

KNOWLEDGE AND ATTITUDE TOWARDS
DEMENTIA AMONG NURSING STUDENTS AT
UNIVERSITI SAINS MALAYSIA

SHARA SYASYA ATHIRAH BINTI SHARIF

SCHOOL OF HEALTH SCIENCES
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KNOWLEDGE AND ATTITUDE TOWARDS DEMENTIA AMONG NURSING
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SHARA SYASYA ATHIRAH BINTI SHARIF

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LIST OF SYMBOLS AND ABBREVIATIONS

PWD	People With Dementia
DKAS	Dementia Knowledge Assessment Scale
DAS	Dementia Attitude Scale

**Pengetahuan dan Sikap Terhadap Demensia Dalam Kalangan Pelajar
Kejururawatan di Univeristi Sains Malaysia**

ABSTRAK

Pelajar kejururawatan bersedia untuk menyediakan penjagaan untuk orang yang memerlukan bantuan, terutamanya orang yang mengalami demensia. Pelajar kejururawatan cenderung mempunyai tahap pengetahuan dan sikap yang lebih rendah terhadap demensia berbanding jururawat profesional. Sementara itu, bukti bahawa masalah ini pernah diterokai dalam konteks Universiti Sains Malaysia hanyalah sedikit. Ini penting untuk mencari elemen yang berkaitan dengan pengetahuan dan sikap terhadap demensia dalam kalangan pelajar yang boleh diperbaiki di masa hadapan. Kajian ini bertujuan untuk mengenal pasti pengetahuan dan sikap terhadap demensia dalam kalangan pelajar kejururawatan di Universiti Sains Malaysia. Kajian ini merupakan kajian kuantitatif dengan desain cross-sectional. Terdapat 140 pelajar kejururawatan di Universiti Sains Malaysia yang dipilih menggunakan kaedah persampelan berstrata. Data dikumpul menggunakan Dementia Knowledge Assessment Scale (DKAS) dan Dementia Attitude Scale (DAS). Pearson Chi-square, One-way Anova, dan Mann Whitney Unpaired digunakan untuk analisis data mengikut jenis dan pengedaran data. Skor purata bagi pengetahuan mengenai demensia ialah 18.77 (SD = 5.37), dan purata bagi sikap terhadap demensia ialah 91.68 (SD = 17.51). Terdapat hubungan antara skor pengetahuan tentang demensia dan kedudukan kelas ($F= 6.194$, $p < 0.001$). Sementara itu, skor sikap terhadap demensia mempunyai hubungan dengan kedudukan kelas ($F= 3.976$, $p = 0.009$) serta sejarah keluarga demensia ($F= 4.883$, $p = 0.029$). Oleh itu, kajian lanjut untuk mengkaji kandungan pendidikan berkaitan dengan dewasa dengan demensia membantu untuk menunjukkan sama ada ia mencukupi untuk pelajar. Kajian lanjut tentang pengetahuan pelajar sebelum dan selepas pembelajaran

tentang demensia untuk menganalisis perbezaan juga diperlukan. Ini mungkin menunjukkan kepentingan pendidikan demensia terhadap pengetahuan dan sikap pelajar terhadap demensia. Di samping itu, penyelidikan lanjut boleh membandingkan universiti dengan kurikulum yang berdiri sendiri dan kurikulum bersepadu untuk mata pelajaran gerontologi. Ini mungkin menunjukkan perbezaan pengetahuan dan sikap pelajar kejururawatan antara kedua-dua kurikulum ini

KNOWLEDGE AND ATTITUDE TOWARDS DEMENTIA AMONG NURSING STUDENTS AT UNIVERSITI SAINS MALAYSIA

ABSTRACT

Increasing number of people with dementia that have co-morbid medical disease, cognitive decline, and behavioral issues quite challenging and requires specific skills, attitudes, and knowledge regarding dementia. Nursing students are prepared to provide care for vulnerable persons, especially people with dementia. Nursing students tend to have a lower level of knowledge regarding dementia and attitude towards dementia than professional nurses. While there is little evidence that this problem has been explored in the context of Universiti Sains Malaysia nursing students. It will be important to find an element connected to knowledge and attitude among students that may be improved in the future. Thus, this study aimed to identify the knowledge and attitude towards dementia among nursing students in Universiti Sains Malaysia. This study was a quantitative study with a cross-sectional design. There were 140 nursing students at Universiti Sains Malaysia recruited using stratified sampling method. Data were collected using the Dementia Knowledge Assessment Scale (DKAS) and Dementia Attitude Scale (DAS). Pearson Chi-square, One-way Anova, and Mann Whitney Unpaired were used for data analysis according to the type and distribution of the data. The mean score for knowledge on dementia was 18.77 (SD = 5.37), and the mean for attitude on dementia was 91.68 (SD = 17.51). The variables that were statistically significant correlated to knowledge of dementia was year of study only ($F= 6.194, p < 0.001$). Meanwhile, the variables that were statistically significant correlated to attitude towards dementia were year of study ($F= 3.976, p = 0.009$) and family history of dementia ($F= 4.883, p = 0.029$). Hence, further studies to investigate the educational content related to the aging adult with dementia helps to indicate if it is sufficient for the students. Further study on students' knowledge

before and after learning on dementia to analyze the difference are also needed. This may show the importance of dementia education on students' knowledge and attitude towards dementia. In addition, further research may compare universities with stand-alone curriculum and integrated curriculum for gerontology subjects. This may show the difference of nursing students' knowledge and attitude among these two curricula.

