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Knowledge of Older Adults' Care and Its Relation to Ageism Attitudes Among
Undergraduate Nursing Students in Universiti Malaysia Sarawak (UNIMAS)

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A final year project submitted in fulfilment of the requirements for the Bachelor of Nursing
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DECLARATION

I hereby declare that the research study for MDJ4653 Final Year Project I, entitled "Knowledge of Older Adults' Care and Its Relation to Ageism Attitudes Among Undergraduate Nursing Students in Universiti Malaysia Sarawak (UNIMAS)", is my original work. I affirm that this research was conducted in accordance with ethical standards, and all sources of information used have been appropriately cited and acknowledged in the references. I understand the submitted work will be reviewed and evaluated in compliance with Universiti Malaysia Sarawak's academic policies. I further declare this research has not been accepted for any degree and is not being submitted concurrently for any other degree.

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ABSTRACT

The increasing ageing population presents significant challenges to healthcare systems worldwide, including Malaysia, where older adults are projected to comprise 15% of the population by 2030. Nurses play a crucial role in caring for older adults, yet research indicates that nursing students may hold ageist attitudes that can affect care quality. This study aimed to assess the knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in UNIMAS. A quantitative, cross-sectional research design was employed, involving 162 randomly selected students from Year 1 to Year 4. Data were collected using a self-administered printed questionnaire, which consisted of socio-demographic items, the Knowledge of Older Adults' Care scale, and the Ageism Attitude Scale (AAS). Descriptive statistics summarised students' socio-demographic characteristics, knowledge, and attitudes, while Spearman's correlation was used to analyse the relationship between knowledge and attitudes. The findings revealed that students demonstrated a generally good level of knowledge and positive attitudes toward older adults. The Spearman's correlation coefficient showed a weak but statistically significant positive correlation between the two variables, suggesting that higher knowledge is weakly associated with more positive attitudes. These results highlight the importance of enhancing gerontology education and implementing targeted strategies to further improve students' attitudes. Continuous curriculum development, structured clinical exposure, and attitudinal interventions are essential to preparing nursing students for competent and compassionate care of the ageing population.

Keywords: Ageism, Older Adults' Care, Nursing Students, Knowledge, Attitudes

ABSTRAK

Peningkatan populasi warga emas memberi cabaran besar kepada sistem penjagaan kesihatan di seluruh dunia, termasuk Malaysia, di mana golongan warga emas dijangka merangkumi 15% daripada jumlah penduduk menjelang tahun 2030. Jururawat memainkan peranan penting dalam penjagaan warga emas; namun, kajian menunjukkan bahawa pelajar kejururawatan masih mempunyai sikap ageisme yang boleh menjejaskan kualiti penjagaan. Kajian ini bertujuan untuk menilai pengetahuan mengenai penjagaan warga emas dan hubungannya dengan sikap ageisme dalam kalangan pelajar kejururawatan prasiswazah di Universiti Malaysia Sarawak (UNIMAS). Reka bentuk kajian kuantitatif secara keratan rentas telah digunakan, melibatkan 162 pelajar yang dipilih secara rawak dari Tahun 1 hingga Tahun 4. Data dikumpulkan menggunakan borang soal selidik bercetak yang dijawab sendiri oleh peserta, yang merangkumi item sosio-demografi, skala Pengetahuan Penjagaan Warga Emas, dan Skala Sikap Ageisme (AAS). Statistik deskriptif digunakan untuk meringkaskan ciri-ciri sosio-demografi, pengetahuan, dan sikap pelajar, manakala korelasi Spearman digunakan untuk menganalisis hubungan antara pengetahuan dan sikap. Dapatan kajian menunjukkan bahawa pelajar secara umumnya mempunyai tahap pengetahuan yang baik dan sikap positif terhadap warga emas. Pekali korelasi Spearman menunjukkan hubungan positif yang lemah tetapi signifikan secara statistik antara kedua-dua pemboleh ubah tersebut, mencadangkan bahawa tahap pengetahuan yang lebih tinggi dikaitkan secara lemah dengan sikap yang lebih positif. Keputusan ini menekankan kepentingan untuk memperkukuh pendidikan gerontologi serta melaksanakan strategi yang disasarkan bagi meningkatkan sikap pelajar. Pembangunan kurikulum secara berterusan, pendedahan klinikal yang berstruktur, dan intervensi sikap amat penting dalam

menyediakan pelajar kejururawatan untuk memberikan penjagaan yang kompeten dan berperikemanusiaan kepada populasi warga emas.

Kata kunci: *Ageisme, Penjagaan Warga Emas, Pelajar Kejururawatan, Pengetahuan, Sikap*

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LIST OF ABBREVIATIONS

AAS	Ageism Attitude Scale
FMHS	Faculty of Medicine and Health Science
UNIMAS	Universiti Malaysia Sarawak
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter provides an overview of the study and its components. Section 1.1 introduces the background of the study, while Section 1.2 outlines the statement of the problem. Section 1.3 details the research questions, followed by Section 1.4, which presents the research aim and objectives. Additionally, Section 1.5 highlights the hypotheses, and Section 1.6 discusses the significance of the study. Section 1.7 emphasizes the significance of the study, and Section 1.8 defines key terms, including conceptual and operational definitions. Finally, Section 1.9 summarizes the chapter.

1.1 Background of Study

The world's healthcare systems face significant challenges as a result of the growing ageing population. According to the World Health Organization (WHO) (2024), the number of individuals over 60 is expected to double by 2050, reaching approximately 2.1 billion. As the population ages, the risk of health problems increases, raising the demand for healthcare resources (Mohammed & Abdel Aziz, 2019). The Malaysian elderly population is expected to rise significantly, making up approximately 15% of the total population by 2030 (Abdullah et al., 2024). As Malaysia's older population grows, the healthcare and social support systems will likely face more significant pressures. This rising need will require the development of specialised services to meet the complex requirements of older adults as well as more resources in community health settings, long-term care facilities, and hospitals. This

shift underscores the urgent need for healthcare services to address the unique medical, psychological, and social challenges older adults face.

According to Almotairi et al. (2023), nurses are crucial in providing healthcare to older adults. They often act as primary caregivers in hospitals, nursing homes, and home healthcare settings. However, studies show that a large number of nursing students today still harbor ageist beliefs, which can significantly affect the standard of care given to older adults. For example, an Australian study discovered that 87.5% of nursing students had stigmatised and negative attitudes toward older adults, which can impede effective care and harm interpersonal relationships with elderly patients (Fhon et al., 2024). Ageism, which is defined as age-based stereotypes, prejudice, or discrimination, is frequently directed at older adults (Gvili & Bodner, 2021). Research indicates that older adults who experience ageism tend to have reduced life expectancies, poorer physical and mental health outcomes, and increased levels of loneliness and social apathy.

In academic settings, nursing students' dual development of clinical skills and attitudes is essential for effective patient care, particularly for older adults. However, clinical training experiences can sometimes reinforce ageist attitudes among healthcare trainees, especially when older adults are portrayed in ways that highlight stereotypes or limitations. This reinforcement occurs due to a lack of specific training in mental healthcare for older adults, allowing ageism to persist (Caskie et al., 2023). As a result, it is critical to investigate nursing students' knowledge of older adults' care and whether knowledge is linked to ageism, as such attitudes may limit their ability to provide compassionate, effective care. Investigating knowledge and attitudes in the Universiti Malaysia Sarawak (UNIMAS) context will help identify whether educational interventions are needed to foster more positive and empathetic views towards older adult care.

1.2 Statement of Problem

Despite the rising demand for older adults' care, ageism remains a critical issue among healthcare professionals, including nursing students, which negatively influences the care provided to older adults. Fhon et al. (2024) found that 87.5% of student nurses had stigmatising and negative views towards older individuals. Such attitudes can discourage nursing students from pursuing careers in geriatric care and reduce empathy, which can impact the quality of care provided. This issue is further underscored by the finding that only 14.8% of nursing students expressed interest in interacting with older adults in a working environment (Castro et al., 2023). Addressing these ageist attitudes is essential to preparing a compassionate, skilled healthcare workforce that can meet the growing needs of an ageing population.

At Universiti Malaysia Sarawak (UNIMAS), there is a notable gap in research examining how nursing students' knowledge of older adults' care may influence their attitudes toward ageism. Unaddressed ageist attitudes among nursing students can significantly impact their future clinical practice, leading to biased or inadequate care for older patients. Without targeted research to explore and address these attitudes, nursing programs are at risk of overlooking the importance of cultivating positive perspectives toward older adults. This could lead to a future nursing workforce that may be unprepared to deliver empathetic, high-quality, and culturally competent care to an increasingly ageing population.

This study specifically addresses the need to understand how ageist attitudes among undergraduate nursing students in UNIMAS relate to their knowledge of older adult care. This study aims to find out whether nursing students have ageist beliefs, what factors contribute to these beliefs, and their impact on professional approaches to caring for older

adults. By investigating this issue, the study hopes to promote students' understanding of care for older people, reduce their ageism, and able to provide a standard of care.

1.3 Research Questions

- i. What is the knowledge of undergraduate nursing students towards older adults' care in UNIMAS?
- ii. What is the attitude of undergraduate nursing students in UNIMAS towards older adults?
- iii. Is there any relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS?

1.4 General Research Objective

To assess the knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in UNIMAS.

1.5 Research Objectives

- i. To assess the knowledge of undergraduate nursing students towards older adults' care in UNIMAS.
- ii. To assess the attitude of undergraduate nursing students in UNIMAS towards older adults.
- iii. To examine the relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS.

1.6 Hypotheses

Null Hypothesis (H_0): There is no significant relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS.

Alternative hypothesis (H_a): There is a significant relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS.

1.7 Significance of the Study

As the ageing population grows, there is an urgent need for healthcare providers who are not only skilled but also empathetic towards older adults. Adults over the age of 65 had more frequent visits to doctors and about 20% more frequently than younger adults, with hospitalisation rates being three times higher (Jones & Dolsten, 2024). This study explores the relationship between undergraduate nursing students' knowledge of older adults' care and their ageist attitudes, offering meaningful insights for nursing educators in UNIMAS. Gaining a clearer understanding of how knowledge influences attitudes towards ageism may support the formulation of effective educational strategies aimed at preparing students to deliver high-quality care for older individuals. The outcomes of this research may guide the integration of focused learning modules, such as those centred on gerontology and person-centred care, into the nursing curriculum. Embedding gerontological competencies within nursing education could significantly enhance students' preparedness by improving both their theoretical understanding and practical ability to provide compassionate, age-inclusive care across diverse healthcare settings (Tate et al., 2024).

According to Fu et al. (2022), a negative attitude toward older adults can result in social problems such as discrimination, humiliation, and even abuse. Identifying these attitudes early in nursing education is critical for addressing potential issues and encouraging a more positive approach to older adult care. While this study does not directly intervene, its findings may inform future educational strategies and help to improve nursing students' overall preparation for their roles in caring for the older adult population.

Additionally, this study may have broader implications for healthcare policy, supporting efforts to combat ageism within the healthcare system. Research indicates that ageist attitudes not only adversely affect older patients but also contribute to burnout and emotional dissonance among healthcare providers (Purchase et al., 2024). This necessitates a multifaceted approach to combat ageism, which includes policy reforms, educational initiatives, and the promotion of positive intergenerational interactions (Barber et al., 2024). The findings, which shed light on nursing students' current knowledge and attitudes, could help shape future curriculum adjustments and policy recommendations aimed at fostering a more positive and respectful approach to older adult care. Ultimately, the research could help create a healthcare environment where all individuals, regardless of age, are treated with dignity and respect.

Finally, addressing ageism in nursing education not only improves patient care but also promotes a more inclusive society. This study contributes to the long-term goal of reducing age-related discrimination and improving the lives of older adults by training future nurses with the appropriate attitudes and skills.

1.8 Definitions of Terms

The following terms were defined for this research:

1.8.1 Knowledge

Conceptual definition: Knowledge is an important state where an individual actively engages with and understands reality. It is considered a relational concept. It is considered a relational concept (Zagzebski, 2017).

Operational definition: The level of understanding and awareness of students of nursing about caring for older adults. In this section, 28 knowledge item questions will be evaluated using a dichotomous scale (1 = yes, 0 = no).

1.8.2 Older adults

Conceptual definition: An older person who is over 60 years of age (UNHCR, 2020).

