KNOWLEDGE AND ATTITUDE REGARDING CARE OF

AGE-RELATED HEARING LOSS AMONG NURSES

IN HUSM

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IN HUSM

by

INTAN YUSRINA BT RUSLI

Dissertation submitted in partial fulfillment of

the requirements for the degree of

Bachelor in Nursing with Honours

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CERTIFICATE

This is to certify that the dissertation entitled Knowledge and Regarding Care of Age-Related Hearing Loss Among Nurses in HUSM is the bona fide record of research work done by Ms Intan Yusrina Binti Rusli during the period from October 2023 to July 2024 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 fulfillment 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 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 promotional purposes.

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Intan Yusrina Binti Rusli

Date: 7 August 2024

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TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

PENGETAHUAN DAN SIKAP TERHADAP PENJAGAAN KEHILANGAN PENDENGARAN BERKAITAN USIA DALAM KALANGAN JURURAWAT DI HUSM

ABSTRAK

Kehilangan pendengaran yang berkaitan dengan usia, atau presbiakusis, adalah keadaan progresif dan kronik yang sering dicirikan oleh kecacatan pendengaran bilateral. Gangguan kompleks ini hasil daripada kesan kumulatif penuaan terhadap sistem auditori. Dengan peningkatan prevalens kehilangan pendengaran yang berkaitan dengan usia, ia menjadi kebimbangan kesihatan awam yang signifikan. Walau bagaimanapun, penyelidikan mengenai kehilangan pendengaran yang berkaitan dengan usia masih terhad, menekankan kepentingan menjalankan kajian yang komprehensif untuk meningkatkan pengenalan awal, intervensi, dan pengurusan keseluruhan dalam penjagaan warga emas. Kajian ini bertujuan untuk menentukan pengetahuan dan sikap mengenai penjagaan kehilangan pendengaran yang berkaitan dengan usia di kalangan jururawat di HUSM dan mengkaji hubungan antara pengetahuan dan sikap mengenai penjagaan kehilangan pendengaran yang berkaitan dengan usia di kalangan jururawat di HUSM. Reka bentuk kajian lintang digunakan dalam penyelidikan ini. Peserta adalah 220 jururawat yang mempunyai pengalaman dalam penjagaan warga emas. Data dikumpulkan menggunakan soal selidik dalam bentuk kertas dan borang Google yang diedarkan kepada responden. Statistik deskriptif digunakan untuk menggambarkan responden dan mengenal pasti tahap pengetahuan dan sikap mengenai penjagaan kehilangan pendengaran yang berkaitan dengan usia di kalangan jururawat di HUSM. Ujian Pearson Chi-square digunakan untuk menguji hubungan antara pemboleh ubah. Keputusan kajian menunjukkan bahawa jururawat mempunyai pengetahuan yang tidak memadai mengenai

penjagaan kehilangan pendengaran yang berkaitan dengan usia iaitu 85.9% dan 14.1% mempunyai pengetahuan yang memadai. Kajian juga menunjukkan bahawa jururawat mempunyai sikap negatif terhadap penjagaan kehilangan pendengaran yang berkaitan dengan usia iaitu 67.7% dan 32.3% mempunyai sikap positif. Terdapat hubungan yang lemah (r=0.021) dan tidak signifikan dari segi statistik. Keputusan kajian ini menunjukkan tahap pengetahuan dan sikap yang tidak memuaskan di kalangan jururawat. Disarankan untuk membangunkan program pendidikan, latihan, dan kesedaran yang dapat membantu jururawat memperoleh pengalaman dan meningkatkan pengetahuan mereka mengenai warga emas dengan kehilangan pendengaran.

KNOWLEDGE AND ATTITUDE REGARDING CARE OF AGE-RELATED HEARING LOSS AMONG NURSES IN HUSM

ABSTRACT

Age-related hearing loss, or presbycusis, is a progressive and chronic condition often characterized by bilateral hearing impairment. This complex disorder results from the cumulative effects of aging on the auditory system. With the prevalence of age-related hearing loss expected to rise, it poses a significant public health concern. However, research on age-related hearing loss remains limited, highlighting the importance of conducting comprehensive studies to improve early identification, intervention, and overall management in elderly care. This study aims to determine knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM and examine the correlation between knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM. A cross-sectional study design was used in this research. Participants were 220 nurses who have experience in elderly care. The data was collected using a hard copy questionnaire and Google form distributed to the respondents. Descriptive statistics were used to describe the respondent and identify the level of knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM. Pearson Chi-square was used to test the correlation between variables. Study results indicated that nurses have inadequate knowledge regarding care of age-related hearing loss which is 85.9% and 14.1% have adequate knowledge. It also shows that nurses have a negative attitude regarding care of age-related hearing loss which is 67.7% and 32.3% have positive attitude. There was a weak correlation (r=0.021) and not statistically significant. The results of this study have shown an unsatisfactory level of knowledge and attitude among nurses. It is suggested to develop an educational, training,

awareness program that can help the nurses accumulate experience and improve their

knowledge on the elderly with hearing loss.

