ATTITUDE AND NEEDS TOWARD GERIATRIC CARE AMONG PRIMARY CARE DOCTORS IN MALAYSIA: A MIXED METHODS STUDY

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by

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LIST OF MANUSCRIPTS

Two manuscripts and three presentations had been prepared and presented that aligned with the study's objectives. The first manuscript had been under review in a WOS and Scopus-indexed journal. Presentations were done at national-level conferences.

First manuscript

(Corresponding to the first and second objectives)

Primary Care Doctors' Attitudes Towards Geriatric Care in Malaysia: An Online Survey

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Second manuscript

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Optimizing Malaysia Geriatric Primary Health Care: An Exploration of Primary Care Doctors' Needs

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Presented as a poster presentation at the National Ageing Conference 2024, 23 – 24 October 2024 (Appendix I)

Symposium presentation at the Malaysian Ageing Research Network (MARN) September Meeting on 12 September 2024 (Appendix I)

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LIST OF ABBREVIATIONS

WHO	World Health Organization
UN	United Nation
PCD	Primary Care Doctor
FMS	Family Medicine Specialist
HCW	Health Care Worker
FMS	Family Medicine Specialist
MO	Medical Officer
PHC	Primary Health Care
IDI	In-depth Interview
MOH	Ministry of Health, Malaysia
UCLA-GAS	University of California Los Angeles-Geriatric Attitude Scale
TPB	Theory of Planned Behaviour
MMC	Malaysian Medical Council
MMA	Malaysia Medical Association
MPCN	Malaysia Primary Care Network
PI	Principal Investigator

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ABSTRAK

SIKAP DAN KEPERLUAN DOKTOR KESIHATAN PRIMER TERHADAP PEJAGAAN KESIHATAN WARGA EMAS DI MALAYSIA: KAJIAN KAEDAH CAMPURAN

Latar Belakang: Doktor kesihatan primer memainkan peranan yang penting dalam masyarakat yang semakin menua. Mereka mesti mempunyai sikap yang sesuai untuk memberikan penjagaan kesihatan yang berkesan kepada warga emas. Keperluan mereka dalam memberikan penjagaan yang berkesan kepada warga emas juga perlu diberikan perhatian agar mereka dapat menyediakan penjagaan yang berkualiti tinggi kepada warga emas. Oleh itu, kajian in bertujuan untuk menentukan sikap doktor kesihatan primer serta faktor-faktor berkaitan dan meneroka keperluan mereka dalam penjagaan kesihatan warga emas.

Kaedah: Ini adalah kajian kaedah campuran konvergen yang dijalankan pada Disember 2022 hingga November 2024. Kaedah kuantitatif adalah kajian keratan lintang yang melibatkan 328 doktor kesihatan primer di Malaysia dan menggunakan kaedah persampelan mudah. Manakala kaedah kualitatif melibatkan temubual mendalam terhadap 11 doktor kesihatan primer. Kajian ini merangkumi doktor yang telah bekerja sekurang-kurangnya enam bulan di kesihatan primer. Doktor yang tidak merawat warga emas dikecualikan daripada kajian ini. Kajian kuantitatif menggunakan soal selidik *University of California Los Angeles - Geriatric Attitude Scale* secara dalam talian. Analisa regresi mudah dan berganda digunakan untuk menentukan faktor-faktor yang berkaitan. Kajian kualitatif menggunakan temubual

mendalam dan peserta dipilih dalam kalangan mereka yang terlibat dalam kajian quantitatif. Temubual ditanskripsi dan dianalisa menggunakan Analisa tematik.

Keputusan: Sikap doktor kesihatan primer di Malaysia terhadap penjagaan kesihatan warga emas secara am nya adalah positif. Kelayakkan sebagai pakar perubatan keluarga (Adj. B 0.25; 95% CI: 0.13, 0.37, $p \leq 0.001$) dan mereka yang berpersepsi menerima sokongan pentadbiran dalam perlaksanaan perkhidmatan penjagaan kesihatan warga emas (Adj. B 0.15; 95% CI: 0.06, 0.24, $p = 0.001$) adalah faktor-faktor yang terkait dengan sikap positif. Dapatan dari kajian qualitative menunjukkan, tiga tema utama telah dikenalpasti berkaitan dengan keperluan doktor kesihatan primer dalam penjagaan kesihatan warga emas: "keperluan pendidikan dan kesedaran", "keperluan pentadbiran dan operasi" dan " keperluan sistem sokongan".

Kesimpulan: Kajian ini menekankan keperluan untuk doktor kesihatan primer mendapatkan latihan berkala dan khusus dalam penjagaan kesihatan warga emas serta menekankan kepentingan sokongan pentadbiran untuk memberikan perkhidmatan penjagaan kesihatan warga emas yang menyeluruh. Sokongan daripada komuniti juga penting termasuk kerjasama antara agensi dalam memberikan perkhidmatan penjagaan kepada warga emas. Strategi secara bersasar boleh digunakan untuk memupuk persekitaran yang menyokong dan memahami keperluan doktor kesihatan primer, yang mana akan memberi kesan positif terhadap sikap mereka dan memenuhi keperluan mereka dalam memberikan perkhidmatan kesihatan warga emas yang menyeluruh.