CHAPTER 1: INTRODUCTION

1.1 Background of the study

Based on World Health Organization (WHO; 2021), the number of people aged 60 years or over is one in every six individuals which will increase from 1 billion in 2020 to 1.4 billion in 2030. In 2017, hospitalized patients over the age of 65 years accounted for more than 70% of all the patients that were hospitalized (Pinkert, Faul, Saxer, Burgstaller, Kamleitner & Mayer, 2017). Hospitalized patients are larger in number for patients aged 65 and above than any other age group (Gallo, 2019).

Dementia is a condition in which an individual's cognitive function deteriorates beyond what would be expected from the normal effects of biological aging (WHO, 2021). Based on the Centers for Disease Control and Prevention (CDC; 2019), dementia is a general term for impaired ability to remember, think or make decisions that interfere with daily lives. The common symptoms shown by dementia patients are decreasing the ability to do the daily activity, changing in behavior, declining cognitive function, and disorientation (Lien Foundation, 2019).

The current estimated number of people with dementia around the world is over 55 million people. According to Malaysia's latest National Health and Morbidity Survey (Institute for Public Health, 2018), the prevalence of dementia among people aged 60 years and above was 8.5 percent. Even though dementia cannot be cured, but they also can live well, delay the disease progression and improve quality of life if they received the early diagnosis, effective treatment, and high quality of care (Michalowsky et al., 2019). Providing care to dementia patients would be challenging because of co-morbid medical disease, cognitive decline, and behavioral issues (Poreddi, Carpenter, Gandhi, Chandra & BadaMath, 2015).

Hence, providing proper care for people with dementia is quite challenging and requires specific skills, attitudes, and knowledge regarding dementia (Kimzey, 2014). Registered nurses, doctors, general practitioners, neuropsychologists, and geriatricians, for example, must collaborate to offer their specific expertise to the diagnosis, treatment, care, and palliation of dementia patients (Wang, Xiao & Huang, 2020).

Nursing care plays an important role for dementia patients both at the hospital and at home (Poreddi et al., 2015). However, nurses that work in healthcare facilities may have limited education and knowledge on gerontology (Brabham, 2018). Lack of knowledge and negative attitude towards people with dementia may cause serious problems in society in the future (Efiong, 2015). Dementia is not only burdensome to the patient, but also their caregivers and family members (Musoke, Olum, Kembabazi, Nantaayi, Bongomin, & Kaddumukasa, 2021; Kim & Han, 2019).

Nursing students' experience of caring for people with dementia may impact their knowledge and attitude as mentioned by a few studies (Sunaryo, Saifullah & Mulyani, 2020; Segovia, 2019; Scerri & Scerri, 2012). As mentioned by Kimzey et al. (2016), the students that have no experience in caring for people with dementia described themselves as lacking the confidence to provide care, handle dementia patients, and fear. Hence, it may impact the students' attitude towards caring for the dementia patient.

In addition, the findings from Chang and Hsu (2020) study showed that the participants' experience in caring for people with dementia was found significant with knowledge of dementia. The researcher mentioned that health literacy should be applied as training and education on dementia in public such as films, videos in social media, and popular songs for the public. Hence, the knowledge regarding dementia would be increased not only in nursing students but also in the public. A few studies also mentioned the association (Sunaryo et al., 2020; Wang et al., 2020; Scerri & Scerri, 2012; Liu et al,

2019; Segovia, 2019; Shin et al., 2015). This shows that there is an association between knowledge and attitude with experience in caring for people with dementia.

1.2 Problem Statement

There is a rapidly increasing elderly population around the world (Efiong, 2015; Shin, Seo, & Kim, 2015; Scerri & Scerri, 2012). If life expectancies increase, the need for care and support for the elderly will also be greater (Ugargol, Hutter & Bailey, 2016). Hence, the public, family members, and health care professionals play crucial roles in providing critically needed care for people with dementia. As the number of people with dementia cases increases, the chances for the nursing students to directly interact and care for them also increases (Shin et al., 2015; Poreddi et al., 2015; Scerri & Scerri, 2012; Kwok, Lam, Yip, & Ho, 2011). Hence, nursing students should be prepared to improve their nursing care quality and improve the quality of life of dementia patients (Shin et al., 2015).