Operational definition: Refer to individuals typically aged 60 years and above, who may experience physical, cognitive, or social changes associated with ageing.

1.8.3 Ageism attitudes

Conceptual definition: Ageism is the practice of creating preconceived notions, having biased opinions, or acting in a way that discriminates against someone because of their age (Kang & Kim, 2022).

Operational definition: It refers to an individual's thoughts, feelings, or behaviours that reflect stereotypes or biases toward older adults. The 23 items on the AAS will be evaluated and divided into three categories (restricting the life of older adults, positive ageism, and negative ageism). The first component, restricting the life of older adults, reflects societal beliefs about limiting older adults' social lives (items 1, 5, 12, 14, 17, 19, 21, 22, 23). Positive ageism, the second component, refers to positive societal attitudes towards older adults (items 2, 4, 6, 7, 8, 9, 13, 20). The third component, negative ageism, reflects negative attitudes towards older adults (items 3, 10, 11, 15, 16, 18). A 5-point Likert scale is used to rate the items: "strongly disagree," "disagree," "undecided," "agree," and "strongly agree."

1.8.4 Undergraduate nursing student

Conceptual definition: Defined as an individual who is currently enrolled in a Bachelor of Nursing course at a university (Van Den Dungen, 2021).

Operational definition: In this study, a nursing student refers to an undergraduate enrolled in the Bachelor of Nursing program at UNIMAS who is pursuing their first nursing degree.

1.9 Summary

In conclusion, this chapter has addressed the study's context, the problem statement, and its importance. The objective is to comprehend the significance and purpose of conducting this research among undergraduate nursing students at UNIMAS. The next chapter presents a literature review on knowledge and attitudes related to older adults' care and its relation to ageism attitudes.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

An extensive review of the body of research on ageism attitudes will be given in this chapter. The study will specifically investigate the attitudes and knowledge of students of nursing students regarding age discrimination in the care of older adults. The literature review demonstrated how ageism in attitudes towards older adults' care can lower older adults' quality of life. The articles incorporated into this literature review have been sourced from reputable platforms, including Google Scholar, ResearchGate, and PubMed. Additionally, to ensure currency, the literature spans the past ten years, from 2014 to 2024. Moreover, to provide rigorous research, it is essential to evaluate the quality of studies by assessing their methodology, sample size, reliability, and validity while prioritizing those with robust methods and significant findings. The keywords used are knowledge of older adults' care, attitudes towards older adults, and nursing students.

2.1 Knowledge of older adults' care among nursing students

Knowledge of older adult care is a critical component of nursing education, as older adults present with unique healthcare needs, including complex comorbidities and geriatric syndromes. With the global population ageing rapidly, the need for specialised, age-sensitive care is becoming increasingly urgent. Chronic conditions such as diabetes, hypertension, and arthritis are highly prevalent in older adults, making their care more complex and demanding. According to the National Council on Ageing (2024), nearly 80% of adults over the age of 60 have two or more chronic conditions, and 95% have at least one. Additionally, geriatric syndromes like polypharmacy, cognitive impairment, and decreased mobility

require nurses to be particularly adept at recognising and managing age-related issues. This highlights the critical need to prepare nursing students with the essential knowledge and competencies required to deliver effective and age-appropriate care to older adults.

Several studies have demonstrated that nursing students are capable of acquiring strong foundational knowledge in geriatric care. For example, Faronbi et al. (2017) conducted a cross-sectional study in Nigeria involving female nursing students aged 21 to 25 and found that 60% of the participants possessed good knowledge of essential clinical practices in older adult care. This finding suggests that nursing students, when exposed to appropriate training, can develop a solid understanding of older adults' healthcare needs. Similarly, Kaur et al. (2014) assessed the knowledge of 267 undergraduate nursing students at the National Institute of Nursing Education using a 28-item multiple-choice questionnaire. Their results showed that 76.4% of students demonstrated good knowledge, with an average score of 22.10 (± 2.91). These findings reinforce the idea that structured education and assessment tools can foster a high level of preparedness in caring for the ageing population.

In contrast, other studies highlight significant knowledge deficits among nursing students, which can hinder the delivery of effective geriatric care. Mohammed et al. (2019) conducted a descriptive study at Minia University with 320 nursing students and found that 72.8% answered incorrectly on a 28-item knowledge questionnaire. The results pointed to widespread gaps in understanding, and the authors noted that this lack of knowledge was associated with negative attitudes toward older adults. One of the study's key limitations was the absence of a dedicated geriatric nursing course, with elderly care content being integrated into general medical-surgical subjects. This diluted approach may have contributed to students' poor knowledge and preparedness. As Aishi et al. (2020) suggest, establishing gerontology as a distinct nursing specialty and offering evidence-based geriatric education

could help reduce negative stereotypes and improve both knowledge and attitudes toward older adults. The study called for further research into the factors influencing nursing students' perceptions, as understanding these variables is key to designing effective educational interventions.

Further supporting these concerns, Hassan et al. (2021) examined students' knowledge in Fakous City and found similarly poor results. The study sampled 180 students from two different nursing schools and used the Palmore Facts on Aging Quiz, a widely used true/false questionnaire. Results revealed that 77.8% of the students had unsatisfactory knowledge about elderly care. Like Mohammed et al. (2019), Hassan et al. attributed this gap to the lack of a dedicated geriatric curriculum, noting that content related to ageing was spread thinly across other courses. When elderly care is not prioritised within the curriculum, students may not receive comprehensive or focused instruction, leaving them inadequately prepared for real-world practice. These results align with other research pointing to systemic weaknesses in nursing education regarding gerontology.

Adding to this body of evidence, Rababa et al. (2023) conducted a study in Jordan involving 290 nursing students and found that many had limited knowledge about ageing, which contributed to ageist attitudes. The authors noted that improving understanding is a critical step in addressing negative perceptions. Similarly, Mohamed et al. (2023) used a mixed methods design to assess knowledge and attitudes among 90 nursing professionals and students in Canada. While fewer than half of the participants (37.8%) had an average understanding of older adult care, 62% reported that their nursing education significantly influenced their willingness and competence to care for older adults. These findings illustrate the impact of structured education on shaping both knowledge and attitudes. However, they

also show that significant gaps remain, particularly in programs that do not prioritise gerontological content.

Collectively, these studies demonstrate a divergence in nursing students' knowledge of older adult care, while some possess strong foundations, others lack essential understanding due to curricular limitations and insufficient focus on geriatric topics. The consequences of poor knowledge can extend beyond attitudes, potentially resulting in suboptimal care for older patients. A lack of understanding may perpetuate stereotypes and ageist beliefs, ultimately affecting the quality and equity of healthcare delivery. Therefore, nursing programs must incorporate comprehensive, stand-alone gerontology courses, supported by practical exposure and empathy-building strategies, to ensure students are fully prepared to meet the complex needs of an ageing population.

2.2 Attitude of nursing students towards older adults

Attitude is an inclination to react favourably or unfavourably to a particular concept, individual, situation, or object (Aishi et al., 2020). Attitudes towards older adults play an important role in healthcare since they significantly impact the quality of care offered. Positive attitudes among healthcare professionals (HCPs) can enhance patient interactions, improve treatment outcomes, and foster a supportive environment for older patients. Conversely, negative attitudes, often rooted in ageism, can lead to inadequate care and increased vulnerability for older adults (Jeyasingam et al., 2023; Palsgaard et al., 2022).

A study by Ismail et al. (2024) at a public university in Kuala Lumpur found that 88.2% of nursing undergraduate students held positive views towards providing care to older adults. A significant correlation ($p\text{-value} = 0.015$) was observed between students' attitudes and their academic year. Specifically, fourth-year students had the highest mean attitude

scores, suggesting that as nursing students progress in their studies, they develop more positive attitudes toward older adult care, potentially reducing ageism. Similarly, a study by Yilmaz et al. (2017) in Turkey involving nursing students and those from the Elderly Care Program showed that students generally had favourable views toward older adults. Notably, nursing students outperformed students in the Elderly Care Program on the Ageism Attitudes Scale and like Ismail et al. (2024), the study indicated that positive attitudes toward older adults tended to improve with higher academic years, with third-year nursing students scoring higher than first- and second-year students, as well as those in the Elderly Care Program.

Ridgway et al. (2018) discovered that at the start of a nursing program, 75% of participants held moderately positive attitudes toward older adults. By the end of the three-year program, this figure had risen significantly, with 98% of participants displaying positive attitude scores, highlighting the considerable influence of the educational experience on changing attitudes toward older adults. In another study, Darling et al. (2018) assessed Turkish nursing students' attitudes and found that they generally exhibited slightly positive attitudes towards elders, with an overall mean score of 122.99 (SD = 11.5) on a scale where higher scores indicate more positive attitudes. The average negative item score was 58.27 out of 102, whereas the average positive item score was 60.56 out of 102, indicating that overall attitudes towards older adults were good.

Mohammed et al. (2019) emphasised that negative attitudes and misunderstandings among nurses have a substantial effect on the standard of care given to older adults. The study found that 82.8% of participants showed negative attitudes toward ageism, according to the Ageism Attitude Scale. Interestingly, the data revealed that males and urban residents scored higher on the scale, indicating more pronounced negative attitudes compared to

females and rural residents. This finding suggests that demographic factors such as gender and place of residence may influence attitudes toward older adults, potentially affecting the quality of care these populations receive. Rababa et al. (2021) conducted a study in Japan, which highlighted the prevalence of ageist attitudes among nursing students. The research found that a significant number of nursing students not only held ageist attitudes but also exhibited ageist behaviours toward older adults. Specifically, 66.9% of students agreed with the statement that "old people should find friends their age," reflecting a discriminatory outlook on older adults' social interactions. Additionally, 31.6% of students supported the sentiment that "older adults should reside in areas where they won't disturb others," illustrating exclusionary views that suggest a reluctance to engage with older individuals. These findings highlight the degree to which ageist attitudes can influence students' perceptions and treatment of older adults, potentially impacting the quality of care they will provide as future healthcare professionals.

Saharuddin and Makhtar (2022) reported that 90.1% of participants displayed negative attitudes, while only 9.9% showed positive attitudes, with a mean score of 154.3 ± 17.4 . This suggests that stereotypes and misconceptions about aging contribute to these negative perceptions. Similarly, Frost et al. (2016) found that 97.8% of nursing students reported engaging in at least one ageist behaviour, highlighting the widespread nature of ageism within this group. Such behaviours can adversely affect the quality of care, shape the learning environment, and perpetuate ageism within the nursing profession. In conclusion, nursing students' attitudes towards older adults reflect a mix of positive and negative tendencies, which has important implications for healthcare quality and care provided to older populations.

2.3 Relationships between knowledge of older adults' care and ageism attitudes among nursing students

Numerous research studies examined the connection between ageist attitudes and knowledge about the care of older adults. According to Faronbi et al. (2017), there is no significant correlation between nursing students' attitudes toward older adults and their knowledge of the care. Additionally, there was no statistically significant correlation between knowledge and attitudes, according to the chi-square test ($p > 0.05$). This suggests that attitudes towards older individuals may not always become more favourable or helpful, even when nursing students are knowledgeable about their care. The findings suggest that views towards older adults can be impacted by a variety of circumstances, and that education alone may not be sufficient to change these opinions.

On the other hand, Mohammed and Abdel Aziz (2019) found a strong positive correlation between the nursing students' attitudes toward ageism and their knowledge of older adults' care. According to their findings, more favourable attitudes were correlate with higher knowledge levels, implying that knowledge could reduce ageism. $R = 0.10$ was determined by applying the Pearson correlation coefficient to determine the direction and intensity of the relationship between knowledge and attitudes. This shows that raising students' understanding of ageing and older adults' care could help them develop better attitudes toward older adults and lessen their negative perceptions of them.