Kata Kunci: Sikap, Keperluan, Doktor, Kesihatan Primer, Warga Emas, Malaysia

ABSTRACT

ATTITUDE AND NEEDS TOWARD GERIATRIC CARE AMONG PRIMARY CARE DOCTORS IN MALAYSIA: A MIXED METHOD STUDY

Background: Primary care doctors (PCD) are pivotal in an ageing society. They must possess the appropriate attitudes in offering effective care to the older persons. Their need to deliver effective geriatric care must also be addressed to ensure they are equipped to provide high-quality care to the older persons. Therefore, this study sought to determine the attitudes of PCDs toward geriatric care and its associated factors and to explore the needs of PCDs in delivering geriatric care in Malaysia.

Method: This convergent mixed-method study was conducted between December 2022 and November 2024. The quantitative method was a cross-sectional of 328 PCDs in Malaysia and used convenience sampling. While the qualitative method was an in-depth interview of 11 PCDs. This study included doctors who had worked for at least six months in a primary care setting. Doctors who did not attend to older persons were excluded from the study. For the quantitative method, the University of California Los Angeles - Geriatric Attitude Scale questionnaire was administered online. Simple and multiple linear regression analyses were used to determine associated factors. For the qualitative method, in-depth interviews were conducted among participants recruited from the quantitative study. The interviews were transcribed and analysed using thematic analysis.

Result: Primary Care Doctors' attitudes towards geriatric care in Malaysia were positive. Being a family medicine specialist (Adj. B 0.25; 95% CI: 0.13, 0.37, $p \leq$ 0.001) and those who perceived to have administrative support for geriatric care

services (Adj. B 0.15; 95% CI: 0.06, 0.24, p = 0.001) were associated with a positive attitude. From the qualitative study, three major themes were found regarding PCDs' needs in geriatric care: “education and awareness needs,” “administrative and operational needs,” and “support system needs.”

Conclusion: This study emphasizes the need for PCDs to have periodic and specialized training in geriatric care and highlights the administrative support necessary to deliver geriatric care. The community must also fully support them in delivering comprehensive geriatric care, including interagency collaboration in delivering the care service. Targeted strategies can be used to cultivate a supportive and understanding environment for PCDs, which, in turn, will positively impact their attitudes and fulfil their needs toward delivering comprehensive geriatric care.

Keywords: Attitude, Needs, Doctor, Primary Health Care, Geriatric, Malaysia

CHAPTER 1

INTRODUCTION

1.1 Background

1.1.1 Population Ageing

Population ageing is defined as the median age of a country or region rising and shifting in the country’s distribution towards older persons. This can be due to many factors, such as the increase in the population’s mean and median age, a decline in the proportion of children, and a rise in the proportion of older person (Garrouste, 2014). The World Health Organization (WHO) defines an ageing population as individuals aged 65 years and older, comprising 7.0% or more of the total population.

At the same time, the United Nations (UN) considers those aged 60 and above (Mohammad & Abbas, 2012). Their differences were because of the distinctive purpose of WHO and the UN. WHO definition focuses on the health status and functional dependence of older persons where the health risks associated with ageing become more prominent (Orimo *et al.*, 2006; Singh & Bajorek, 2014; Rudnicka *et al.*, 2020). UN, on the other hand, as an international organization that foresees various global issues from economic to human rights, adopts the definition as they recognize the diversity in the older person's needs that can be adopted globally, taking into consideration older person's capabilities, lifestyle, experience, and preferences that were shaped by their age, gender, health, income, education, ethnicity, and other factors (United Nations, 2018). In this context, Malaysia adopted the UN definition and recognition of an aged society when 15.0% of its population is aged 60 years and older (Bahagian Pembangunan Kesihatan Keluarga, 2008).

Globally, the ratio of older persons in most countries is increasing, with estimates suggesting that by 2050, 1 in 5 individuals will be aged 60 and above (World Health Organization, 2019). In Malaysia, this demographic shift is also evident as the percentage of older persons increased from 5.0% in 2010 to 7.2% in 2020, with projections indicating a rise to 14.5% by 2040 (Department of Statistic Malaysia, 2022). This shift is largely attributed to improved life expectancy due to the success of public health policies in promoting disease prevention, increasing access to the healthcare system, and declining birth rates (Martinez *et al.*, 2021). However, these changes pose unique challenges for the healthcare system, particularly in managing the complex health needs of older persons.