Nursing students tend to have a lower level of knowledge regarding dementia and attitude towards dementia (Scerri & Scerri, 2012) than professional nurses (Sunaryo, 2020). This is because there is a lack of dementia education in undergraduate curricula that has been an international issue (Wang et al., 2020). Dementia education is frequently offered as an add-on, or it is delivered when necessary, not a core subject (Wang et al., 2020). Based on Kimzey et al. (2016), the nursing school had limited information on dementia as the content will be presented during Mental Health, Pharmacology and a study module that imbedded in an Aging subject. Another study mentioned that 66.6% of the respondents stated that their university provides elective courses on gerontology subjects, also 54.9% of them reported that the credits for the gerontology subjects were insufficient (Shin et al., 2015). However, they are more likely to provide care for the

patients with dementia during their clinical placement (Poreddi et al, 2015) and once they qualify as professional nurses (Scerri & Scerri, 2013).

Few studies in Beijing, Malta and Hong Kong have found that there is a lack of knowledge and inappropriate attitude among nursing students towards dementia (Wang et al., 2020; Scerri & Scerri, 2013; Kwok et al., 2011). This may be because of lack or low education regarding dementia that exposed to the students and no clinical instructor in training and clinical experience. Based on Segovia (2019), there is a lack of students' experience on provide care to dementia patients in clinical placement. Hence, most of the nursing students who is the respondents of the study request more hands-on experience opportunities with dementia patient to improve their knowledge and attitude towards dementia.

Good knowledge and attitude among caregivers towards dementia are crucial because they may influence their interaction with dementia patients and eventually affect the quality of life and survival rate (Mulyani et.al, 2019; Blaser & Berset, 2017). People that died due to age-related causes estimated 100,000 people in a day (Efiong, 2015). Hence it is important to measure the level of knowledge and attitudes of nursing students as evidence to improve dementia care training in the nursing curriculum (Scerri & Scerri, 2013) and to improve interdisciplinary dementia education (Wang, 2020; Annear, Goldberg, Lo & Robinson, 2016).

As the aging population grows, the issue of caring for the aging adult becomes one of great significance. Nursing students are required to have practical and conceptual knowledge to be a professional nurse. Nurse educators play an important role in providing students with crucial knowledge related to current health trends and concerns. Based on Yaghmour (2021), nursing students almost have no knowledge of the ideal way to caring people with dementia and usually struggle to deal with dementia behavior. Therefore, is

important that students be equipped with knowledge regarding the aging population. These future nurses will become valuable contributions to the field of nursing (Brabham, 2018).

However, Kimzey et al. (2015) stated that lectures alone might not suffice for the nursing students to improve their knowledge and attitude towards dementia. The researchers also mentioned that the factor that may impact their knowledge and attitude is an educational experience which is their experience in caring for people with dementia. In the study, the participants reported that clinical experience would be helpful to obtain knowledge on dementia and decrease negative attitudes or feelings. Hence, the correlation between knowledge and attitude with experience in caring for people with dementia should be assessed.

In Malaysia, there is a study on perception and attitudes towards dementia among university students that were recruited health care students from the School of Pharmacy and School of Medicine in University Malaya that does not include nursing students (Griffiths et al., 2020). In addition, a study on training needs among healthcare professionals managing patients with dementia (Ng & Tan, 2020). Another study on knowledge on Alzheimer's disease among public hospitals and health clinics pharmacists in the state of Selangor, Malaysia by Nuri, Hong, Ming, Joffry, Othman, and Neoh (2017). Thus, there is no specific study done to test the knowledge level and attitude among nursing students in Malaysia, especially in Universiti Sains Malaysia. This study is crucial to assess the knowledge and attitude towards dementia patients among nursing students in Universiti Sains Malaysia because it influences how they interact and treat the patient which affects the quality of life and survival rate (Mulyani et.al, 2019; Blaser & Berset, 2017).

1.3 Research Question

1. What is the level of knowledge and attitudes towards dementia among nursing students in Universiti Sains Malaysia?
2. Is there any correlation between knowledge and attitudes score towards dementia among nursing students in Universiti Sains Malaysia?
3. Is there any association between knowledge and attitude score with experience in caring people with dementia among nursing students at Universiti Sains Malaysia?

1.4 Research Objective

1.4.1 General Objective

To identify the knowledge and attitudes towards dementia among nursing students at Universiti Sains Malaysia

1.4.2 Specific Objective

1. To identify the level of knowledge and attitude towards dementia among nursing students at Universiti Sains Malaysia
2. To identify the correlation between knowledge and attitude score towards dementia among nursing students at Universiti Sains Malaysia
3. To determine the association between knowledge and attitude score with and without experience in caring people with dementia among nursing students at Universiti Sains Malaysia.