These results demonstrate the complexity of the connection between attitudes and knowledge about older adults. Although, Faronbi et al. (2017) discovered that knowledge alone did not have a direct impact on attitudes, Mohammed and Abdel Aziz (2019) found that higher knowledge levels were associated with a more positive attitude, emphasising the

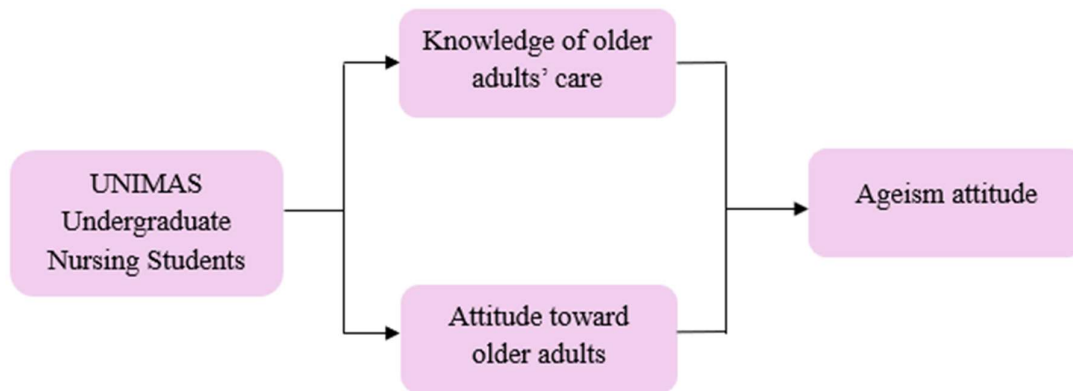
potential value of education and awareness in shaping future healthcare professionals' views on ageism.

2.4 Conceptual Framework

Knowledge of older adults' care encompasses nursing students' understanding of the physical, psychosocial, and cognitive needs of this population. This knowledge includes essential skills in physical care (such as mobility assistance, medication management, and nutrition), psychosocial support (including effective communication and empathy), and cognitive care (such as awareness of age-related cognitive changes). Nursing students typically acquire these competencies through the curriculum, hands-on practicum experiences, and specific modules dedicated to geriatric care. However, knowledge alone may not be sufficient to reduce ageist attitudes toward older adults. To effectively counter negative beliefs, stereotypes, and biases that can impact their approach, students must also foster positive attitudes toward older adults. Attitudes toward older adults' care can be shaped positively or negatively, often influenced by underlying beliefs about the outcomes of their actions. A robust knowledge base in older adult care can mitigate ageist attitudes by increasing students' empathy and deepening their understanding of older adults' needs. Therefore, ageist views among student nurses are expected to decrease as their understanding of the care of older individuals grows, leading to a more positive and compassionate approach to older adult care.

Figure 2.1

Conceptual Framework.



2.5 Summary

Understanding the knowledge and attitudes of nursing students toward older adults' care is crucial for developing effective strategies to reduce ageist attitudes among undergraduate nursing students. While many studies have been done internationally and locally on the knowledge and attitudes of various groups, such as healthcare providers, caregivers, and other students, there are very few studies focusing on nursing students in Malaysia. This gap highlights the importance of studying these factors among nursing students, particularly at Universiti Malaysia Sarawak (UNIMAS), to understand their preparedness for caring for the growing older adult population in Malaysia. Conducting this study will help assess the knowledge and attitudes of UNIMAS undergraduate nursing students regarding older adults' care. Subsequent actions can be taken to enhance educational programs, thereby promoting a more informed and positive outlook on older adults' care within the nursing profession. A comprehensive approach is required to strengthen nursing

students' understanding and attitudes, ensuring they are equipped to meet the needs of older adult patients. Hence, improving both their knowledge and their attitudes toward older adults is key to reducing ageism and ensuring that the needs of older patients are met with respect and understanding.

CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter describes the overall methodology for the research, divided into several sections: research design, research setting, population, sampling (sampling method and sample size), research instrument, ethical considerations, pilot study, data collection procedure, and data analysis methods.

3.1 Research design

This study used a quantitative, cross-sectional approach to explore the relationship between UNIMAS undergraduate nursing students' attitudes toward ageism and their knowledge of older adults' care. Quantitative research involves gathering and analyzing numerical data to gain a deeper understanding of specific phenomena or events (Alek, 2023). This strategy was chosen because it was cost-effective and time-efficient, allowing researchers to collect and analyse data from the entire population at the same time (Wang & Cheng, 2020). Participants were selected based on the criteria for inclusion and exclusion of the study. As a result, a cross-sectional study design was chosen since it met both the research aims and the study's practical restrictions.

3.2 Research Setting

This study was conducted at the FMHS, UNIMAS, in Kota Samarahan, Sarawak, Malaysia. The target population of this study comprised undergraduate nursing students from each batch, specifically from Year 1 to Year 4 at FMHS, UNIMAS, totalling 234 students.

3.3 Inclusion and Exclusion Criteria

The selection of the sample for this research was defined by the inclusion and exclusion criteria below. To fulfil the research's objectives, participants had to satisfy the requirements.

3.3.1 Inclusion Criteria

This study included undergraduate nursing students enrolled at UNIMAS from their first to fourth year, as well as those who were willing to participate.

3.3.2 Exclusion Criteria

This study excluded nursing students who participated in the pilot study, those unwilling to engage in the study, and post-registration nursing students.

3.4 Sampling

3.4.1 Sampling Method

Sampling was the process of determining a subset of a target population for a study (Turner, 2020). This selection method ensured that each member of the population had an equal opportunity to take part in the study through an unbiased procedure (Simkus, 2023). This method was frequently employed in quantitative research using survey instruments (Noor et al., 2022). Furthermore, simple random sampling was designed to reduce bias and provide a more objective and accurate representation of the population under research (Feldman, 2018). For this study, simple random sampling was applied to examine the entire population of undergraduate nursing students at UNIMAS, explicitly focusing on their knowledge of older adults' care and attitudes toward ageism. The sampling process included all nursing students from Year 1 to Year 4. The simple random sampling process began by obtaining a list of nursing students from the FMHS UNIMAS academic office. Students who

met the requirements for inclusion were selected to take part in the study. Random numbers were generated using the randomizer website, and participants of each cohort were selected to complete the questionnaire after being assigned numbers in alphabetical order for selection purposes.

3.4.2 Sample Size

This research used the Taro Yamane Formula (1973) to calculate the sample size. The sample size calculations were as follows:

$$n = \frac{N}{1 + Ne^2}$$

n = sample size

N = population size

E = error (0.05) reliability level 95%

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{234}{1 + (234)(0.05)^2}$$

$$= 147 \text{ participants}$$

Based on this formula, the estimated sample size for this study was 147 participants. However, the researcher had to consider participants' compensation, such as those who refused to participate; therefore, the researcher added 10% to the sample size (Das et al., 2016). To compensate for missing data in the sample, an additional 10% attrition rate was added. The calculation was as follows:

Calculation of sample size with attrition rate:

$$\text{Final sample size} = \text{sample size} + (\text{sample size} \times 10\%)$$

$$= 147 + (147 \times 10\%)$$

$$= 162 \text{ participants}$$

In conclusion, a total of 162 participants were needed in this study.

3.5 Research Instrument

The researcher utilised a structured study instrument to collect the necessary data for this research assignment. To ensure accessibility and convenience during the distribution process, a printed version of the questionnaire was employed. This decision aimed to facilitate a more direct and seamless data collection process through in-person interactions, while also accommodating the varying levels of technological proficiency among the target population.

The questionnaire comprised items adapted from two well-established instruments: the Knowledge of Older Adults' Care developed by Kaur et al. (2014) and the Ageism Attitude Scale (AAS) developed by Yilmaz and Terzioğlu (2011). The adaptation process involved a thorough assessment of the original questionnaires to identify sections and items most relevant to the main focus of this study—namely, the relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students. To ensure cultural and academic appropriateness for students at Universiti Malaysia Sarawak (UNIMAS), necessary modifications were made. Additionally, written consent from the original authors was obtained to ensure the ethical use and adaptation of the instruments.

The questionnaire was organised into three main sections to allow for systematic and coherent data collection. Section A focused on the socio-demographic characteristics of the

participants, including age, gender, academic year, religion, whether they had family members working in the healthcare field, and the number of family members living with them (including themselves). This section provided a demographic overview of the sample and allowed for the identification of potential correlations or trends across variables.

Section B assessed participants' knowledge of older adults' care using 28 items from the Knowledge of Older Adults' Care instrument. Responses were measured on a dichotomous scale (1 = Yes, 0 = No). This version of the questionnaire, further developed by Mohammed and Abdel Aziz (2019), demonstrated good reliability with a Cronbach's alpha value of 0.91.

Section C employed the Ageism Attitude Scale (AAS), which consisted of 23 items categorised into three components. The first component, Restricting the Life of Older Adults, reflected societal beliefs about limiting the social lives of older adults (items 1, 5, 12, 14, 17, 19, 21, 22, and 23). The second component, Positive Ageism, measured positive societal attitudes toward older adults (items 2, 4, 6, 7, 8, 9, 13, and 20). The third component, Negative Ageism, covered negative societal perceptions of older adults (items 3, 10, 11, 15, 16, and 18). Responses were rated on a 5-point Likert scale. For positive attitude statements, the scoring was: 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, and 1 = Strongly Disagree. For negative attitude statements, the scale was reversed: 1 = Strongly Agree to 5 = Strongly Disagree. The Cronbach's alpha for the AAS was 0.819, indicating good internal consistency.

3.6 Ethical Consideration

Ethical approval for this study was obtained from the Research Ethics Committee, FHMS, UNIMAS. Prior to their participation, participants were asked for their formal

informed consent, and they were free to leave the study at any moment without facing any penalties or consequences. A formal letter of consent was also emailed to the author to request permission to use the questionnaire tools employed in this research. Each questionnaire distributed to participants included a cover letter explaining the study's purpose, objectives, data collection confidentiality, and participant consent. All data collected were used exclusively for research purposes, and the confidentiality of participants' responses was strictly maintained. Access to the data was restricted to the supervisor and researcher. Any publication or presentation of the findings ensured that no individual participant was identified. Efforts were made to ensure that the study was carried out objectively and ethically, with no bias that could impact the findings. The data were maintained for five years only.

3.7 Data Collection Procedure

3.7.1 Pilot Study

A pilot study was conducted prior to the actual data collection to examine the validity and reliability of the research instrument (Sundram & Romli, 2023). These two concepts are fundamental in quantitative research, as they ensure the accuracy and consistency of the findings. Reliability refers to the consistency and reproducibility of results, while validity pertains to the extent to which an instrument accurately measures the concept it is intended to measure. Ensuring both reliability and validity is essential for producing high-quality research, as it increases confidence in the study's results and conclusions (Abbas, 2023).

In addition to assessing validity and reliability, the pilot study also evaluated the feasibility and effectiveness of the overall research design, including the data collection tools and methodology, before the full-scale study was carried out (Simkus, 2023). This process

was critical in identifying potential challenges, refining research procedures, and implementing necessary adjustments to enhance the study's quality and efficiency (Daud et al., 2018).

To assess validity, this study employed content validity, which, according to Yusoff (2019), refers to the degree to which a measurement instrument accurately represents the intended construct. Content validity is considered essential in validating research tools such as questionnaires. The pilot study provided valuable feedback that helped improve the clarity and practicality of the instrument. Participants' responses also indirectly contributed to the refinement of the questionnaire content, thereby strengthening its content validity. As part of this process, a nursing expert with professional and academic experience, who also served as the study supervisor, reviewed the questionnaire to ensure its content validity.

To assess reliability, Cronbach's alpha was used to evaluate the internal consistency of the research instrument. Based on Daud et al. (2018), Cronbach's alpha values between 0.60 and 0.80 are considered moderate but acceptable, while values between 0.80 and 1.00 indicate high reliability. By confirming both the validity and reliability of the instrument, the pilot study contributed to the overall strength of the main research.

According to Whitehead et al. (2016), a pilot study typically involves around 10% of the intended sample size. Given that the total sample size for this study was 162 participants, approximately 16.2 individuals were required for the pilot. To meet this benchmark, 16 nursing students who fulfilled the inclusion criteria were selected. These participants were not included in the main study, and their data were excluded from the final analysis to avoid any bias.

The Cronbach's alpha score for the Knowledge of Older Adults' Care instrument was 0.68, indicating moderate reliability. For the Ageism Attitude Scale (AAS), the internal consistency scores were as follows: Restricting the Life of Older Adults = 0.701, Positive Ageism = 0.701, and Negative Ageism = 0.724. These values suggest acceptable levels of reliability across all subscales.

Table 3.1

Cronbach's Alpha Test Results.

