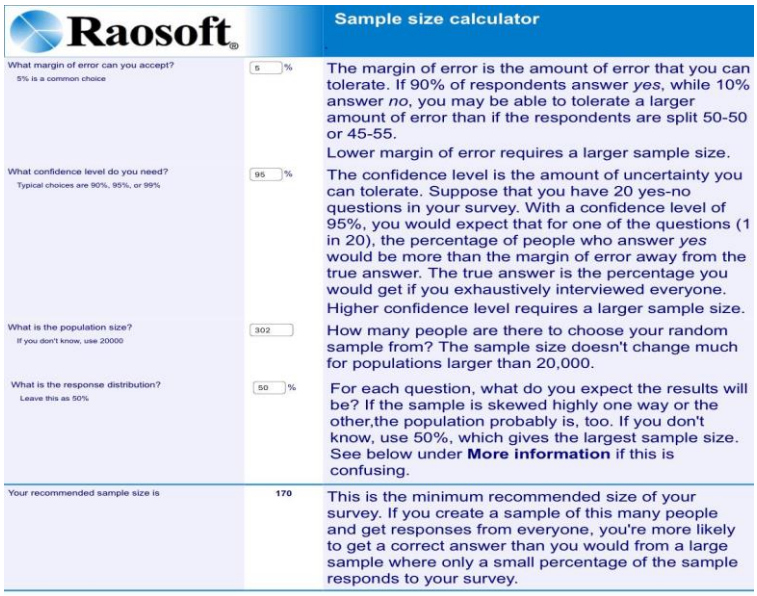

Figure 3: Sample size calculation using Raosoft Calculator

After considering 10% drop out,

$$170 \times 10\% = 17$$

$$n = 170 + 17$$

$$n = 187$$

Therefore, total sample size needed was 187 samples.

3.4.3 Sampling Method

This study applied convenience sampling to recruit the nursing students of School of Health Sciences, USM. Convenience sampling is a method of collecting samples by taking samples that are conveniently located around a location or Internet service (Edgar & Manz, 2017). The name lists of nursing students of School of Health Sciences according to diploma and degree programme were obtained. Table 3.2 below shows the number of nursing students participated in this study from diploma and degree programme according to year of study.

Table 3.2: Total number of nursing students participated

Programme	Year of Study	Number of Nursing Students Selected
Diploma	1	28
	2	28
	3	20
Degree	1	34
	2	31
	3	22
	4	24
Total number of nursing students participated		**187**

3.5 Instrumentation

In this study, the data were collected through a set of self-administered questionnaires which were the questions adapted from Spreng et al. (2009).

3.5.1 Instrument

The questionnaire is divided into two parts explained as follows:

Part I: Socio-demographic data

Part I of the questionnaire consists of socio-demographics data which are age, gender, programme of study and year of study.

Part II: Questions on Empathy

Part II contains 16 questions that encompass a wide range of attributes associated with the theoretical facets of empathy.

3.5.2 Translation of Instrument

The original version of the questionnaire in this study is in English version. In USM, nursing education is carried out using the English language. Therefore, no translation will be needed. The instrument is administered in English language as USM nursing students are expected to be able to understand and complete the questionnaire.

3.5.3 Validity and Reliability

To gain the content validity of the instrument used in this study, the questionnaire that being used was sent to three panels to gain content validation before the distribution to participants of the study was made. The panels consist of lecturers from the Bachelor of Nursing, School of Health Sciences USM, who facilitated and provided permission for the study to be conducted. To make sure the instrument is reliable; a pilot study had been done to 19 nursing students from other Nursing college which is 10% from sample

population. Cronbach's alpha was used to measure the reliability in this research and had been computed using Statistical Package for Social Sciences (SPSS) software version 26.0. A Cronbach's alpha coefficient of TEQ is 0.76. Respondents from pilot study were asked for recommendation and suggestions if any to improve and modify the instrument so that the overall reliability of the study can be improved.

3.6 Variables

3.6.1 Variables Measurement

Table 3.3: Variables measurement

Dependent variable	Level of empathy among nursing students of School of Health Sciences, Universiti Sains Malaysia
Independent variable	Sociodemographic data included (age, gender, programme of study and year of study)

3.6.2 Variables Scoring

The items in Toronto Empathy Questionnaire (TEQ) were rated using a 5-point Likert scale ranging from 0= Never, 1= Rarely, 2= Sometimes, 3= Often and 4= Always for positively worded Items 1, 3, 5, 6, 8, 9, 13, 16. For negatively worded Items 2, 4, 7, 10, 11, 12, 14, 15 are reverse scored. Scores are summed to derive the total number empathy score of 64. Higher score indicates higher empathy where score below 45 indicates below average of empathy level (Spreng et al., 2009).

3.7 Data Collection Method

3.7.1 Procedure of data collection

Data of this study were collected after getting ethical approval from the Human Research Ethics Committee (HREC) of USM and permission from Dean of School of Health Sciences. A list of nursing students' name (Degree and Diploma) from the academic administrator of School of Health Sciences, USM had been obtained. Then, class representatives of each year had been approached to get contact number of students. After that, students were contacted through Whatsapp application. Aim of study and procedure of data collection had been explained to participants. Students that fulfil the inclusion criteria and agree to participate had been given the link to the questionnaire and the consent form had been fulfilled before answering the questionnaire. The questionnaire was answered with honesty by participant itself. Link was opened for 24 hours, and 10 to 15 minutes time was given for participants to answer. The questionnaire then was collected after participants finish answering and the answers were checked for their completeness. The procedure of the data collection followed the flow chart as provided below.