1.5 Hypothesis

Hypothesis 1

H_A: There is significant association between knowledge and attitude score among nursing students in Universiti Sains Malaysia.

Ho: There is no significant association between knowledge and attitude score among nursing students in Universiti Sains Malaysia.

Hypothesis 2

HA: There is significant association between knowledge and attitude score with experience in caring people with dementia among nursing students at Universiti Sains Malaysia.

Ho: There is no significant association between knowledge and attitude score with experience in caring people with dementia among nursing students at Universiti Sains Malaysia.

1.6 Significance of The Study

This study concerns nursing students' knowledge and attitude towards dementia. This is because nursing students will provide care to the patient during their clinical placement. The good knowledge and positive attitude of nurses and nursing students to dementia patients may improve their quality of life and their survival rate.

Hence, the findings for this study will contribute greatly to nursing education because managing patients with dementia is common. This is because the total of elderly and dementia patients is increasing every year. This study is also helpful to increase awareness for the nursing students that they will face and provide care to dementia patients. Therefore, it is important to prepare nursing students to provide a high quality of care to the elderly before being professional nurses. Thus, this will help the nursing students from Universiti Sains Malaysia more knowledgeable and have a positive attitude toward dementia patients.

This also helps the nursing education be reevaluated as dementia in gerontology subjects are important and should be a core course for all nursing students. For Universiti

Sains Malaysia itself, gerontology is introduced to the third year for degree and second-year diploma as optional subjects. The result from this study may provide nursing education and nurse educators with evidence-based knowledge to inform curriculum design in geriatric nursing important in nursing students.

For researchers, this will help to provide stronger evidence on knowledge and attitudes of the nursing students toward people with dementia in Universiti Sains Malaysia may bring more ideas in evaluating nursing education in Malaysia, especially in dementia care.

1.7 Conceptual and Operational Definitions

The terms used in this research proposal is referring to the following below:

1) Knowledge

The ability to provide meaning to a variety of sensory inputs, bodily feelings, or hazy impressions (Kimzey, 2014). In this research, the knowledge is related to nursing students' knowledge regarding dementia assessed on the Dementia Knowledge Assessment Scale (DKAS) by Annear, Toyne, Eccleston, McInerney, Elliot, Tranter, Hartley & Robinson (2015).

2) Attitude

3) Attitude is expressed by the health worker's cheerfulness, attentiveness to the patients' problems, and prompt care, whereas negative attitude is expressed by harsh remarks, lack of respect, and facial expression (Efiong, 2015). In this study, attitude is the students' way to think or feel towards dementia and assessed by their score on Dementia Attitude Scale (DAS) by O'Conner & McFadden (2010).

4) Dementia

A regressive brain disease that causes degeneration of cognitive and physical abilities (Helms, 2020). In Malaysia, dementia refers to an elderly that aged 60 years and above that has deterioration in memory, impaired abilities to thinking and comprehension, changes in behavior and ability to perform activity daily living (Institute for Public Health, 2018), which applied to this study.

5) Nursing students

Nursing students are those enrolled in nursing school and working for either a bachelors' degree in nursing, an associate degree in nursing, or a practical nursing certificate (Brabham, 2018). In this study, nursing students refer to the students that registered to study nursing either diploma or degree in Universiti Sains Malaysia.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter will be discussed of existing research about dementia, its prevalence, classification, sign normal aging and early dementia symptoms, diagnosis, management, complication dementia, studies related to nursing student's knowledge on dementia, and studies related to nursing student's attitude towards people with dementia.

2.2 Review of literature

2.2.1 Overview and prevalence of Dementia

Dementia is a chronic degenerative disease that leads to deterioration in memory, impairs thinking and comprehension, changes behavior, and affects the ability of the person with dementia to perform everyday activities (Scerri & Scerri, 2012). Based on Arvanitakis, Shah, & Bennet (2019), dementia definition that has been used for decades is two or more cognitive abilities are lost because of a brain illness or damage.

Dementia may occur at any age. It is a global public health issue (Musoke, 2021; Arvanitakis et al, 2019) that is a primary source of impairment and reliance among the elderly (Musoke, 2021). However, dementia is not an illness, but it is a stage of life where there is a regressive biological process in growth and development that results in decreased abilities for survival and adjustment (Efiong, 2015). In developed nations, more than half of dementia patients are under-diagnosed and under-treated (Wang et al., 2020).

Approximately 47 million dementia people worldwide an expected to increase to 131 million by 2050 (Arvanitakis et al., 2019). Based on Wang et al. (2020), there are more than 50 million dementia patients across the world and expected increase to be over

152 million by 2050. Based on Scerri and Scerri (2012), people with dementia are expected to reach 2% of the population in 2050.

Based on Musoke et al. (2021), the elderly population in Uganda is projected to reach 5,420,000 by 2050. In China, the estimate of dementia patients is 9.5 million in 2016 and expected to increase in 2030 to 16 million (Wang et al., 2020). In the United States (US), the prevalence of dementia people is 15% of the elderly population that is older than 65 years old.