Reliability Statistics		
	Cronbach's Alpha	Number of Items
Knowledge of Older Adults' Care	0.68	28
Ageism Attitude Scale	Restricting the Life of Older Adults: 0.701	9
(AAS)	Positive Ageism: 0.701	8
	Negative Ageism: 0.724	6

3.7.2 Actual Study

This study employed a simple random sampling method to select participants from the target population. A list of nursing students from Year 1 to Year 4 was obtained from the academic office of the FMHS, UNIMAS. Using a randomiser website, random numbers were generated, and participants were selected alphabetically within each cohort. The first 162 names from the randomised list who met the inclusion criteria were chosen for the study.

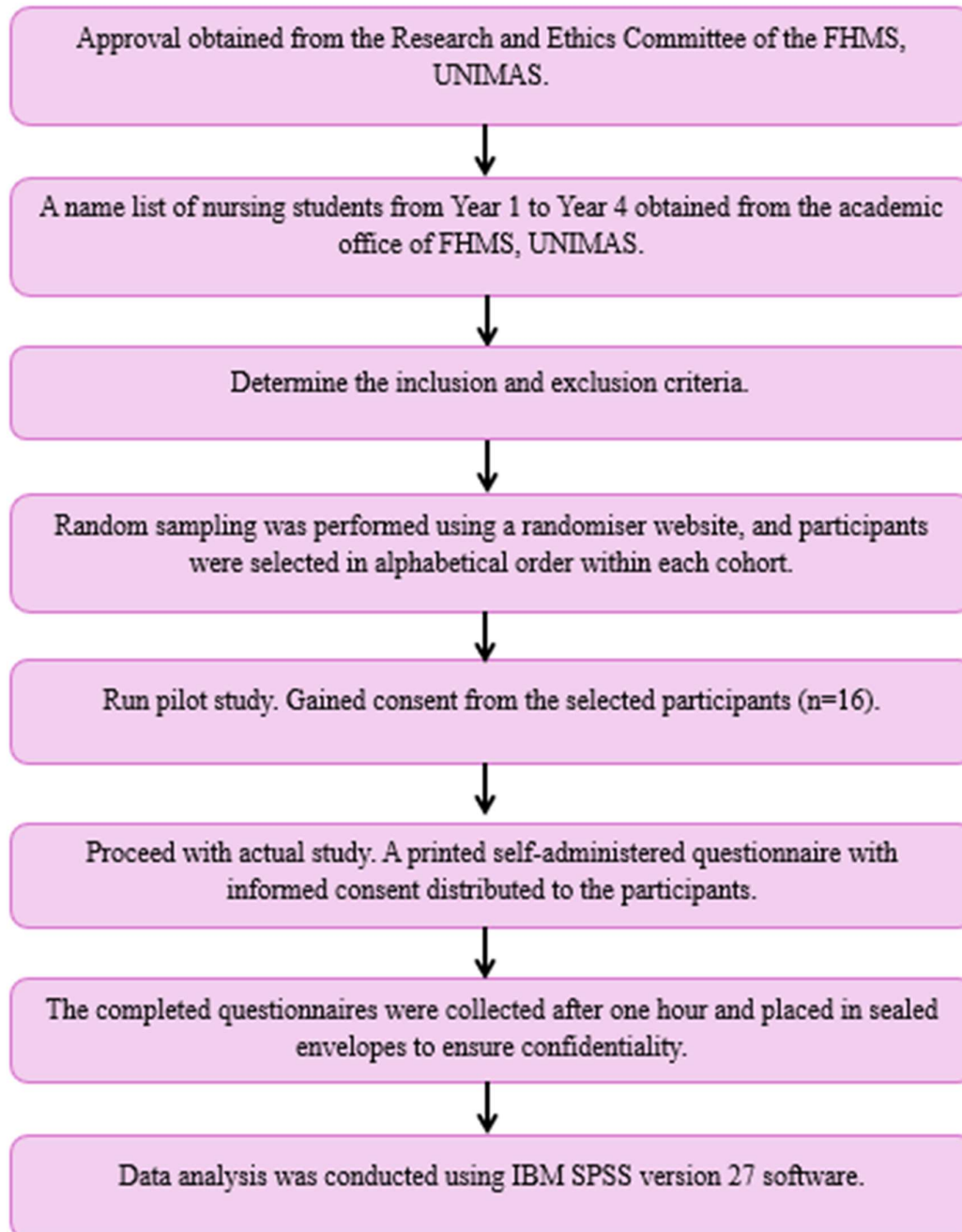
A printed, self-administered questionnaire developed in English was used for data collection, with all items marked as mandatory. The researcher distributed the questionnaires to the class representatives of Year 1 to Year 4, who then handed them to the selected

participants. After approximately one hour, the completed questionnaires were collected and secured in sealed envelopes to maintain confidentiality.

Prior to participation, each respondent was required to provide informed consent by ticking “agree” on the first page of the questionnaire, indicating their voluntary participation in the study. Refusal to provide consent was treated as a decision to withdraw from the study. The consent form also included the researcher's contact number at the bottom, allowing participants to seek clarification regarding any aspect of the questionnaire if needed. Upon completion of data collection, all responses were analysed using IBM SPSS Version 27. To facilitate a clearer understanding, the entire data collection procedure was illustrated in a flowchart (see Figure 3.1), offering a visual summary of the implementation process.

Figure 3.1

Data Collection Procedure.



3.8 Data Analysis

The data gathered in this study were analysed using the IBM Statistical Package for the Social Sciences (SPSS) Version 27. Both descriptive and inferential statistical methods were applied to examine the collected data.

Descriptive statistics were used to analyse the participants' socio-demographic characteristics, as well as their knowledge of older adults' care and attitudes towards ageism. In Section A, variables such as gender, academic year, race, religion, whether any family members are working in the healthcare setting, and the number of family members living with the respondent (including themselves) were classified as categorical data and analysed using frequencies and percentages. Age was treated as a continuous variable and summarised using the median (*Mdn*) and interquartile range (*IQR*).

Inferential statistics were employed to assess the relationship between knowledge of older adults' care and attitudes towards ageism. The total scores for knowledge and attitude were treated as continuous data and were reported as means and standard deviations if normally distributed, or as medians and interquartile ranges (*IQR*) if not. The Kolmogorov-Smirnov test was used to assess the normality of the continuous variables, as the sample size exceeded 50 participants. If the p-value was less than 0.05, it was considered statistically significant and did not follow a normal distribution. However, it was considered not statistically significant and was assumed to follow a normal distribution if the p-value was greater than 0.05 (Beers, 2024).

The aim of the study was to examine the relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students at UNIMAS. The normality test revealed that the data were not normally distributed. As a result, a non-

parametric test was deemed appropriate. Preliminary analyses confirmed the violation of normality assumptions, and no outliers or extreme values were identified based on the box plot. Therefore, the Spearman's rank-order correlation test (Spearman's rho) was used to determine the association between the two variables. According to Purba et al. (2023), a correlation coefficient (r) between 0.01 and 0.19 indicates a negligible relationship; 0.20 to 0.29, a weak relationship; 0.30 to 0.39, a moderate relationship; 0.40 to 0.69, a strong relationship.

Table 3.2

Normality Test for the Total Score of the Knowledge and Attitude.

	Kolmogorov-Smirnov ^a Sig.	Interpretation
Total knowledge score	<.001	Not normally distributed
Total attitude score	<.001	Not normally distributed

3.9 Summary

This study employed a cross-sectional quantitative research design involving undergraduate nursing students from year 1 until year 4 at the Faculty of Medicine and Health Sciences, UNIMAS. The study's participants were selected according to the inclusion and exclusion criteria outlined in the chapter. Simple random sampling was employed and computed utilizing the Yamane formula (1973). The sample size comprised approximately 162 participants, accounting for the attrition rate. This study instrument consisted of three sections, with the printed self-administered questionnaire distributed to participants. Ethical approval was obtained prior to any data collection. Data in this study were analysed using IBM SPSS version 27, implementing both descriptive and inferential statistics.

CHAPTER 4

RESULTS

4.0 Introduction

This chapter present the result obtained from 162 undergraduate nursing students in UNIMAS. All the result were acquired based on the research objectives of the study which were to assess the level of knowledge of older adults' care, to assess the attitude of undergraduate nursing students toward older adults, and to examine the relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS. Section 4.1 presents the response rate, and Section 4.2 presents the data cleaning of the study. Section 4.3 presents the outliers or extreme values. Section 4.4 presents the normality test for the continuous variables. Section 4.5 presents the socio-demographic characteristics of the undergraduate nursing students in UNIMAS. Section 4.6 presents the knowledge of undergraduate nursing students towards older adults' care in UNIMAS. Section 4.7 presents the attitude of undergraduate nursing students in UNIMAS toward ageism. Section 4.8 presents the relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS. Section 4.9 presents the summary of this chapter.

4.1 Response rate

A total of 162 UNIMAS undergraduate nursing students were approached randomly and were administered physical questionnaires. All 162 participants had completed and returned the questionnaires, yielding a 100% response rate.

4.2 Data cleaning

Data cleaning was conducted prior to analysis. No missing values or duplicate data were detected, and all participants met the inclusion and exclusion criteria of the study.

4.3 Outliers or extreme values

There are no outliers or extreme values detected from the box plot for age of participants, knowledge of older adults' care, and attitude towards ageism among UNIMAS undergraduate nursing students.

4.4 Socio-demographic characteristics of the undergraduate nursing students in UNIMAS

Based on Table 4.1, out of 162 undergraduate nursing students, the majority were female, with 132 participants (81.5%) compared to 30 male participants (18.5%). The median age of the participants was 22 years old, with an interquartile range (IQR) of 6 years. The highest number of students were aged 21 and 23 years old (n=38 each, 23.5%), followed closely by 22 years old (n=36, 22.2%), and the least were aged 26 years old (n=2, 1.2%). In terms of race, most participants were Malay (n=67, 41.4%), followed by Bumiputera Sarawak (n=54, 33.3%), Bumiputera Sabah (n=34, 21.0%), Chinese (n=6, 3.7%), and Indian (n=1, 0.6%). Regarding religion, most participants identified as Muslim (n = 93, 57.4%) and Christian (n = 68, 42.0%), while one participant identified as Hindu (0.6%), and none reported being Buddhist. A total of 55 participants (34.0%) reported having family members working in the healthcare sector, while 107 (66.0%) did not. Regarding household size, most participants lived in households of 4–6 people (n=99, 61.1%), followed by 7–9 people (n=37, 22.8%), 1–3 people (n=24, 14.8%), and a small number in households of 10 or more (n=2, 1.2%).

Table 4.1*Socio-Demographic Variables of UNIMAS Undergraduate Nursing Students (n=162).*

Characteristics	n	%	Mdn	IQR
Age				
20 years old	29	17.9	22.00	6
21 years old	38	23.5		
22 years old	36	22.2		
23 years old	38	23.5		
24 years old	16	9.9		
25 years old	3	1.9		
26 years old	2	1.2		
Gender				
Male	30	18.5		
Female	132	81.5		
Race				
Malay	67	41.4		
Chinese	6	3.7		
India	1	0.6		
Bumiputera Sarawak	54	33.3		
Bumiputera Sabah	34	21.0		
Religion				
Islam	93	57.4		
Christian	68	42.0		
Hindu	1	0.6		
Any family members are working in the healthcare setting?				
Yes	55	34.0		
No	107	66.0		
How many family members are living				

**with you? (Including
yourself)**

	24	14.8
1-3	99	61.1
4-6	37	22.8
7-9	2	1.2
10 and above		

Note: n: Frequency, %: Percentages, *Mdn*: Median, *IQR*: Interquartile range

4.5 The knowledge of undergraduate nursing students towards older adults' care in UNIMAS.

Table 4.2 presents the findings on the level of knowledge regarding older adults' care among 162 undergraduate nursing students at UNIMAS. Overall, the results indicate that most students demonstrated a high level of knowledge, with more than 90% answering correctly on the majority of items. For example, 157 (96.9%) agreed that a daily fluid intake of 1500–2000 ml is recommended for older adults, and 161 (99.4%) correctly identified deep breathing exercises to maintain respiratory function. Similarly, high correct response rates were seen in areas such as recognizing cognitive abilities commonly decline with age (96.9%, n=157), understanding urinary continence management (95.7%, n=155), and recognizing the risk of orthostatic hypotension (94.4%, n=153).