CHAPTER 1
INTRODUCTION

1.1 Introduction

The first chapter provides an idea of the study for which the research was conducted. The problem statement, research objectives, research question, and study hypothesis are explained. Furthermore, the researcher has listed the conceptual and operational definitions, as well as the significance of the study.

1.2 Background of The Study

The global population aged 65 and over is growing faster than all other age groups. According to the World Health Organization, by 2030, one in six people in the world will be aged 60 years and over. During this time, the population aged 60 years and over will increase from 1 billion to 1.4 billion. The rapid growth of the population aged 65 years and older, has resulted in many global issues and has challenged healthcare professionals to assist them in maintaining optimal health status (Kim & Oh, 2020).

Many elderly experience sensory impairments such as hearing loss, olfactory dysfunction, vision problems and these conditions can have significant impacts on social and psychological functioning, as well as overall quality of life (Yang et al., 2023). According to the National Institute on Aging, about one-third of elderly have hearing loss, and the chance of developing hearing loss increases with age. As the population continues to age, the prevalence of age-related hearing loss is expected to increase, making it a significant public health concern (Bowl & Dawson, 2019). Therefore, it crucial to develop appropriate interventions to improve the quality of care of elderly with age-related hearing loss and enhance the knowledge and attitude of nurses regarding care of age-related hearing loss.

1

Age-related hearing loss known as presbycusis is a progressive, chronic, often bilateral hearing impairment (Smith et al., 2020). It is a common cause of hearing loss among elderly worldwide (Yang et al., 2023). It is also known as a complex disorder that resulted from the cumulative effects of aging on the auditory system (Bowl & Dawson, 2019). Recent studies found a significant rise in the rate of hearing loss among people aged 60 and above (Lu et al., 2023). According to World Health Organization, about 164.5 million people over the age of 65 suffer from hearing impairment worldwide (Sheffield & Smith, 2019).

In addition to aging, there are multiple factors including exposure to noise, ototoxic agents, genetic susceptibility, metabolic diseases and lifestyle that can influence the onset and severity of presbycusis (Yang et al., 2023). The underlying causes are complex. Its onset and progression could be contributed to genetic and biological risk factors, comorbidities, lifestyle choices, and environmental factors. Genetic that predispose to age-related hearing loss also one of the factor that influence the onset and the severity of the disease (Ooi et al., 2021). Age-related hearing loss is an unavoidable side effect of aging, but it is partially due to the practical issues and difficulties associated with chronic illness in elderly (Bowl & Dawson, 2019). However, for this proposed study, the researcher will focus regarding care of age-related hearing loss who admitted to hospital.

1.3 Problem Statement

The number of Malaysians aged 60 years and above is estimated to be 1.4 million and expected to increase to 3.3 million by the year 2020 (Stevens et al., 2019). As the number of elderly increases, so does the number of hospital admissions. Elderly with age-related hearing loss are more likely to experience health issues and chronic illnesses that may require hospitalization (Smith et al., 2020). When they are admitted to the hospital for treatment, they may face communication challenges. A study found that, the major problem caused by age-related hearing loss are poor communication ability (Kwak et al., 2022).

Limited and low level of knowledge and attitudes related to care of age-related hearing loss can lead to communication challenges and medication error. A study found many age-related hearing loss patients do not hear well (Cohen et al., 2017). As Lu et al. (2023) mention, communication challenges are commonly reported by elderly. Thus, the prevalence of medication error is highest among elderly and communication problems have been implicated (Smith et al., 2020). Care of age-related hearing loss can be challenging among nurses and it is essential to adapt to their specific needs and preferences.