In 2015, the estimated worldwide cost for dementia purposes was \$957.56 million dollars. While based on Rakesh (2017), estimated to cost worldwide \$818 billion for either direct or indirect healthcare. This cost is expected to rise to \$2 trillion by 2030 (Rakesh, 2017; Wang et al., 2020). In China, the estimated cost annually per dementia patient is \$19,144, which exceeds China's average per capita disposable income (Wang et al., 2020).

Although dementia cannot be cured, dementia patients who get the appropriate diagnosis, effective treatment, and high quality of care are able to live well, slow the disease progression, and improve their health-related quality of life (Wang et al., 2020). However, dementia patients are particularly difficult to care for because of the impacts of age and many comorbid medical disorders, which add to cognitive decline and behavioral issues (Poreddi et al., 2015).

2.2.2 Association between nursing students' knowledge and attitude regarding dementia

Research that has been made in Hong Kong among undergraduate and healthcare students discovered a significant low of dementia knowledge, which was shown to be

highly related to the low number of training hours (Kwok et al, 2011).

Based on a study by Shin et al. (2015), a cross-sectional survey has been done in Korea involving 148 nursing students from freshman to seniors in a university. The mean for the students' knowledge examined by Dementia Knowledge Questionnaire was 10.26 out of 12 points, which is equivalent to 86 points over 100 points. This indicates good knowledge among nursing students in Korea. Senior students and those who had experience with dementia education, dementia information, experience caring for dementia patients during clinical practice practicum, and had family members with dementia had considerably better knowledge levels. Students' grade level and clinical placement experience with dementia patients were both factors that might impact their dementia understanding. The findings suggest that the nursing program should be introduced and operate dementia care to increase dementia understanding in undergraduate nursing students.

Attitudes make an individual able to understand, organize and clarify about their environment (Kimzey, 2014). Numerous studies have examined students' attitudes towards dementia. In acute care settings, the nurse workforce lacks knowledge and skills to provide patient-centered care to dementia patients that will lead to negative attitudes (Kimzey, 2014). Nurses' attitudes will impact the quality of life and survival rate for dementia patients (Mulyani et.al, 2019; Blaser & Berset, 2017; Kimzey, 2014).

The first step to change an individual attitude might be education (Kimzey, 2014). Based on Sunaryo et al (2020), nurse education from the curriculum might affect students' attitudes towards others. Research that has been done by Griffiths, Cheong, Saw, and Parveen (2020) shows that awareness workshops improve the students' attitudes towards dementia.

Based on a study by Wang et al. (2020), a cross-sectional survey has been done in China involving 467 nursing students and 526 medical students. For nursing students, this study only accepts a 4-year Bachelor of Nursing Program in the selected universities. The result shows that students' overall knowledge regarding dementia was poor, but the attitudes were generally positive towards dementia. The mean for the students' knowledge examined by the ADKS questionnaire was 19.49 (SD=2.82) out of 30. On the other hand, the student's attitude towards dementia was 29.92 (SD=3.35) out of 40. This study also highlights the urgent need for the implementation of an inter-disciplinary approach to improve dementia education among students and ensure the students have sufficient knowledge and attitude towards dementia.

Based on Musoke et al. (2021), a cross-sectional survey has been done in Uganda involving 1005 participants among undergraduate nursing students in universities in Uganda. Overall, the mean knowledge of the students in Uganda is 65% which is high, and two-thirds of participants have a positive attitude towards dementia. The findings highlight that even the overall university has a positive attitude towards dementia, however, there are significant numbers that still have poor knowledge. Hence, the researcher states that health education helps to improve knowledge. Awareness through media also should be continued to improve knowledge in the general population.

Based on Scerri & Scerri (2012), a study done in Malta involves 280 diploma and degree nursing students using the Alzheimer's Disease Knowledge Scale (ADKS) and Dementia Attitude Scale (DAS). Generally, the students show adequate knowledge and have positive attitudes towards dementia. The mean knowledge score for this study is 19.36 and is equivalent to 64.5% of correct answers. On another hand, the mean score of attitudes for this study is 103.51 indicates positive attitudes towards people with dementia.

Based on the result of this study, positive attitudes among nursing students were affected by positive clinical experiences.

Poreddi et al. (2015) study have been made to examine undergraduate nursing students' knowledge and attitude towards dementia in India. In this study, the students in the third year and fourth year of nursing included since they have theoretical and clinical exposure to dementia. The total respondents were 140 students. The tools used are Alzheimer's disease Knowledge Scale (ADKS) and the Attitude toward Alzheimer's disease and Related Dementia Scale. The findings of the study show that the students have inadequate knowledge regarding dementia especially in symptoms, treatment and management, assessment and diagnosis, caregiving, and course of the disease. In another hand, the students show a positive attitude towards dementia.