However, there were notable gaps in specific areas, particularly in questions where the correct answer was "No." For example, in Question 4, which falsely claims that the Mini-Mental State Exam evaluates emotional stability and personality, 151 students (93.2%) answered "Yes," which was incorrect. Likewise, in Question 11, 154 students (95.1%) incorrectly believed that fish oil and vitamin E are proven to prevent Alzheimer's disease. The most concerning result was Question 16, where only 71 students (43.8%) correctly answered "No" to the false claim that sensory aids and communication adjustments have no effect, indicating a serious misconception held by 91 students (56.2%). Similarly, 157

students (96.9%) incorrectly responded “Yes” to Question 18, which falsely states that malnutrition and bedsores are always signs of neglect, and 147 students (90.7%) incorrectly believed that the iliac crest and ischial tuberosities are the most common pressure sore sites in older adults (Question 26).

Table 4.2

Descriptive Knowledge of Older Adults’ Care Questionnaire’s Component Among Undergraduate Nursing Students in UNIMAS (n=162).

Knowledge	n (%)	
	Yes	No
1. Is a daily fluid intake of 1500–2000 ml/day recommended for older adults unless contraindicated?	157 (96.9)	5 (3.1)
2. Do cognitive abilities like short-term memory and attention span commonly decline with ageing?	157 (96.9)	5 (3.1)
3. Can balance exercises prevent falls among older adults?	156 (96.3)	6 (3.7)
4. The Folstein Mini-Mental Status Exam primarily focuses on evaluating emotional stability and personality traits in older adults through tasks involving memory, language, and orientation.	151 (93.2)	11 (6.8)
5. Is orthostatic hypotension a common health issue among older adults that increases with age?	153 (94.4)	9 (5.6)
6. The basal metabolic rate declines with ageing due to the loss of lean muscle mass.	157 (96.9)	5 (3.1)
7. Health needs and physical examinations of older adults are different from other age group populations.	157 (96.9)	5 (3.1)
8. The Get-Up-and-Go Test is used to assess balance and the risk of falls in older adults.	151 (93.2)	11 (6.8)

9.	Older adults with diabetes, heart disease, thyroid disorders, and hypertension have a higher risk of experiencing adverse effects from herbal remedies.	141 (87.0)	21 (13.0)
10.	A person is considered an older adult at the age of 65 or older.	150 (92.6)	12 (7.4)
11.	Fish oil and vitamin E are two basic nutrients that help prevent the progression of Alzheimer's disease.	154 (95.1)	8 (4.9)
12.	The average recommended caloric intake for older adults is 25-28 Cal/kg/day.	124 (76.5)	38 (23.5)
13.	Nursing care for health promotion in older adults is primarily focused on providing a sense of control over health problems.	143 (88.3)	19 (11.7)
14.	Care for older adults with altered sensory perception can be enhanced by minimizing background noise, speaking clearly at a normal volume and slower pace, and incorporating nonverbal cues when appropriate.	154 (95.1)	8 (4.9)
15.	Urinary continence in older adults can be regained by performing Kegel exercises and following a toileting schedule.	155 (95.7)	7 (4.3)
16.	Using sensory aids and allowing extra time for communication have no significant effect on improving communication with older adults.	91 (56.2)	71 (43.8)
17.	When checking the blood pressure of older adults, the nurse needs to know that systolic blood pressure tends to rise with ageing due to the loss of elasticity in the arteries.	155 (95.7)	7 (4.3)
18.	Malnutrition, bedsores, and poor hygiene are always signs of neglect in older adults, regardless of underlying medical conditions or personal circumstances.	157 (96.9)	5 (3.1)
19.	Walking for 30 minutes, three days per week, is the most recommended exercise for older adults to maintain their health.	153 (94.4)	9 (5.6)
20.	Osteoporosis can be prevented among older adults by adequate intake of calcium, regular exercise,	160 (98.8)	2 (1.2)

and estrogen replacement therapy for elderly women.

21.	Nurses should teach hypertensive older adult patients on diuretics to encourage fluid intake, consume foods rich in potassium, and closely monitor for dehydration.	151 (93.2)	11 (6.8)
22.	Nurses should focus on non-verbal communication skills with older adults suffering from hearing deficits.	153 (94.4)	9 (5.6)
23.	Dehydration can be prevented in older adults by assessing skin turgor, mucous membrane and urine output.	159 (98.1)	3 (1.9)
24.	Adequate respiratory function can be maintained in older adults by instructing them in deep breathing exercises.	161 (99.4)	1 (0.6)
25.	Strategies such as reducing daytime napping, limiting caffeinated beverages, and using relaxation techniques can help promote a healthy sleep pattern for older adults.	158 (97.5)	4 (2.5)
26.	The anatomical areas most often affected by pressure sores in older adults are the iliac crest and ischial tuberosities.	147 (90.7)	15 (9.3)
27.	Keeping the skin clean and dry and ensuring that bed linens are wrinkle-free and dry can help prevent bedsores in older adults.	157 (96.9)	5 (3.1)
28.	The score that indicates mild depression in older adults, according to the Geriatric Depression Scale (GDS), is between 5 and 8.	150 (92.6)	12 (7.4)

Note: n: frequency, %: percentages

According to Table 4.3, the median total knowledge score was 23 (IQR = 2). As shown in Table 4.4, 69.8% (n=113) of students had satisfactory knowledge, while 30.2% (n=49) had unsatisfactory knowledge based on categorized score ranges.

Table 4.3

Median and IQR for the Total Score of Knowledge.

	<i>Mdn (IQR)</i>
Total Knowledge Score	23.00 (2)

Note: *Mdn*: Median, *IQR*: Interquartile range

Table 4.4

Classification of Knowledge Among Undergraduate Nursing Students in UNIMAS (n = 162).

Knowledge Score	n	%
Satisfactory knowledge (24 ± 2)	113	(69.8%)
Unsatisfactory knowledge (21 ± 3)	49	(30.2%)
Median score of knowledge	23 ± 2	

Note: n: Frequency, %: Percentages

4.6 The attitude of undergraduate nursing students in UNIMAS toward older adults.

In the Restricting the Life of Older Adults dimension, many students disagreed with limiting older adults' roles. For instance, 71 (43.8%) disagreed that older adults should be paid less than younger people, and 69 (42.6%) disagreed with giving hospital care priority to younger individuals. In addition, 65 (40.1%) disagreed with the idea that older adults who lost their spouses should not remarry. However, 87 (53.7%) were undecided about whether the appearance of older adults is repulsive, showing hesitation or neutrality in that belief.

In the Positive Ageism dimension, students generally expressed respectful and supportive views. 104 (64.2%) agreed that older adults should be shown importance by their family members, 106 (65.4%) agreed that young people should learn from their experiences, and 96 (59.3%) agreed that older adults' opinions should be considered in family decision-making. Despite this, many remained undecided, such as 78 (48.1%) on whether older adults are more tolerant, and 71 (43.8%) on whether they are more compassionate.

In the Negative Ageism dimension, most students rejected common ageist stereotypes. For example, 55 (34.0%) disagreed with giving job promotion priority to younger individuals, and 47 (29.0%) disagreed with the belief that older adults should not go outside alone. However, a significant portion of participants were undecided, such as 52 (32.1%) on job promotions, 59 (36.4%) on older adults' ability to adapt to change, and 50 (30.9%) on the belief that older adults are always ill—indicating uncertainty in some negative perceptions.

Table 4.5

Descriptive of the attitude of undergraduate nursing students in UNIMAS toward older adults (n=162).

Statements		n (%)				
Restricting The Life of Older Adults		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.	The external appearance of older adults is repulsive.	26 (16)	20 (12.3)	87 (53.7)	27 (16.7)	2 (1.2)
2.	Family members	12 (7.4)	20 (12.3)	14 (8.6)	68 (42.0)	48 (29.6)

	should not consider the care of older adults to be an economic burden.					
3.	Older adults can't carry bags and packages without help.	9 (5.6)	18 (11.1)	47 (29.0)	68 (42.0)	20 (12.3)
4.	It is unnecessary for older adults to buy homes, cars, possessions, or clothes.	24 (14.8)	58 (35.8)	50 (30.9)	26 (16.0)	4 (2.5)
5.	Older adults should live in homes for the elderly.	30 (18.5)	56 (34.6)	53 (32.7)	16 (9.9)	7 (4.3)
6.	Daily activities of older adults should be limited to their homes.	18 (11.1)	60 (37.0)	42 (25.9)	34 (21.0)	8 (4.9)
7.	Older adults should be paid less than young people in their work lives.	35 (21.6)	71 (43.8)	38 (23.5)	13 (8.0)	5 (3.1)
8.	Preference should be given to care	34 (21.0)	69 (42.6)	41 (25.3)	12 (7.4)	6 (3.7)

for young
people over
older adults in
the hospital.

9.	Older adults who lose their spouses should not remarry.	48 (29.6)	65 (40.1)	41 (25.3)	7 (4.3)	1 (0.6)
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Positive Ageism		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.	Older adults are more tolerant than young people.	4 (2.5)	42 (25.9)	78 (48.1)	33 (20.4)	5 (3.1)
2.	Older adults are more compassionate.	4 (2.5)	14 (8.6)	71 (43.8)	62 (38.3)	11 (6.8)
3.	When decisions are made in the family, the opinions of the older adults should be considered.	0	6 (3.7)	24 (14.8)	96 (59.3)	36 (22.2)
4.	The older adults should be shown importance by the family members with whom they live.	0	4 (2.5)	17 (10.5)	104 (64.2)	37 (22.8)
5.	Older adults are more	5 (3.1)	40 (24.7)	73 (45.1)	32 (19.8)	12 (7.4)

patient than
young people.

6.	Young people should learn from the experiences of older adults.	0	3 (1.9)	22 (13.6)	106 (65.4)	31 (19.1)
7.	When the family budget is being developed, the opinions of older adults should be sought.	2 (1.2)	7 (4.3)	44 (27.2)	90 (55.6)	19 (11.7)
8.	Preference should be given to older adults in places where waiting in line is required.	3 (1.9)	2 (1.2)	40 (24.7)	81 (50.0)	36 (22.2)

Negative Ageism		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	Preference should be given to young people for promotions in work situations.	9 (5.6)	31 (19.1)	52 (32.1)	55 (34.0)	15 (9.3)
2.	Preference should be given to young people over	8 (4.9)	49 (30.2)	53 (32.7)	41 (25.3)	11 (6.8)

	older adults when hiring for jobs.					
3.	Older adults are not able to adapt to changes like young people.	10 (6.2)	41 (25.3)	59 (36.4)	46 (28.4)	6 (3.7)
4.	Older adults are always ill.	12 (7.4)	55 (34.0)	50 (30.9)	35 (21.6)	10 (6.2)
5.	Older adults should not go outside on their own.	14 (8.6)	46 (28.4)	46 (28.4)	47 (29.0)	9 (5.6)
6.	The basic responsibility of the older adults should be to help their children with tasks such as housework and kitchen chores, and care for their grandchildren.	14 (8.6)	45 (27.8)	52 (32.1)	34 (21.0)	17 (10.5)

Note: n: frequency, %: percentage

Based on Table 4.6 and 4.7, the overall median attitude score among undergraduate nursing students was 74 (IQR = 3). Out of 162 participants, 85 students (52.5%) demonstrated a positive attitude toward older adults, while 77 students (47.5%) showed a negative attitude. The estimated median score was 76 (IQR ± 2) for the positive group and 71 (IQR ± 3) for the negative group.

Table 4.6

Median and IQR for the Total Score of Attitude.

	<i>Mdn (IQR)</i>
Total Attitude Score	74 (3)

Note: *Mdn*: Median, *IQR*: Interquartile range

Table 4.7

Classification of Attitudes Among Undergraduate Nursing Students in UNIMAS (n = 162).

Ageism Attitude Scale (AAS)	n	%
Positive (76 ± 2)	85	(52.5%)
Negative (71 ± 3)	77	(47.5%)
Median score of attitudes	74 ± 3	

Note: n: frequency, %: percentages

4.8 The relationship between knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in UNIMAS.

The normality test indicated that the total scores for knowledge and attitudes were not normally distributed. Therefore, a non-parametric test which is the Spearman correlation coefficient was employed to examine the relationship between older adults' care and ageism attitudes. The Spearman's rho correlation showed a weak but statistically significant positive correlation between knowledge and attitude scores, $r_s(162) = .258, p = .001$. This result suggests that higher knowledge of older adults' care is weakly associated with more positive attitudes toward older adults among undergraduate nursing students at UNIMAS.