Having an optimum level of knowledge and attitude regarding care of age-related hearing loss among nurses will give the best chance to enhance patient care and satisfaction. Their quality of life will be impacted when they are frequently admitted to the hospital and have a problem to hear clearly. Aside from the health implications, it also leads to poor communication and medical errors. Improving nurses' knowledge and attitude will enable them to make a more significant contribution to their care and avoid long-term difficulties. With these issues in mind, the researcher plans to conduct a study

to assess the knowledge and attitude of nurses regarding the care of age-related hearing loss.

1.4 Research Questions

1.   What is the level of knowledge regarding care of age-related hearing loss among nurses in HUSM?

2.   What is the level of attitude regarding care of age-related hearing loss among nurses in HUSM?

3.   Is there any correlation between knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM?

1.5 Research Objectives

1.5.1 General Objective

To determine the level of knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM.

1.5.2 Specific Objectives

1.   To identify the level of knowledge regarding care of age-related hearing loss among nurses in HUSM.

2.   To identify the level of attitude regarding care of age-related hearing loss among nurses in HUSM.

3.   To examine the correlation between knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM.

1.6 Research Hypothesis

1.6.1 Null Hypothesis

H0 : There is no correlation between knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM.

1.6.2 Alternative Hypothesis

HA : There is a correlation between knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM.

1.7 Conceptual and Operational Definitions

Table 1.1: Conceptual and operational definitions

Terms	Conceptual definitions	Operational definitions
Knowledge	Knowledge is defined as is justified true belief is shown to have the limitations given by the justification condition and the truth nature (Bolisani & Bratianu, 2018)	In this study, it refers to the understanding regarding care of age-related hearing loss among nurses in HUSM.

Age-related hearing loss	Age-related hearing loss known as presbycusis, it defined as hearing loss caused by aging and degeneration of auditory organs in the elderly. Recent studies estimate that roughly 33% of the persons over the age of 50 years, 45% of the persons over the age of 60 years and 63.1% of the persons over the age of 70 years have been affected (Ge et al., 2023).	In this study, age-related hearing loss refers to elderly with hearing loss between age 65 and above who admitted to hospital.
Attitude	An attitude is a mental and neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related (Fazio, 2007).	In this study, it refer to attitude regarding care of age-related hearing loss among nurses in HUSM
Nurses	Nurse is a person who has completed a program of basic, generalized nursing education and is authorized by the appropriate regulatory authority to practice nursing in his/her country (Nursing Definitions, 2023).	In this study, it refers to nurses works in HUSM and participate in this study.

1.8 Significance of The Study

The findings of the study will provide knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM. Studying age-related hearing loss is essential for nurses to enhance patient care, health outcomes and patient satisfaction. The perception of age-related hearing loss among nurses is shaped by their professional knowledge, experiences, and exposure to patients with age-related hearing loss. Nurses generally have more informed and empathetic understanding of age-related hearing loss compared to the general population.

Furthermore, this study can help provide appropriate health professionals' opinions regarding care of age-related hearing loss among nurses. The main problem associated with age-related hearing loss that is highlighted in this study is communication challenges. Communication is important for age-related hearing loss to ensure they can access and enhance the quality of life. The studies show that communication can affect the quality of healthcare output, impact the patient's health and satisfaction, and benefit both patients and providers (Sharkiya, 2023). Hopefully, the information gathered from this study can be used to identify knowledge regarding care of age-related hearing loss and attitude used for communicating with them. On the other hand, this study's finding can be used as a baseline and reference for future research.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

This chapter will present a review of the literature related to knowledge and attitude regarding care of age-related hearing loss among nurses. This chapter will also describe the theoretical framework. The Theory of Planned Behavior (TPB) will be guiding this study.

2.2 Age-Related Hearing Loss

Age-related hearing loss or known as presbycusis is a most common sensory deficit affecting aging adults (Yang et al., 2023). Age-related hearing loss typically presents as a progressive, irreversible sensory hearing loss that increases with age, mainly involving high frequency hearing, and gradually spreads to low frequency hearing (Wang & Puel, 2020). It usually occurs in both ears due to the loss is gradual and they are not realized when they have lost of some the ability to hear. Age-related hearing loss typically develops gradually, and mild cases are difficult to detect (Keithley, 2020). It is characterized by peripheral hearing dysfunction, predominantly in the detection of high-frequency sounds (Stevens et al., 2019).