2.2.3 Correlation of nursing students' knowledge and attitude towards dementia

A study by Sunaryo et al. (2020) in Indonesia used statistical analysis to study the relationship between students' knowledge and attitudes towards people with dementia using Spearman's rank correlation coefficient. The results show that there was a significant relationship between the student's knowledge score and the student's attitude score ($p = 0.001$), and Spearman's rank correlation coefficient was 0.29.

Another study by Scerri and Scerri (2012), the study between the level of knowledge and the level of attitude in nursing students towards dementia shows a significant relationship with a p -value = 0.018.

Based on Segovia (2019), the result shows that the higher level of preparation by the programmed will lead to more positive attitudes toward dementia patients. Personal relationships are also one of the factors by this study that affect the high knowledge and

attitude among nursing students. Hence, this study mentions that it is important to give students opportunities to interact and be exposed to people with dementia to increase their knowledge and attitude.

A study by Poreddi et al. (2015) findings shows inadequate knowledge in dementia but a positive attitude towards people with dementia. The researcher mentions that the results may be because the nursing students have better exposure to people with dementia in their third year.

2.2.4 Association experience in caring people with dementia with knowledge and attitude

Based on a study by Scerri & Scerri (2012) in Malta, the significance of caring for dementia patients during clinical placement with knowledge is $p = 0.033$, which is significant. In addition, the significance of cared dementia patients during clinical placement with attitude is $p < 0.001$, which is also significant. The findings show that the nursing students have been exposed to dementia patients during their clinical placement in their first year. However, they did not receive any training regarding dementia that leads to a lack of knowledge and attitude during caring for the dementia patient. The researcher also stated that the students will develop their own clinical and theoretical skills in caring for people with dementia from their clinical placement in their first year in the geriatric settings. Hence, the knowledge and attitude will be increased by experience in caring for a dementia patient in the clinical placement.

In another study in Indonesia by Sunaryo et al. (2020), students that have experience in caring for people with dementia significantly the knowledge regarding dementia ($p = 0.047$). However, the experience in caring for people with dementia was

not significant with attitude towards dementia. Another study by Wang et al. (2020) in China reported that experience in caring for geriatric and knowledge regarding dementia was significant, $p = 0.001$. However, experience in caring for geriatric and attitude towards dementia was not significant, $p = 0.390$.

This is different from a study by Shin et al. (2015) in South Korea titled Knowledge about dementia among nursing students. There is no statistically significant difference between the experience in caring for people with dementia and knowledge ($p = 0.56$). However, caring for people with dementia during clinical placement and knowledge on dementia were marginally significant, $p < 0.001$.

Based on Segovia (2019), clinical-based exposure is found to improve students' knowledge and enhance positive attitudes in health professions students. The participants from the study also recommend having more hands-on exposure, dementia course content in one course, having lectures, simulations, and videos regarding dementia care.

A study by Liu, Cheng, An, Gan, Wu, Zhang, Hu, Zeng, and Wu (2019) in China involve 238 students all over the country. It shows a significant correlation between the experience of exposure to dementia and knowledge, $p < 0.001$. In addition, there is also a significant correlation between contact with dementia patients and knowledge with a p-value less than 0.001. This may be described as experience in interacting with dementia patients in this study.

2.2.5 Research instrument

The Dementia Knowledge Assessment Scale (DKAS) by Annear et al. (2017) was used in this study to identify the knowledge and attitudes toward dementia among nursing students in Indonesia. The Cronbach's alpha for each subscale in this tools ranged from

0.65 to 0.76. This indicated that this tool surpassing or approaching the acceptable value of Cronbach's alpha which is more than 0.70 (Annear et al., 2017).

The Dementia Attitude Scale (DAS; O'Connor & McFadden, 2010) was used in this study to review the participant's affective, behavioral and cognitive components of attitude towards people with dementia. The Cronbach's alpha for this tool ranged 0.83 to 0.85, which indicate the validity favorable (O'Connor & McFadden, 2010).

2.3 Theoretical/Conceptual Framework of the Study

The theoretical framework that used in this study is the social cognitive theory (SCT) by Bandura (1977). This theory will be applied to evaluate the nursing students' knowledge and attitude towards dementia patients. The development of this theory started when Miller and Dollard (1941) introduced the observational learning theory that examines the way humans learn through observing others. Then, Bandura (1977) modified the OLT to social learning theory and emphasize the importance of environment and continuous reinforcement in social learning. Bandura (1986) involve behaviorism in the social learning theory and evolved it to social cognitive learning. Based on Bandura (2001), cognitive learning involves information perception, lived experiences, and the capability to understand the information. According to Bandura (1986) of social cognitive theory, people learn through their personal experiences also by observing the action and its outcome. In addition, this theory used triadic reciprocal determinism factors to explain behavioral, personal, and environmental factors as the interacting determinants that influence learning bi-directionally (Bandura, 1986).