Table 4.8

The Relationship Between Knowledge of Older Adults' Care and Its Relation to Ageism Attitudes Among Undergraduate Nursing Students in UNIMAS (n=162).

Relationship		Knowledge	Attitude
Spearman's rho	Correlation	1.000	.258
	Coefficient		
	Sig. (2-tailed)		.001
	N	162	162
	Correlation	.258	1.000
	Coefficient		
	Sig. (2-tailed)	.001	
	N	162	162

4.9 Summary

In summary, the undergraduate nursing students at UNIMAS demonstrated a generally good level of knowledge and positive attitudes toward older adults. The association between knowledge and attitudes was analysed using Spearman's correlation coefficient, which identified a weak yet positive relationship between the two variables. This indicates that greater knowledge of geriatric care is modestly linked to more positive attitudes among the students.

CHAPTER 5

DISCUSSIONS

5.0 Introduction

This chapter discusses the study's results, which are presented in different sections based on the research objectives. In this chapter, the knowledge of older adults' care, attitude towards older adults and their relationship will be discussed further in detail. Furthermore, the main result will be summarized accordingly, and future recommendations will be discussed based on the implications of this study. Lastly, the encountered limitation throughout this study, and conclusion will be discussed at the end of this chapter. This study aimed to explore the relationship between undergraduate nursing students' knowledge of older adult care and their attitudes toward ageism in UNIMAS, as both variables are essential in identifying knowledge gaps and addressing ageist attitudes within nursing education.

5.1 The knowledge of undergraduate nursing students towards older adults' care in UNIMAS.

This study found that undergraduate nursing students in UNIMAS possessed a good level of knowledge concerning the care of older adults. This is a positive outcome and may be attributed to the inclusion of a gerontology nursing course and practicum in the UNIMAS nursing curriculum. The presence of structured learning and hands-on experience likely contributed to students' ability to understand the complex needs of older adults, including the management of chronic conditions, functional impairments, and psychosocial challenges.

This result aligns with previous studies that reported good knowledge levels among nursing students. For example, Faronbi et al. (2017) found that 60% of nursing students in

Nigeria demonstrated satisfactory knowledge of older adult care. Similarly, Kaur et al. (2014) reported that 76.4% of nursing students achieved good scores on a geriatric care knowledge questionnaire. These findings suggest that when students are exposed to relevant content through both theory and practice, their understanding of geriatric care improves significantly.

The presence of a dedicated gerontology module and clinical practicum at UNIMAS may distinguish it from institutions where older adults' care content is integrated into broader courses. This could explain the contrast between the present findings and studies such as those by Mohammed et al. (2019) and Hassan et al. (2021), where 72.8% and 77.8% of students, respectively, showed unsatisfactory knowledge. In both studies, the lack of a specific geriatric course was identified as a limitation that hindered students' understanding of older adults' needs.

Comprehensive gerontological education is particularly important in the context of Malaysia's ageing population. According to the National Council on Ageing (2024), nearly 80% of older adults live with two or more chronic conditions, and around 95% have at least one. These figures stress the importance of nurses being able to recognize and manage conditions such as polypharmacy, dementia, depression, falls, and immobility, all of which are prevalent among older adults. Aishi et al. (2020) emphasized that when gerontology is taught as a separate course with dedicated clinical exposure, it enhances students' readiness and competence. Similarly, Mohamed et al. (2023) found that over 60% of nursing professionals felt that their gerontological education had a significant impact on their preparedness and willingness to care for older adults. Therefore, the positive knowledge outcomes in this study may be a direct result of UNIMAS's educational approach, which combines theoretical instruction with practical experience in caring for older adults. This

supports the idea that a well-structured gerontology course and practicum not only equip students with essential knowledge but also ensure they are better prepared for real-world clinical settings.

In conclusion, the results suggest that the inclusion of both gerontology coursework and practicum in the nursing program at UNIMAS has likely contributed to students' good knowledge of older adult care. This approach serves as a model for other institutions aiming to strengthen gerontological nursing education and better prepare students for the challenges of an ageing society.

5.2 The attitude of undergraduate nursing students in UNIMAS towards older adults.

The findings from this study indicated that undergraduate nursing students at Universiti Malaysia Sarawak (UNIMAS) generally held positive attitudes toward older adults. This outcome aligns with several previous research that also documented favourable views of ageing among nursing students. For example, Ismail et al. (2024) reported that 88.2% of nursing undergraduates at a public university in Kuala Lumpur expressed positive attitudes toward caring for older adults, with attitude scores showing improvement as students advanced through their academic years. Similarly, Yilmaz et al. (2017) found that nursing students in Turkey exhibited more constructive perceptions than those enrolled in an Elderly Care Program, with attitudes becoming increasingly positive over the course of their training.

These findings highlight the important role of education and clinical experience in shaping nursing students' attitudes toward older adults. Educational exposure, particularly through formal gerontology coursework and hands-on practice, has consistently been shown to influence how students view ageing. For example, Ridgway et al. (2018) reported that

while 75% of nursing students initially held moderately positive attitudes, this figure increase to 98% by the end of a three-year program. This underscores the transformative impact of structured learning and practical training on reducing ageist stereotypes and fostering empathy. Positive attitudes are especially critical in gerontological nursing, where respectful communication, reduced bias, and patient-centred care are essential for quality outcomes. As Aishi et al. (2020) argue, attitudes significantly shape how individuals respond to various groups, including older adults, thereby influencing the standard of care. Moreover, Jeyasingam et al. (2023) and Palsgaard et al. (2022) highlighted that age-related biases can result in discriminatory behaviours and lower-quality care, reinforcing the need for targeted educational interventions.

Despite the positive trends observed in this and other studies, not all research findings align. Contrasting evidence has been reported by Mohammed et al. (2019) and Saharuddin and Makhtar (2022), reported that a substantial number of nursing students continued to exhibit negative perceptions toward older adults. In Mohammed et al. (2019) study, 82.8% of students scored negatively on the Ageism Attitude Scale, with factors such as gender and urban residency influencing their views. Similarly, Saharuddin and Makhtar reported that only 9.9% of their participants demonstrated positive attitudes, suggesting that stereotypes and misconceptions about ageing remain prevalent among some student groups.

Adding further weight to these concerns, other studies have identified widespread ageist beliefs and behaviours among nursing students globally. For example, Rababa et al. (2021) found that many students agreed with ageist statements such as “older adults should find friends their own age,” reflecting a lack of awareness and empathy. Frost et al. (2016) also reported that 97.8% of nursing students had engaged in at least one ageist behaviour, underscoring the pervasiveness of ageist attitudes even among future healthcare

professionals. These studies collectively reveal that combating ageism in nursing education is an ongoing global challenge, and not all institutions may be equally effective in addressing it.

However, the positive attitudes identified in the current study suggest that UNIMAS's approach, characterised by structured academic content, practicum exposure, and possibly a more inclusive institutional culture may contribute to reducing ageist perceptions. These outcomes are encouraging, as they not only improve the quality of care for older adults but also help develop a more empathetic and socially responsible nursing workforce. Such results highlight the importance of institutional strategies that prioritise age-inclusive training and mentorship during nursing education.

In conclusion, the findings from this study support the notion that formal gerontology education and clinical exposure are pivotal in countering ageist beliefs and fostering positive, respectful attitudes toward older adults. The results highlight the importance of embedding comprehensive gerontological content within nursing curricula to enhance empathy, dispel age-related stereotypes, and equip students for the complexities of an ageing population. As the global demand for geriatric care continues to grow, the development of compassionate, well-prepared nurses is essential in delivering high-quality, inclusive care to older individuals.

5.3 The relationship between knowledge of older adults' care and ageism attitudes among undergraduate nursing students in UNIMAS.

The present study identified a weak but statistically significant positive correlation between nursing students' knowledge of older adult care and their attitudes toward older adults. This finding suggests that as students' knowledge levels increase, their attitudes also

tend to become more positive, albeit not strongly. While the correlation was weak, its statistical significance indicates that the relationship is unlikely due to chance, and that knowledge may still play a meaningful role in shaping students' perceptions of older adults.

This result aligns partially with the findings of Mohammed and Abdel Aziz (2019), who also reported a positive relationship between knowledge and attitudes. Their study suggested that an increased understanding of older adults and their care needs could help reduce ageist perceptions among nursing students. Specifically, students with higher knowledge scores tended to hold more favourable attitudes, reinforcing the idea that targeted educational content can influence students' perspectives on ageing.

However, the low strength of the correlation observed in the current study highlights the complexity of this relationship. This aligns with the findings of Faronbi et al. (2017), who reported no significant association between knowledge and attitudes. Their research suggests that increased knowledge does not always translate into more positive views. This points to the influence of other factors, such as cultural values, personal experiences, family dynamics, and societal norms, which may shape students' attitudes independently of their academic exposure.

The weak correlation found in this study therefore underscores a critical insight: education, while important, may not be sufficient on its own to overcome ageist attitudes. This notion echoes the conclusions drawn by Faronbi et al. (2017), who argued that educational efforts must be complemented by other strategies to truly shift deep-seated beliefs. These may include reflective learning, intergenerational engagement, mentorship opportunities involving older adults, and awareness initiatives aimed at challenging stereotypes and promoting a more inclusive view of ageing.

In conclusion, the statistically significant but weak correlation between knowledge and attitudes suggests a nuanced and multifactorial relationship. While enhancing knowledge remains a valuable component in promoting positive attitudes, it should be embedded within a broader educational framework that also prioritises empathy-building, critical reflection, and real-world experiences with older adults. These findings highlight the need for a comprehensive and integrative approach in nursing education, one that not only imparts knowledge but also cultivates respect, understanding, and meaningful connections with the ageing population.

5.4 Implications

The results of this study carry significant implications for nursing education, clinical practice, and the formulation of healthcare policies. First, the demonstration of good knowledge and positive attitudes among undergraduate nursing students at UNIMAS reflects the effectiveness of the current gerontology curriculum and practicum in preparing students for older adult care. This suggests that incorporating dedicated gerontology content, along with hands-on clinical exposure, is essential in developing the competence and empathy needed for nursing students to effectively care for an ageing population.

Second, the weak but significant positive correlation between knowledge and attitudes implies that while increased knowledge may contribute to more favourable attitudes, it is not the sole determinant. This highlights the need for more holistic educational approaches that address emotional, cultural, and societal factors influencing attitudes. Educators must consider integrating reflective learning, intergenerational activities, and value-based discussions into the curriculum to strengthen empathy and reduce ageism in nursing students.

Furthermore, this study underscores the importance of sustaining and enhancing gerontological training to maintain high standards of care for older adults. As Malaysia moves toward becoming an ageing nation, preparing a healthcare workforce that is both knowledgeable and respectful toward older adults is essential for ensuring equitable, compassionate, and age-inclusive care.

5.5 Recommendations

5.5.1 Recommendations for this study

Based on the findings, it is recommended that the existing gerontology curriculum be further enhanced through more interactive and reflective teaching methods, such as simulations, case-based discussions, and intergenerational dialogue activities. These approaches may strengthen students' engagement and promote deeper understanding of the real-life experiences of older adults. It is also advisable to continue offering structured clinical practicum placements in geriatric settings, as these provide essential opportunities for applying knowledge in practice and building meaningful interactions with older patients. In addition, nursing educators should incorporate guided reflection sessions and mentorship programs that allow students to process their clinical experiences, challenge ageist stereotypes, and develop more compassionate attitudes. Regular assessments of students' knowledge and attitudes throughout the academic years should also be implemented to evaluate learning progression and identify gaps that require attention.

5.5.2 Recommendations for future research

Future research should explore other variables that may influence nursing students' attitudes toward older adults beyond knowledge, such as cultural beliefs, family experiences, media influence, or personality traits. Qualitative studies using interviews or focus groups

would provide rich, in-depth insights into the personal and emotional factors that shape students' perceptions of ageing. Longitudinal studies are also recommended to examine how knowledge and attitudes develop over time, especially during the transition from student to practicing nurse. Additionally, comparative studies involving nursing students from different universities or healthcare disciplines may uncover institutional or curricular differences that affect preparedness for geriatric care. Finally, future research could evaluate the effectiveness of specific educational interventions, such as anti-ageism workshops or empathy training, in promoting positive attitudes and reducing ageist behaviours in nursing students.