The prevalence of age-related hearing loss is approximately one in three people in the United States between the ages of 65 and 74 and nearly half of those older than 75 have difficulty hearing (Fischer et al., 2016). In addition to American population, Two thirds of people over 70 years old suffer from loss of hearing sensitivity (Bainbridge & Wallhagen, 2014). In Egypt has been reported to be 44.3% (Said, 2017). In Norway, 60% of the population aged 60 to 79 and 90% of people aged more than 80 had acquired hearing loss (Solheim et al., 2016). In South Korea, the total number of adults with

hearing loss is estimated to be 13 million which is about 20 times the number of people currently receiving treatment for hearing loss (Kang & Park, 2023). However, the prevalence of age-related hearing loss among elderly in Malaysia using a single question and pure tone audiometry was 24.3% and 36.9% respectively (Rosdina et al., 2010).

Many factors can contribute to hearing loss when gets older. When exposure to sounds that are either too loud or too long is one of the factor (Fischer et al., 2016). In addition to aging, many factors such as exposure to noise, ototoxic agents, genetic, metabolic diseases and lifestyle can contribute to the development of age-related hearing loss alone or in combination (Keithley, 2020). Family history and genetic of hearing loss can increase an individual risk of age-related hearing loss. Research has shown that, using the population of Framingham Heart Study participants, it was concluded that about 55% the variance in auditory thresholds in aged siblings and parent/child relations was attributable to genetic causes (Keithley, 2020).

Furthermore, gender also can contribute to age-related hearing loss. Research has indicated that men are more likely than women to experience age-related hearing loss (Bowl & Dawson, 2019). This indicates that age-related hearing loss has been associated with many factors, including noise exposure, genetic predisposition, systemic diseases such as cardiovascular disease and diabetes mellitus, ear-related diseases, medication ototoxicity, socioeconomic status, and lifestyle factors (Yang et al., 2023).

2.3 Age-Related Hearing Loss and Challenges

Age-related hearing loss is an inherent consequence of the natural aging process and it led to communication difficulties that impact the daily lives of those affected. In normal aging, which can result from mechanical and neural disruptions occurring throughout the pathway from the outer ear to the auditory cortex (Peelle et al., 2011). Age-related hearing loss often encounter one of the most significant challenges, which is the potential breakdown of effective verbal communication and may lead to medication errors (Cudmore et al., 2017).

The elderly with hearing loss face difficulties when it comes to participating in different activities. They struggle with effective communication in noisy and complex environments such as hospitals. They have difficulties in understanding when surrounding and interacting with their family members (Kang & Park, 2023). It is important to recognize the challenges that elderly people with hearing loss face when they are admitted to the hospital. By providing accommodation such as hearing aids or clear communication techniques, we can help them to feel more comfortable and included in their healthcare experience. Patients with age-related hearing loss have specific needs that nurses need to be aware of and know how to interact and communicate with them. Nurses may face difficulties when communicating with them. Communicating well with elderly remains a significant challenge for many healthcare providers and is often complicated by sensory impairments and or cognitive problems (Lu et al., 2023).

Previous studies have confirmed that age-related hearing loss has a negative impact on clinical communication, across both hospital and primary care clinical settings (Lu et al., 2023). It is also mentioned that ineffective communication can have a negative impact on weak communication skills. Due to poorly adapted communication strategies,

it is reported that people with hearing loss perceive their social skills as poor (Lu et al., 2023). They may struggle to hear certain speech sounds, leading to misunderstandings and miscommunication. They also might need to speak louder to be heard, which can be uncomfortable or inconvenient in certain situations. Thus, encounters with background noise can make it difficult to filter out the noise, making it hard to focus on someone's voice in noisy environments. The other challenges of age-related hearing loss can lead to social isolation and withdrawal from social activities due to communication difficulties.

Based on other studies, most respondents were not aware of the communication difficulties experienced by elderly with age-related hearing loss with the majority 58.54% responding incorrectly meanwhile only 41.46% knew that those affected by age-related hearing loss would report that they can hear people talking (Rubin, 2017). This could explain prior research demonstrating a need to educate healthcare professionals such as nurses regarding their role in identifying and addressing hearing loss in their elderly patients and raising awareness.

Thus, other studies conducted by Stevens et al. (2019). 90% of respondents indicated "sometimes" or "often" experiencing communication difficulties included hearing their name called in the waiting room, having difficulty when the speaker turns away such as when looking at a computer and communicating by telephone. In addition, 43% reported having misheard a physician and nurse in a primary care or hospital setting (Cudmore et al., 2017).