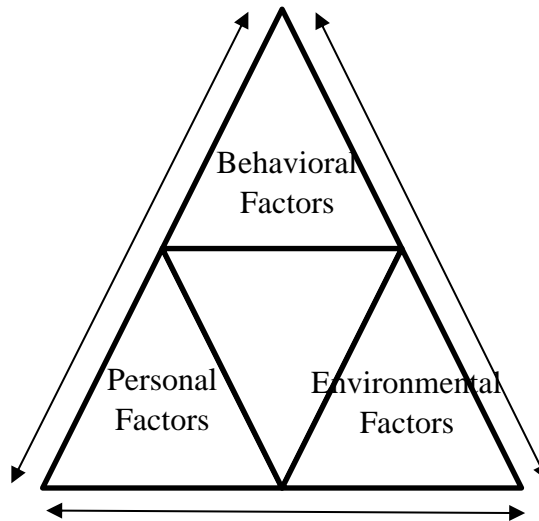


Figure 2.1: Social Cognitive Theory (Adapted from Bandura, 1986)

Based on the social cognitive theory, a conceptual framework was developed as shown in Figure 2.2 to explain that students have been exposed to geriatric care include dementia care in gerontology subjects and clinical placement in geriatric settings that would affect students' knowledge and attitude towards dementia. In this study, the nursing students' in Universiti Sains Malaysia are the learners. Nursing students learn about caring for dementia patients within a social environment such as from gerontology subjects and clinical placement in the geriatric settings. Based on Bandura (1986), triadic reciprocal determinism factors affect each other. Behavioral factors, personal factors, and environmental factors influence the students' knowledge and attitude towards dementia patients. Based on the findings of the study, it shows that nursing students in Universiti Sains Malaysia do not have practical in specific geriatric ward. Hence, it impact the students knowledge and attitude towards dementia. Figure 2.2 shows the application of SCT to this study.

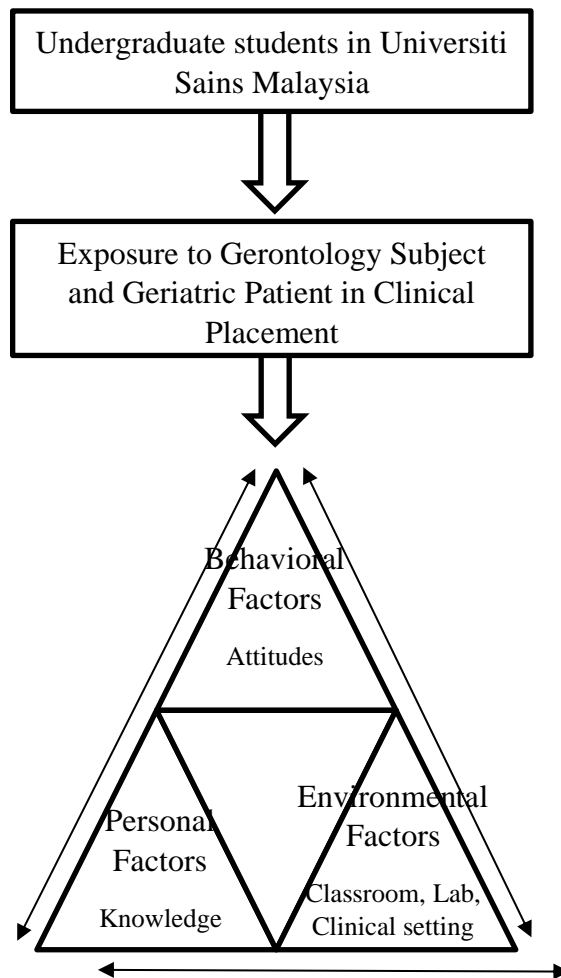


Figure 2.2: Modified from Social Cognitive Theory (Adapted from Bandura, 1986)

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the technique and reasons utilized to support the selected research methodology will be explained and justified. Understanding an appropriate research design is required to achieve the study goal. This chapter begins with an explanation and justification of the cross-sectional study design that will be used in this study, followed by a description of the study setting and population, a sampling plan that includes participant selection criteria, sampling method, and sample size determination, instrumentation, and ethical considerations in this study through appropriate data collection. The recommended statistical analyses utilized with the quantitative data will be explained in the last part.

3.2 Research design

This study used a descriptive cross-sectional design to determine the level of knowledge and attitude towards dementia among nursing students in Universiti Sains Malaysia. Descriptive research surveys provide a systematic collection of data. The cross-sectional design involved the collection of data at a point in time and considered appropriate for the phenomena being studied (Efiong, 2015).