5.6 Limitation of the study

This study encountered several limitations that should be acknowledged. Firstly, delays in data collection occurred as some students were late in returning the printed, self-distributed questionnaires. Financial constraints also limited the ability to produce and distribute more comprehensive data collection tools. Furthermore, the study was conducted solely in UNIMAS, which may not fully represent the perspectives of nursing students in other institutions or regions of Malaysia. These limitations suggest that the results should be interpreted with caution and point to the need for broader, multi-institutional studies in the future.

5.7 Conclusion

This study assessed the knowledge of older adults' care and its relationship with ageism attitudes among undergraduate nursing students in UNIMAS. The findings revealed that students demonstrated good knowledge and positive attitudes toward older adults. Additionally, a weak but statistically significant positive correlation was found between

knowledge and attitudes, suggesting that increased knowledge may be associated with more favourable perceptions of older adults. These results highlight the importance of maintaining and enhancing gerontology education while also implementing targeted strategies to further strengthen students' attitudes. Continuous curriculum development, structured clinical exposure, and attitudinal interventions remain essential to preparing nursing students for competent and compassionate care of the ageing population.

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APPENDICES

Appendix A: Ethical Approval Application Letter

Pejabat Akademik
Fakulti Perubatan dan Sains Kesihatan
Academic Office
Faculty of Medicine & Health Sciences
☎: 581000 samb 7768
📠: 665152

UNIVERSITI MALAYSIA
SARAWAK
94300 Kota Samarahan

MEMORANDUM

Reference : UNIMAS/NC-21.05/03-03 Jld. 8(160)

To : Noor Syamimi Syazwani Binti Mohd Suffian (80410)
Bachelor of Nursing with Honours
Faculty of Medicine and Health Sciences

From : Dean
Faculty of Medicine and Health Sciences

Date : 05 March 2025

Subject : **Final Year Project - Research Approval: Knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in UNIMAS**

The above matter is referred.

The Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) has granted the **RESEARCH APPROVAL** for this Final Year Project research based on the appraisal by the Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) on 24 February 2025. The Final Year Project research details stated below:

Student Name : Noor Syamimi Syazwani Binti Mohd Suffian

Student ID : 80410

Programme : Bachelor of Nursing with Honours

Research Title : *Knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in UNIMAS*

Supervisor Name : Dr Ong Mei Fong

All records and data are to be kept strictly **CONFIDENTIAL** and can only be used for the purpose of this study. All precautions are to be taken to maintain data confidentiality. Permission from the all relevant heads of departments/units where the study will be carried out must be obtained prior to the study.

Please note that the approval is valid from **February 2025** to **November 2025** only. The reference number for this letter must be stated in all correspondence related to this study to facilitate the process.

Thank you with regards and well wishes.

Yours sincerely,



Professor Dr. Asri bin Said
Dean

c.c : Deputy Dean of Undergraduate
: Head of Nursing Department
: Bachelor of Nursing with Honours
: MDJ4653 Final Year Project 1 Course Coordinator

Appendix B: Cover Letter for Ethical Application

Noor Syamimi Syazwani Binti Mohd Suffian,

Faculty Medicine and Health Sciences,
Universiti Malaysia Sarawak,
94300 Kota Samarahan,
Sarawak.

The Chairman,

Medical Research Ethics Committee,
Faculty Medicine and Health Sciences,
Universiti Malaysia Sarawak,
94300 Kota Samarahan,
Sarawak.

16th December 2024

Professor/Associate Professor/Dr/Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT RESEARCH PROJECT

I am a final-year student pursuing a Bachelor of Nursing with Honours at the Faculty of Medicine and Health Sciences, UNIMAS. I enrolled in MDJ 4653 Final Year Project I, in which the course is coordinated by Madam Shalin Lee Wan Fei. Please find my details as follows:

Full name: Noor Syamimi Syazwani Binti Mohd Suffian

Matrix number: 80410

IC No.: 020823-12-0926

I would like to request for the kind approval from the Faculty of Medicine and Health Sciences Medical Research Ethics Committee to conduct the following study:

Research title: Knowledge of Older Adults' Care and Its Relation to Ageism Attitudes Among Undergraduate Nursing Students in Universiti Malaysia Sarawak (UNIMAS)

Supervisor's name: Dr Ong Mei Fong

Email address: mfong@unimas.my

Supervisor's HP number: 016-9377562

Please find the required documents as appended for your kind consideration and approval.

Thank you.

Yours sincerely,

Noor Syamimi

(Noor Syamimi Syazwani Binti Mohd Suffian)

Appendix C: Participant Information Sheet (PIS)



PARTICIPANT INFORMATION SHEET/ *MAKLUMAT KAJIAN PESERTA*

1. **Title of the study/ *Tajuk kajian*** : **Knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in Universiti Malaysia Sarawak (UNIMAS)**
2. **Main researcher/ *Penyelidik utama*** : **Noor Syamimi Syazwani Binti Mohd Suffian**
3. **Supervisor/ *Penyelia*** : **a) Course coordinator: Shalin Lee Wan Fei
b) Main research supervisor: Dr Ong Mei Fong**
4. **Institution/ *Institut*** : **Department of Nursing
Faculty of Medicine & Health Sciences
Universiti Malaysia Sarawak**
5. **Name of sponsor/ *Nama Penaja*** : **No external funding/ *Tiada penaja luar***

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

(for adult subjects)

6. Introduction:

It is important that you understand why the research is being done and what it will involve. Please take your time to read through and consider this information carefully before you decide if you are willing to participate. Ask the study researcher if anything is unclear or if you would like more information. After you are properly satisfied that you understand this study, and that you wish to participate, you must sign this informed consent form.

Your participation in this study is voluntary. You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data collected from you up to your withdrawal will still be used for the study. Your refusal to participate or withdrawal will not affect any medical or health benefits to which you are otherwise entitled.

This study has been approved by the Medical Research and Ethics Committee of Universiti Malaysia Sarawak (UNIMAS).

7. What is the purpose of the study?

The purpose of this study is to assess the level of knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in UNIMAS. This research is necessary to understand how nursing students' knowledge about older adults' care influences their attitudes toward ageism.

This research will be conducted for duration of 6 months (25/01/2025 till 30/06/2025). The expected number of participants is 170 individuals.

8. What are my responsibilities when taking part in this study?

It is important that you answer all of the questions asked by the researcher honestly and completely which will take about 20-30 minutes of your time.

You will be given a survey form to be answered. This form contains 3 sections which will enquire about socio-demographic data, knowledge of older adults' care, and ageism attitude scale (AAS).

9. What are the potential risks and side effects of being in this study?

Participation in this study will not affect your treatment, and the risk is minimal. You are free to decline to answer any of the questions that you feel uncomfortable with.

10. What are the benefits of being in this study?

There may or may not be any benefits to you. Information obtained from this study will help to provide nursing educators in UNIMAS with information about undergraduate nursing students' attitudes towards ageism and identify improvement strategies. This study's findings

could also assist in developing targeted educational strategies, such as modules focused on gerontology and patient-centered care for older adults, which could be integrated into nursing curricula. By shedding light on the current knowledge and attitudes of nursing students, the findings could contribute to future curriculum adjustments and policy recommendations aimed at fostering a more positive and respectful approach to older adult care. Ultimately, the research could help create a healthcare environment where all individuals, regardless of age, are treated with dignity and respect.

11. Who is funding the research?

This study does not receive any external funding and is fully sponsored by the main study researcher. You will not be paid for participating in this study.

12. Will my medical information be kept private?

All your information obtained in this study will be kept and handled in a confidential manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity will not be revealed without your expressed consent. Individuals involved in this study, qualified monitors and auditors, and governmental or regulatory authorities may inspect the study data, where appropriate and necessary.

13. Who can participate in this study?

The inclusion criteria for this study are undergraduate nursing students who are currently enrolled at UNIMAS from Year 1 to Year 3 and are willing to participate in the study. The exclusion criteria include Year 4 nursing students who are currently enrolled in gerontology classes, nursing students who participated in the pilot study, those unwilling to participate, and post-registration nursing students.

14. Who should I call if I have questions?

If you have any questions or want information about this study, please contact the main researcher, Noor Syamimi Syazwani Binti Mohd Suffian at telephone number 019-6074061 or the supervisor of this study, Dr Ong Mei Fong, who can reach through the email address: mfong@unimas.my.

If you have any questions about your rights as a participant in this study, please contact the Medical Research & Ethics Committee of Universiti Malaysia Sarawak, through email number address: medicalethics@unimas.my.

Appendix D: Informed Consent Form

INFORMED CONSENT FORM

Title of Study: **Knowledge of older adults' care and its relation to ageism attitudes among undergraduate nursing students in Universiti Malaysia Sarawak (UNIMAS).**

By signing below I confirm the following:

- I have been given oral and written information for the above study and have read and understood the information given.
- I have had sufficient time to consider participation in the study and have had the opportunity to ask questions and all my questions have been answered satisfactorily.
- I understand that my participation is voluntary and I can at anytime free withdraw from the study without giving a reason and this will in no way affect my future treatment. I understand the risks and benefits, and I freely give my informed consent to participate under the conditions stated. I understand that I must follow the main researcher's (Noor Syamimi Syazwani Binti Mohd Suffian) instructions related to my participation in the study.
- All personal details will be treated as **STRICTLY CONFIDENTIAL**.
- I will receive a copy of this subject information/informed consent form signed and dated to bring home.

Subject:

Signature:

I/C number:

Name:

Date:

Investigator conducting informed consent:

Signature:

I/C number:

Name:

Date:

Impartial witness:

Signature:

I/C number:

Name:

Date:

Appendix E: Questionnaire

Section A: Socio-demographic data

Please complete the following information.

Fill in the information required. Kindly tick in the box corresponding of the selection.

1. Age: _____ Years Old
2. Gender:
 - ☐ Male
 - ☐ Female
3. Year of study:
 - ☐ Year 1
 - ☐ Year 2
 - ☐ Year 3
 - ☐ Year 4
4. Race:
 - ☐ Malay
 - ☐ Chinese
 - ☐ India
 - ☐ Bumiputera Sarawak
 - ☐ Bumiputera Sabah
 - ☐ Others
5. Religion:
 - ☐ Islam
 - ☐ Christian
 - ☐ Hindu
 - ☐ Buddhist
 - ☐ Others: _____
6. Any family members are working in the healthcare setting?
 - ☐ Yes
 - ☐ No
7. How many family members are living with you? (including yourself)

Section B: Knowledge of older adults' care

Instructions: Please tick (✓) at the appropriate space.

No.	Questions concerning on the knowledge of older adults' care.	Yes	No
1	Is a daily fluid intake of 1500–2000 ml/day recommended for older adults unless contraindicated?		
2	Do cognitive abilities like short-term memory and attention span commonly decline with ageing?		
3	Can balance exercises prevent falls among older adults?		
4	Orientation, memory, attention, language, and recall are tested in older adults using the Folstein Mini-Mental Status Exam.		
5	Is orthostatic hypotension a common health issue among older adults that increases with age?		
6	The basal metabolic rate declines with ageing due to the loss of lean muscle mass.		
7	Health needs and physical examinations of older adults are different from other age group populations.		
8	The Get-Up-and-Go Test is used to assess balance and the risk of falls in older adults.		
9	Older adults with diabetes, heart disease, thyroid, and hypertension are more at risk for adverse effects of herbs.		
10	A person is considered an older adult at the age of 65 or older.		
11	Fish oil and vitamin E are two basic nutrients that help prevent the progression of Alzheimer's disease.		
12	The average recommended caloric intake for older adults is 25-28 Cal/kg/day.		
13	Nursing care for health promotion in older adults is primarily focused on providing a sense of control over health problems.		
14	Care for older adults with altered sensory perception can be provided by reducing environmental noise, speaking louder and more slowly and using nonverbal cues when appropriate.		
15	Urinary continence in older adults can be regained by performing Kegel exercises and following a toileting schedule.		
16	Can strategies like using sensory aids and allowing extra time for communication improve communication with older adults?		
17	When checking the blood pressure of older adults, the nurse needs to know that systolic blood pressure tends to rise with ageing due to the loss of elasticity in the arteries.		
18	Malnutrition, bedsores, and poor hygiene are signs of older adults' neglect.		
19	Walking for 30 minutes, three days per week, is the most recommended exercise for older adults to maintain their health.		