2.4 Knowledge Regarding Care of Age-Related Hearing Loss

Knowledge regarding the care of age-related hearing loss refers to the understanding gained through learning or practice about the elderly with hearing loss. This knowledge can help healthcare professionals such as nurses to provide better care and support the elderly with hearing loss. A study conducted in East Asia, specifically South Korea, evaluated the nurse's knowledge regarding care of age-related hearing loss. The total percentage of correct answers was 62.9%, indicating that over half of the nurses answered correctly (Kang & Park, 2023). However, there are still some healthcare professionals, including nurses, who lack knowledge about age-related hearing loss. These findings highlight the importance of ongoing education and training to improve awareness and understanding of age-related hearing loss among healthcare providers.

A study evaluated medical students' knowledge related to care of age-related hearing loss. The results showed a significant lack of knowledge in medical students regarding age-related hearing loss. Only 41.46% of the respondents provided the correct answer (Rubin, 2017). According to a recent study, both facility managers and healthcare professionals have a limited and low level of knowledge when it comes to elderly patients with hearing loss and dementia and study found that Koreans and Indonesians had limited knowledge of the hearing status of their elderly patients and were not even aware whether their elderly patients used hearing aids or not (Kwak et al., 2022). The results of this study highlight the need for more comprehensive education and training programs for healthcare professionals, to improve their knowledge on understanding of age-related hearing loss and its management.

In addition, regarding the responses given by the subjects regarding ageing for the various questions in the Ageing quiz, it was found that most participants did not have accurate knowledge of ageing. Only 25% of the subjects had excellent knowledge of ageing (Attafuah et al., 2022). These findings suggest that there is a need for greater education and awareness about ageing, including age-related hearing loss, among the general population.

2.5 Attitude Regarding Care of Age-related Hearing Loss

Attitude regarding care of age-related hearing loss must be prioritized to manage elderly with hearing loss effectively and improve outcomes. The attitude regarding care of age-related hearing loss refers to the way approaches by nurses to manage and care toward their patients. All the attitudes regarding care of age-related hearing loss options mentioned in previous study are true, but we want to determine which option is most common attitude by nurses when dealing with age-related hearing loss. During communication, the provider may enhance positive motivations and involve the individual in treatment decisions (Sharkiya, 2023).

In a study by Smith et al. (2020), evaluating the attitudes of both primary care and secondary care physicians towards age-related hearing loss, it was found that there was a positive attitude significantly higher of using certain communication attitudes, such as speaking directly into the patient's ear, minimizing background noise and facing the patient. Primary care physicians were more likely to report situations where communication problems increase due to hearing loss, with 78% of primary care physicians acknowledge such situations compared to 55% of secondary care physicians. These findings suggest that healthcare providers such as nurses are becoming more aware

of the communication challenges faced by elderly with hearing loss and are taking steps to address them.

Another study related attitude care of age-related hearing loss is done among nurses in South Korea. Nurses 's attitude regarding the care of the elderly with hearing loss was the average 85.4% out of 100% (Kang & Park, 2023). The result in this study shows positive attitudes towards care of age-related hearing loss. Meanwhile, a study conducted by Kwak et al. (2022), these findings show that low level of attitude toward their patients with hearing loss. The result was 35.53% to 84.62% which was higher percentage for negative response.

2.6 Correlation Between Knowledge and Attitude Regarding Care of Age-Related Hearing Loss

Understanding the correlation between knowledge and attitude among nurses regarding the care of age-related hearing loss is an essential aspect in determining the effectiveness of care of age-related hearing loss. When individuals have a better understanding of age-related hearing loss care, they are more likely to have a positive attitude regarding care of age-related hearing loss. Recent studies have shown that there is a significant positive correlation between the attitude and knowledge towards caring for elderly patients with hearing loss. The nurses need to have both knowledge and a positive attitude towards elderly care in order to provide effective care to the elderly.

In India, a cross-sectional study has been conducted to assess the knowledge and attitude regarding care of the elderly with hearing loss among nursing students. The findings indicated that approximately 76.4% of the students had a good level of knowledge and 64.6% of the students had a positive attitude towards elderly care. The study revealed a positive correlation between knowledge and attitude (Baljeet Kaur,

2014). In South Korea, study conducted to determine the relationship between nurses'
knowledge and attitudes toward care of elderly with hearing loss. The higher nurses
knowledge regarding care of elderly with hearing loss, the more positive their attitude
regarding care of elderly with hearing loss (Kang & Park, 2023).