3.7.2 Flowchart of Data Collection

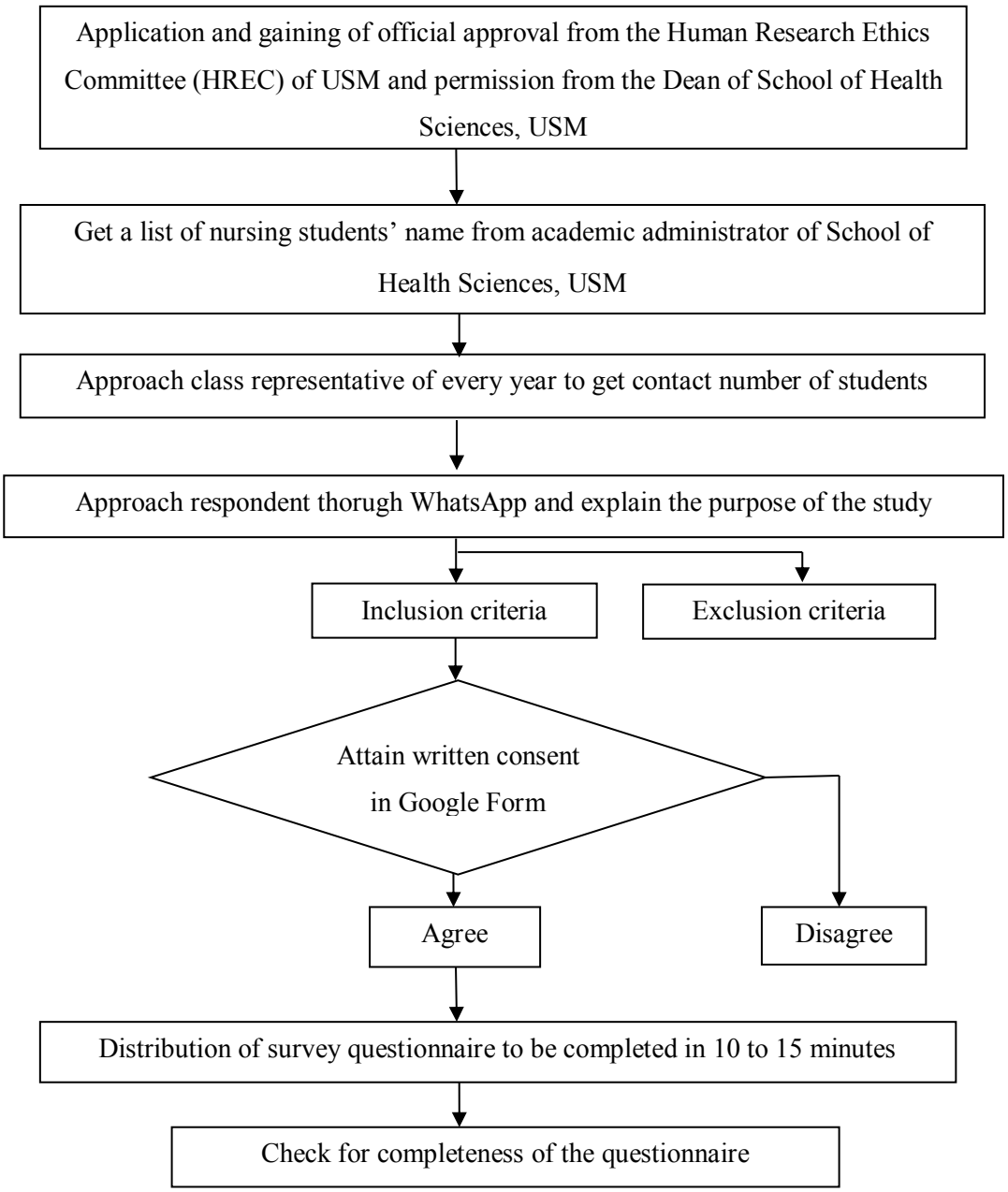

Figure 4: Study flowchart of data collection process

3.8 Ethical Consideration

Ethical approval from the Human Research Ethical Committee, Universiti Sains Malaysia, were obtained. The permission for collecting data of nursing students already gained from the Dean of the School of Health Sciences. Permission to use adapted questionnaire had been obtained from the original author by Spreng et al. (2009). Purpose of the study had been explained to respondents. Furthermore, their rights to discontinue from the study were honestly explained to them.

Respondents were informed that all the information gained from the questionnaire were keep confidential, anonymous, and used for academic and research purposes only. It will not be publicly disclosed unless it was required by law. Only members of the research team, the Ethics Board of this study and the regulatory authorities have accessed to such information for the purpose of verifying clinical study procedures or data. All personal information was stored on computer and processed with it. This information was also be presented as group data and were not identify respondents individually.

Involvement in this study was voluntary and they were able to give their own consent. They also had the full authority to drop out from the study at any time, without penalty or loss of benefit. In addition, this study also did not cause any physical or biological harm or threats to the participants involved. This study had no conflict of interest involved and no payment or money involved. Lastly, the respondents had been acknowledged for their participation in the study through verbalization of thank after the respondents completed the questionnaire.