3.3 Study setting and population

The study been conducted at Universiti Sains Malaysia Health Campus, Kubang Kerian, Kelantan from October 2021 to July 2022. This study been conducted among undergraduate nursing students in Universiti Sains Malaysia including Diploma and

Degree of nursing students within the data collection period that fulfilled the inclusion and exclusion criteria. The total number of nursing students is shown in Table 3.1.

Table 3.1 : Total nursing students in Universiti Sains Malaysia 2021/2022

Programmed and years		Total number of nursing students
Diploma	Year 2	51
	Year 3	69
Degree	Year 3	31
	Year 4	27
Total		178

3.4 Sampling Plan

Sampling is the process used in statistical analysis to select respondents from a large population (Bhattacharjee, n.d.). Sampling method ensure that the sample chosen represent the population being studied

3.4.1 Subject criteria

Inclusion and exclusion criteria

- The inclusion criteria
 - The students that have learn on gerontology subject (Poreddi et al., 2015)
- The exclusion criteria
 - Students that taking an academic leave (Sunaryo et al., 2020)
 - Unagreed to participate in this study

3.4.2 Sample Size Estimation

Objective 1 : To identify the level of knowledge and attitude towards dementia among nursing students at Universiti Sains Malaysia

The sample size for the first objective was calculated using Raosoft Calculator Software (2014). The total of nursing students from each class stands for degree and diploma received by the administration of the school of health sciences as shown in Table 3.1. The margin error will be set as 5%, the confidence level will be set as 95%, with 178 of population size, and the distribution response will be set as 50%. The result was 122 nursing students. However, to ensure the validity and reliability of this study, the total of the participants will be added 10% of drop out. Hence, the total sample size needed is 134 nursing students.

$$n = 122 + (122 \times 10\%)$$

$$n = 122 + 12$$

$$n = 134 \text{ nursing students}$$

Objective 2: To identify the correlation between knowledge and attitude score towards dementia among nursing students at Universiti Sains Malaysia

The sample size estimation for this objective was referred to the Sunaryo, Saifullah, and Mulyani (2020) study. This study shows a significant relationship between the score of knowledge and attitude towards dementia, which is $p = 0.001$. The Spearman's rank correlation coefficient was 0.29. Hence this data entered Khon & Senyak Sample Size Calculators (2021). Alpha and beta values been set as default values and the expected correlation coefficient set as 0.29. Hence the total sample size that needed by this objective will be 91 nursing students. However, to ensure the validity and reliability of this study, the total of the participants added 10% of drop out. Hence, the total sample size needed is 100 nursing students.

$$n = 91 + (91 \times 10\%)$$

$$n = 91 + 9$$

$$n = 100 \text{ nursing students}$$

Objective 3: To compare the knowledge and attitude score between nursing students with and without experience in caring people with dementia.

For this objective, the sample size estimation was calculated using Statistics and Sample Size Software. The formula used by this software is by comparing two means by using effect size. The alpha and beta values were set as default values. While the effect size set as 0.5, and the ratio for the two groups is 1:1. Hence the software shows the result for the sample size needed for the objective is 64 for each group. This means 64 nursing students that have experience caring for dementia patients and 64 nursing students that do not have experience caring for dementia patients. In total, the sample size needed is 128 nursing students. However, to ensure the validity and reliability of this study, the total of the participants will be added 10% of drop out. Hence, the total sample size needed is 140 nursing students.

$$n = 128 + (128 \times 10\%)$$

$$n = 128 + 12$$

$$n = 140 \text{ nursing students}$$

Therefore, the highest sample size needed to fulfill analyze of all the objectives is 128 participants. With considerations of a 10% dropout, 140 participants were recruited.

3.4.3 Sampling Method

This study used a stratified sampling design in which involves dividing a population into strata based on a certain feature known for each sampling unit in the population and then choosing samples from each stratum separately (Qian, 2010). In this study, the total number of nursing students were divided into different programs as diploma programmed and degree programmed. Then it was divided into different year of study. Second and third year of diploma, also third and fourth year of degree will be included in this study. Hence, this group been undergone simple random sampling using Research Randomizer software by Urbaniak and Plous (2021) for the selection of the respondents. This sampling method is used by the researcher to ensure each subgroup within the population represents and reduces bias and smaller sampling errors which lead to high validity.

3.5 Instrumentation

3.5.1 Instrument

The data was collected using a self-administered questionnaire consisting of three sections which are section A, B, and C. Section A consists of seven closed-ended questions associated with demographic data. Section B consists of 25 closed-ended questions on 5-point Likert-scale items questions that related to knowledge towards dementia. In this section, the Dementia Knowledge Assessment Scale (DAS) questionnaire was developed by Annear et al. (2015) and permission has been obtained (Appendix A). Section C consists of 20 closed-ended on 7-point Likert-scale items questions associated with attitude towards people with dementia. This section used Dementia Attitude Scale (DAS) questionnaire developed by O'Connor and McFadden (2010) and the permission has been obtained (Appendix A).