2.7 Theoretical Framework

The Theory of Planned Behavior (TPB) originated as the Theory of Reasoned
Action in 1980, with the aim of predicting an individual's intention to perform a specific
behavior in a particular context (Ajzen, 1991). TPB predicts an individual's intention to
engage in a behavior at a specific time and place. It asserts that individual behavior is
driven by behavioral intentions, which are a function of three determinants: an
individual's attitude toward behavior, subjective norms, and perceived behavioral control.
This theory was designed to provide insights into all behaviors that individuals can
control. The primary element of this model is behavioral intention.

Behavioral intentions are influenced by an individual's perception of the
likelihood of a behavior leading to desired outcomes and their subjective evaluation of
the pros and cons associated with those results. Thus, for some cases, if someone has a
negative attitude and feels that they do not have control of this action, that will lead the
person to be less likely to carry out that action. In simple terms, TPB is a way to figure
out why people decide to do something based on what they think will happen and the
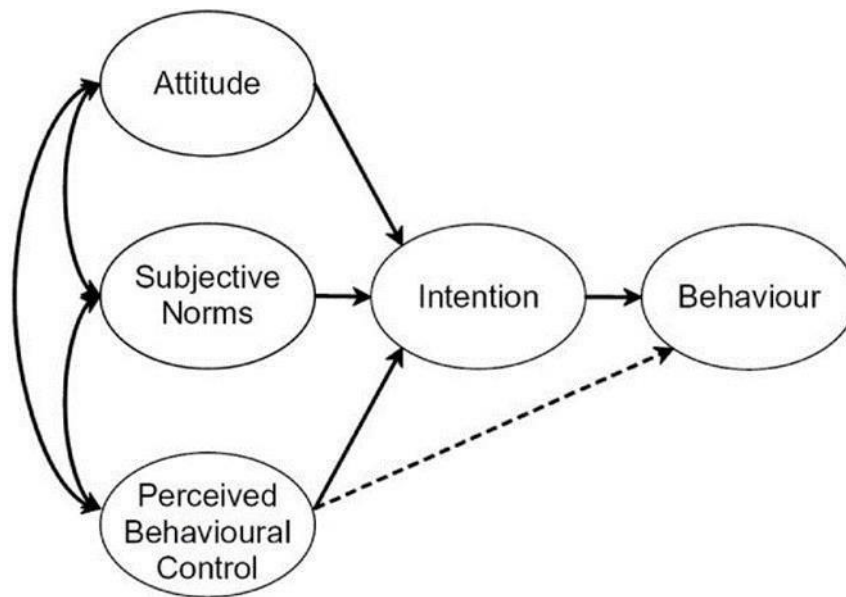perceived outcomes, whether positive or negative.

Figure 2.1 The Theoretical Framework of The Theory of Planned Behavior (Ajzen, 1991)