20	Osteoporosis can be prevented among older adults by adequate intake of calcium, regular exercise, and oestrogen replacement therapy for elderly women.		
21	Nurses should teach hypertensive older adult patients on diuretics to encourage fluid intake, consume foods rich in potassium, and closely monitor for dehydration.		
22	Nurses should focus on non-verbal communication skills with older adults suffering from hearing deficits.		
23	Dehydration can be prevented in older adults by assessing skin turgor, mucous membrane and urine output.		
24	Adequate respiratory function can be maintained in older adults by instructing them in deep breathing exercises.		
25	Strategies such as reducing daytime napping, limiting caffeinated beverages, and using relaxation techniques can help promote a healthy sleep pattern for older adults.		
26	The anatomical areas most often affected by pressure sores in older adults are the iliac crest and ischial tuberosities.		
27	Keeping the skin clean and dry, and ensuring that bed linens are wrinkle-free and dry, can help prevent bedsores in older adults.		
28	The score that indicates mild depression in older adults, according to the Geriatric Depression Scale (GDS), is between 5 and 8.		

Section C: Ageism Attitude Scale (AAS)

A	Restricting the life of older adults	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	The external appearance of older adults is repulsive.	1	2	3	4	5
2	Family members should not consider the care of older adults to be an economic burden.	1	2	3	4	5
3	Older adults can't carry bags and packages without help.	1	2	3	4	5
4	It is unnecessary for older adults to buy homes, cars, possessions, or clothes.	1	2	3	4	5
5	Older adults should live in homes for the elderly.	1	2	3	4	5
6	Daily activities of the elderly should be limited to their homes.	1	2	3	4	5

7	Older adults should be paid less than young people in their work lives.	1	2	3	4	5
8	Preference should be given to care for young people over older adults in the hospital.	1	2	3	4	5
9	Elderly people who lose their spouses should not remarry.	1	2	3	4	5

B	Positive ageism	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	Older adults are more tolerant than young people.	1	2	3	4	5
2	Older adults are more compassionate.	1	2	3	4	5
3	When decisions are made in the family, the opinions of the older adults should be considered.	1	2	3	4	5
4	The older adults should be shown importance by the family members with whom they live.	1	2	3	4	5
5	Older adults are more patient than young people.	1	2	3	4	5
6	Young people should learn from the experiences of older adults.	1	2	3	4	5
7	When the family budget is being developed, the opinions of older adults should be sought.	1	2	3	4	5
8	Preference should be given to older adults in places where waiting in line is required.	1	2	3	4	5

C	Negative ageism	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
----------	------------------------	----------------	-------	-----------	----------	-------------------

1	Preference should be given to young people for promotions in work situations.	1	2	3	4	5
2	Preference should be given to young people over older adults when hiring for jobs.	1	2	3	4	5
3	Older adults are not able to adapt to changes like young people.	1	2	3	4	5
4	Older adults are always ill.	1	2	3	4	5
5	Older adults should not go outside on their own.	1	2	3	4	5
6	The basic responsibility of the older adults should be to help their children with tasks such as housework and kitchen chores and care for their grandchildren.	1	2	3	4	5

Appendix F: Permission Obtained from Original Author to Use Questionnaire

Request to Use Questionnaire for Research Study

N

Noor Syamimi Syazwani Binti Mohd Suffian <nsyminisyzwani@gmail.com>
to drsukhpaul

11 Nov 2024, 22:53

Dear Dr Sukhpaul Kaur,

Kindly allow me to introduce myself. I am Noor Syamimi Syazwani binti Mohd Suffian, a final year Bachelor of Nursing Student at the University of Malaysia Sarawak (UNIMAS). I will be conducting a research entitled Knowledge of Older Adults' Care And Its Relation To Ageism Attitudes Among Undergraduate Nursing Students In Universiti Malaysia Sarawak (UNIMAS) for my final year project.

I would like your permission to use your questionnaire in my research study. I plan to utilize the research instrument and adapt its questionnaires in my research study as they are fit to measure my research questions.

I would also appreciate receiving copies of the complete questionnaire of

(1) Knowledge regarding the care of the elderly.

(2) Attitude regarding the care of the elderly.

I would like to use (and reproduce) your research instrument under the following conditions:

- I will use the instrument only for my research study and not sell or use it for other purposes.
- I will include a statement of attribution and copyright on all copies of the instrument. If you have a specific attribution statement you would like me to include, please provide it in your response.

If these are acceptable terms and conditions, please indicate so by replying to me through e-mail nsyminisyzwani@gmail.com

Thanks and regards,

Sincerely,
Noor Syamimi

Request to Use Questionnaire for Research Study

d

drsukhpaul kaur <drsukhpalkaur@gmail.com>
to me

13 Nov 2024, 01:47

Ok you may use it. Kindly cite. Also share the modified version of the tool with me.

All the best
Dr Sukhpaul Kaur

Request to Use Questionnaire for Research Study

N

Noor Syamimi Syazwani Binti Mohd Suffian <nsyminisyzwani@gmail.com>
to drsygufu

Mon, 18 Nov 2024, 20:13

Dear Drsyg,

Kindly allow me to introduce myself. I am Noor Syamimi Syazwani binti Mohd Suffian, a final year Bachelor of Nursing Student at the University of Malaysia Sarawak (UNIMAS). I will be conducting a research entitled Knowledge of Older Adults' Care And Its Relation To Ageism Attitudes Among Undergraduate Nursing Students In Universiti Malaysia Sarawak (UNIMAS) for my final year project.

I would like your permission to use your questionnaire in my research study. I plan to utilize the research instrument and adapt its questionnaires in my research study as they are fit to measure my research questions.

I would also appreciate receiving the copies of the complete questionnaire of your research:

(1) Ageism Attitude Scale Questionnaire

I would like to use (and reproduce) your research instrument under the following conditions:

- I will use the instrument only for my research study and not sell or use it for other purposes.
- I will include a statement of attribution and copyright on all copies of the instrument. If you have a specific attribution statement you would like me to include, please provide it in your response.

If these are acceptable terms and conditions, please indicate so by replying to me through e-mail: nsyminisyzwani@gmail.com

Thanks and regards,

Sincerely,
Noor Syamimi

About AAS

D

Dryga Ulla <drygaulla@gmail.com>
to me

Wed, 14 Nov 2024, 06:30

Dear Syzwani,

I'm sorry for replying to your email late. I couldn't return due to my health problems. I am enclosing information on how to score and interpret AAS responses. You can also find the article of the scale attached.

Best regards,

2 attachments

Instrument AAS

scale additional

Appendix G: Gantt Chart

ACTIVITY	YEAR									
	2024				2025					
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE
Determination of research title										
Literature review										
Meeting with supervisor										
Submission of proposal defense slides										
Ethical approval										
Submission of the first draft										
FYP 1: Submission of research proposal										
Pilot study										
Data collection										
Data analysis										
Writing up report										
Submit final draft										
FYP 2: Submission of final report										

Appendix H: Budget Planning

No	Items	Quantity	Price Per Unit	Price
1	SPSS Version 27 Software	1	RM 5	RM 5
2	Printing and Binding the Final Year Project	102 Pages	Printing: RM 0.20 Binding: RM 10	RM 30.40
3	Photocopy the questionnaire booklet	6 pages x 162	RM 0.10	RM 97.20
4	Internet Data Plan	9 Months	RM 50	RM 450
5	Envelopes	4	RM 1.20	RM 4.80
Total				RM 587.40

Appendix I: Turnitin Similarity Index Report

FYP II 80410			
ORIGINALITY REPORT			
17%	11%	11%	6%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
PRIMARY SOURCES			
1	brieflands.com Internet Source	1%	
2	Abudu-Birresborn, Diana. "Nursing Students' Self-Efficacy to Care for Older Adults in Acute Care Settings in Ghana: A Mixed Method Study", University of Toronto (Canada) Publication	1%	
3	Baker, Tammy L.. "The Experiences of ADN Faculty in Preparing First-Year Nursing Students to Care for Older Adult Patients.", Capella University Publication	1%	
4	Submitted to Universiti Malaysia Sarawak Student Paper	1%	
5	stmportal.net Internet Source	1%	
6	myscholar.umk.edu.my Internet Source	1%	
7	www.hilarispublisher.com Internet Source	1%	
8	hdl.handle.net Internet Source	<1%	
9	Nadia Sedri, Mohammad Ali Zakeri, Mohammadreza Zare Zardiny, Asghar Tavan. "Evaluation of Nurses' Knowledge and Attitudes towards Older Adults and	<1%	

Associated Factors", The Open Nursing
Journal, 2022

Publication

10	VEFİKULUÇAY YILMAZ, Duygu and TERZİOĞLU, Füsün. "Üniversite öğrencilerinde yaşlı ayrımcılığı tutum ölçeğinin geliştirilmesi ve psikometrik değerlendirmesi", TUBITAK, 2011. Publication	<1 %
11	ecommons.aku.edu Internet Source	<1 %
12	Winnie Lai-Sheung Cheng. "Effects of Senior Simulation Suit Programme on nursing students' attitudes towards older adults: A randomized controlled trial", Nurse Education Today, 2020 Publication	<1 %
13	dsc.duq.edu Internet Source	<1 %
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37	uwispace.sta.uwi.edu Internet Source	<1 %
38	Helen Venables, Yvonne Wells, Deirdre Fetherstonhaugh, Heather Wallace. "Factors associated with nursing students' attitudes toward older people: a scoping review", Gerontology & Geriatrics Education, 2021 Publication	<1 %
39	Rosa Darling, Merdiye Sendir, Serdar Atav, Funda Buyukyilmaz. "Undergraduate nursing students and the elderly: An assessment of attitudes in a Turkish university", Gerontology & Geriatrics Education, 2017 Publication	<1 %
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46	Maliheh Khalvati, Ramezan Ali Ghaderi Sanavi, Parviz Marouzi, Vahid Rashedi et al. "Psychometric Properties of the Persian Version of the Ageism Scale", Journal of Kermanshah University of Medical Sciences, 2023 Publication	<1 %
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49	www.gecekitapligi.com Internet Source	<1 %
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54	Gah, Ling Kah. "Strategies to Minimize the Risk of Cost Overrun in Construction Building Project During Pre-Contract Stage", University of Malaya (Malaysia) Publication	<1 %
55	erepository.uonbi.ac.ke Internet Source	<1 %
56	link.springer.com Internet Source	<1 %
57	Submitted to Baze University Student Paper	<1 %
58	Masako Yamanaka, Yuko Tomari, Kumi Suzuki, Yoko Minamiguchi et al. "Perceptions of Cancer Education among Middle and High School Teachers and Factors Related to These Perceptions", School Health, 2024 Publication	<1 %
59	Tilana, Lukhanyo. "The Impact of Business Incubation in Shaping the Entrepreneurial Mindset Among Incubatees", University of the Witwatersrand, Johannesburg (South Africa), 2025 Publication	<1 %
60	ir.must.ac.ug Internet Source	<1 %
61	1library.net Internet Source	<1 %
62	Pei-Lun Hsieh, Ching-Min Chen. "Nursing Competence in Geriatric/Long Term Care Curriculum Development for Baccalaureate Nursing Programs: A Systematic Review", Journal of Professional Nursing, 2018 Publication	<1 %

63	Rahmani, N.. "Application of perineometer in the assessment of pelvic floor muscle strength and endurance: A reliability study", Journal of Bodywork & Movement Therapies, 201104 Publication	<1 %
64	Submitted to Universiti Putra Malaysia Student Paper	<1 %
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71	repository.tukenya.ac.ke Internet Source	<1 %
72	www.acarindex.com Internet Source	<1 %
73	www.wjahr.com Internet Source	<1 %
74	David T. Cowan, Joanne M. Fitzpatrick, Julia D. Roberts, Alison E. While. "MEASURING THE KNOWLEDGE AND ATTITUDES OF HEALTH CARE STAFF TOWARD OLDER PEOPLE: SENSITIVITY OF MEASUREMENT	<1 %

INSTRUMENTS", Educational Gerontology,
2004

Publication

- 75 Rashmi Devkota, Sherry Dahlke, Mary T. Fox, Sandra Davidson et al. "E-learning modules to enhance student nurses' perceptions of older people: a single group pre-post quasi-experimental study", International Journal of Nursing Education Scholarship, 2023

Publication

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Publication

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