The Theory of Planned Behavior (TPB) is a useful framework for explaining and predicting human behavior based on three factors: attitude, subjective norms, and perceived behavioral control. This model can be used to investigate how knowledge and attitude influence behavior when it comes to care of age-related hearing loss. It can help assess whether nurses have a positive attitude toward age-related hearing loss care and whether they are knowledgeable about age-related hearing loss care. By using the TPB, researchers can gain insights into the factors that influence nurses' behavior. For example, they can investigate whether nurses have a positive attitude toward age-related hearing loss care and whether they believe that they have control over providing effective care to patients with age-related hearing loss. This information can be used to develop interventions aimed at improving nurses' knowledge and attitudes toward age-related hearing loss care.
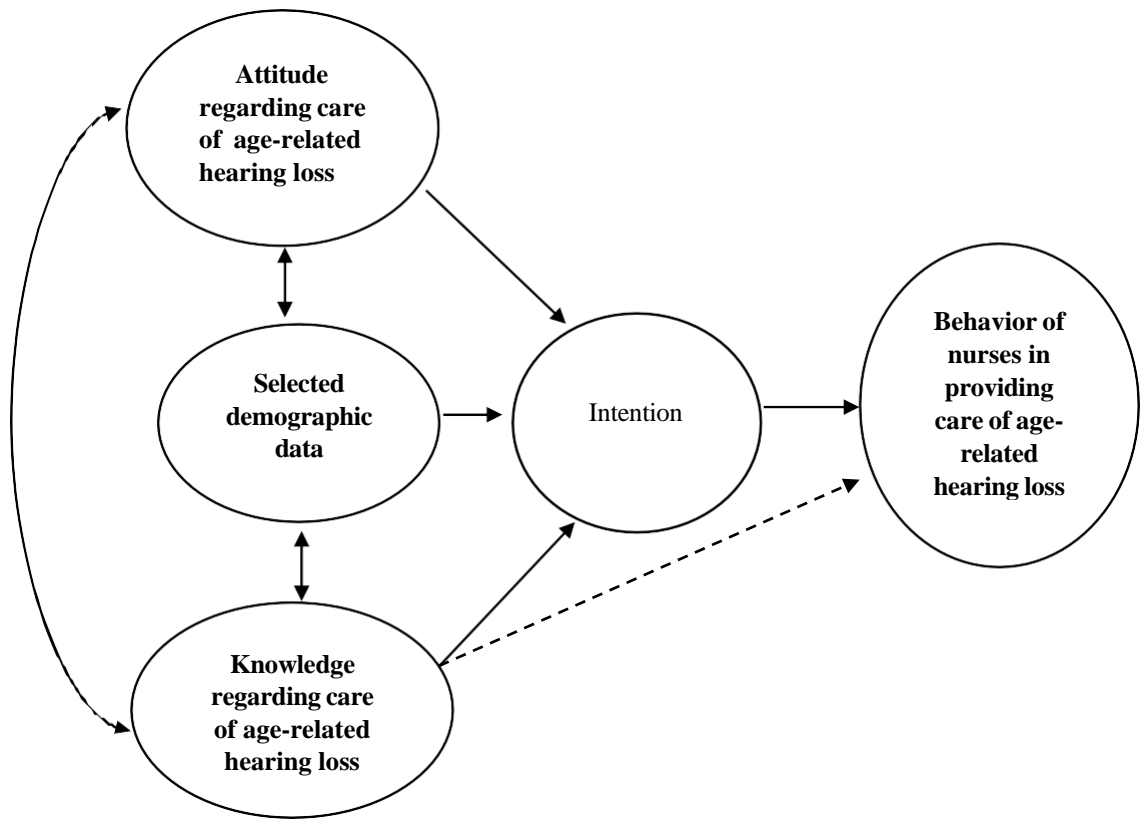
Figure 2.2 The Theory of Planned behavior (Adopted from Ajzen, 1999)

CHAPTER 3
METHODOLOGY AND METHODS

3.1 Introduction

This chapter will explain the approach and rationale used to support the chosen methodology. The aim to understand the most appropriate research design used so that the objective of the study can be achieved correctly. This chapter will begin with a description of the study design and justification for choosing to use this approach, followed by a description of the study population and setting, sampling plan, participant selection criteria, sample size determination, instrumentation, variables, and data collection plan. The final section explained the method for data analysis, ethical considerations and expected research outcomes.

3.2 Research Design

This study used a cross-sectional study design. Cross-sectional studies were characterized by the collection of relevant data at given point in time (Kesmodel, 2018). This approach is considered appropriate to give a detailed description of the participants' knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM.

3.3 Research Location

The study was conducted in Hospital Universiti Sains Malaysia (HUSM), which is situated in Kubang Kerian, Kelantan. HUSM is a tertiary hospital and a referral center located in the east coast part of Malaysia. The hospital is well-equipped with the latest medical facilities and technologies, and it serves as a major healthcare center for the local community as well as patients from other parts of Malaysia.

3.4 Research Duration

The duration of this study was from October 2023 until July 2024. For data collection, the duration was 3 to 6 months.

3.5 Research Population

To propose the objective of the research, the target population of this study was nurses in Hospital Universiti Sains Malaysia.

3.6 Subject Criteria

3.6.1 Inclusion Criteria

The inclusion criteria for this study are nurses in HUSM which fulfill the following the criteria:

- Nurses with experience in elderly care
- Able to understand, speak and write in English.

3.6.2 Exclusion Criteria

The exclusion criteria for this study are nurses that:

- On leave during this study period
- Nurse work in pediatric unit, CCU, ICU and neuro ward
- Nurse manager who does not involve with patient care

3.7 Sampling Plan

Sampling is to select numbers of subjects from target population as research respondents. Sampling ensures that the validity and reliability of research to be representative of the population of interest. An effective sampling method enables researcher to achieve research goal.

3.7.1 Sampling Method

This study used convenience sampling method for the collection data. Then, the participants were selected from those who fulfilled inclusion and exclusion criteria.

3.7.2 Sampling Size Estimation

The sample size was calculated based on the objectives of this study. Objective 1 and 2 used single proportion formula and the population proportion taken based on previous study conducted by (Kang & Park, 2023).

$$n = [\frac{z}{\Delta}]^2 p(1-p)$$

Whereby,

n = Sample size

p = Anticipated population proportion

z = value of the desired confident level, Z 0.05 = 1.96

Δ = precision = 0.05

Meanwhile, objective 3 is estimated by using sample size calculator in website (Ariffin, 2021).

Figure 3.1: Sample size calculation retrieved from
calculator in website (Arifin, 2021).

Objective 1:

For the first objective (to identify the level of knowledge regarding care of age-related hearing loss among nurses in HUSM), the previous study shows that the average score 62.9% (Kang & Park, 2023).

Calculation :

$$n = [\frac{1.96}{0.05}] \ 0.63(1 - 0.63)$$

$n = 359$ participants

After considering 10% of drop out,

359 x 10% = 36

$n = 395$ participants

The sample size was 359 and after considering a 10% drop out. The calculation sample size was 395.

Objective 2:

For second objective (to identify the level of attitude regarding care of age-related hearing loss among nurses in HUSM), according to the previous study shows that the average score 85.4% (Kang & Park, 2023).

Calculation :

$$n = [\frac{1.96}{0.05}] \ 0.85(1 - 0.85)$$

$n = 196$ participants

After considering 10% of drop out,

196 x 10% = 20

n = 216 participants

The sample size was 196 and after considering a 10% drop out. The calculation sample size was 216.

Objective 3:

For the third objective (to examine the correlation between the knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM), the previous study shows that the (r = 0.17) of the relationship between knowledge and attitude regarding the care of elderly with hearing loss (Kang & Park, 2023).

Figure 3.2: Sample size calculation retrieved from
calculator in website (Arifin, 2021).

n = 269 participants

After considering 10% of drop out,

n = 299 participants

Therefore, for this study, 395 nurses in HUSM were invited to participate in this study.

3.8 Research Instrument

In this study, data was collected from respondents via a set of questionnaires on knowledge and attitude regarding care of age-related hearing loss among nurses in HUSM. Data for this study was obtained through Google form and hard copies. The questionnaire consists of three main sections: Section A, Section B, and Section C.

Section A: Socio-demographic data

Section A consists of demographic data such as age, gender and year of clinical experience.

Section B: Knowledge regarding care of age-related hearing loss

Section B consists of 30 questions to assess the knowledge regarding care of age-related hearing loss. 20 questions on symptoms and risk factors and 10 questions on nursing and rehabilitation.

Section C: Attitude regarding care of age-related hearing loss

Section C consists of 18 questions to assess the attitude regarding care of age-related hearing loss.

3.8.1 Translation of Instrument

The original version of the questionnaire used in this study is in the English version. Since the respondent chosen for this study were nurses in HUSM, the inclusion criteria included that the respondent must be able to understand, speak and write in English. Therefore, no translation was needed. The instrument is administered in the English language as nurses in HUSM are expected to be able to understand and complete the questionnaire.

3.8.2 Validity and Reliability

The questionnaire for knowledge was verified for validity by original author and Cronbach's alpha was found to be 0.78 (Kang & Park, 2023). The reliability of the instrument used a pilot study was carried out to identify whether respondent can understand and answer the questionnaire.

3.9 Variables

3.9.1 Variable Measurement

Table 3.1: Independent and dependent variables

Independent variable	• Knowledge regarding care of age-related hearing loss
Dependent variable	• Attitude regarding care of age-related hearing loss

3.9.2 Variable Scoring

Section B required the respondent to answer the questions correctly, and each correct answer is given 1 point, and for the wrong answer is given 0 points. The scores ranged from 0-30, with higher scores indicating higher knowledge regarding care of age-related hearing loss. By using modified Bloom's cut-off point, nurses who scored ≥80% of the correct knowledge questions was considered as having "adequate knowledge" and who scored <80% was considered as having "inadequate knowledge" (Ashebir et al., 2022).

Table 3.2: Scoring knowledge regarding care of age-related hearing loss

Score	Total score (%)	Level
0-23	<80%	Inadequate
24-30	≥80%	Adequate

Section C required the respondent to answer the question. The score ranges from 18 to 72 with higher scores indicating more positive attitudes. The scale is 4-point Likert