Generally, the ageing population has various issues that can impact the nation, especially in the health sector. These ageing-associated issues include psychological,

wounds and injuries, difficulties in mobility, undernutrition, poor cognitive function, communication problems, and falls and accidents. A focus on education and training for healthcare workers (HCW) and those involved in caring for older persons about early diagnosis of undernutrition, cognitive impairment, and other diseases is thus essential. Equally important are government support and welfare provision, technology and tools to assist an older person and their careers, communication and mobility solutions, and social contributions from an early age to support healthy ageing and the sustainability of old age program (Maresova *et al.*, 2019). Consequently, ageing and its consequences can be minimized if appropriate solutions are developed and implemented accordingly.

1.1.2 Health for the Older Person

According to the WHO, primary health care (PHC) is a broader whole-of-society approach with the components of 1) primary care and essential public health functions as a core of integrated health services, 2) multisectoral policy and action, and 3) empowered people and communities (World Health Organization, 2004). This shows that PHC is pivotal in managing the health aspect of the population, especially for the older person. Hence, in 2004, the WHO launched 'Age-Friendly Primary Health Care', which aims to strengthen the PHC. This plan involves all sectors working towards improving the health status of older persons. This initiative outlined three main principles in achieving the 'Age-Friendly Primary Health Care' which are (1) information, education, communication, and training in clinical geriatrics and approaches to patient education; (2) the health care management system, i.e., adapting procedures to the unique needs of older individuals, such as elderly-friendly registration, and supporting continuity of care through updated medical records at each clinic visit; and (3) the physical environment, i.e., clean and comfortable centers that

apply universal design principles as much as possible (Tavares *et al.*, 2021; World Health Organization, 2004).

The Ministry of Health (MOH) Malaysia has responded to the estimated increase in the older population since 1996 by initiating 'Older Person Health Services' as part of the expanded family health scope program to help older persons achieve optimum health through comprehensive health services. Subsequently, 'Older Person Friendly Healthcare Services' was also introduced to give older persons health services that are aged-sensitive, equal, accessible, non-discriminatory, continuity, and comprehensive (Bahagian Pembangunan Kesihatan Keluarga, 2023). In addition, in the 'Eleventh Malaysia Plan 2016 – 2020: Anchoring Growth on People', strategy B5 of chapter three stated to enhance living for the older person by improving a supportive environment for the older person and promoting active ageing, where the government emphasizes the supportive environment for example the older person friendly environment and services, social protection for the older person to improve their quality of life in the form of monetary and non-monetary assistance and promoting active ageing (Economic Planning Unit, 2015). This policy is more diverse and stresses community involvement and intersectoral collaboration. The latest document updated in 2023 regarding the action plan for the older person was the 'Action Plan for Older Person Services 2023-2030,' to better respond to, and align all national policies related to the Malaysian ageing population. This action plan aims to promote healthy and active ageing among older persons by empowering older persons, families, and communities with knowledge, skills, and an environment that supports these concepts and provides optimal healthcare services at every level of healthcare services. ICOPE (Integrated Care Plan for Older Persons) was introduced and included as the main action plan to assess older person's health status

and provide services to older persons (Bahagian Pembangunan Kesihatan Keluarga, 2023).

1.1.3 Primary Care Doctors' attitude towards Geriatric Care and their needs in delivering the service

Attitude is an intention to act, position, feel, or emotion toward a fact (Chaiklin, 2011). Attitude is important as it can ensure care quality and sustainability of best practices, which is important in the healthcare sector (Price, 2015). Hence, a positive attitude among the primary care doctor (PCD) towards geriatric care is vital to ensure comprehensive geriatric care delivery and sustainability. Globally and locally, it was found that the overall attitude of HCWs was positive (Chua & Soiza, 2009; Doherty, Mitchell & O'Neill, 2011; Jack *et al.*, 2017; Elbi *et al.*, 2020).

The evidence has shown that proper training on managing interaction with an older person, exposure and training in diseases specific to ageing can enrich the clinical encounter (Goeldlin *et al.*, 2014; Tufan *et al.*, 2015). This may result in a positive attitude towards the older person. Other factors influencing positive attitude include administrative support, experience gained from years of practice as a doctor, and exposure to the older person in the community and/or home (Lee *et al.*, 2005; Alamri & Xiao, 2017; Elbi *et al.*, 2020; Shaiful *et al.*, 2021).

As for need, it is a measurable discrepancy between the present state and the desirable situation. It can also be used to measure a program's effectiveness by evaluating the response of those involved (Beatty, 1981; Watkins & Kavale, 2014). It is vital that the need of PCD toward geriatric care is identified and addressed, as it can ensure that the effectiveness of the program caters to the older person aside from ensuring the PCD can provide the best care they can give.

In order to provide geriatric care service, the needs of the PCDs must be met. In line with this, the evidence suggests that comprehensive training in managing interactions with older persons and specialized training in age-related diseases can significantly enhance the quality of these clinical encounters (Goeldlin *et al.*, 2014; Tufan *et al.*, 2015). In order to achieve the range of training needs, special provision specifically allocated for training of the PCDs must be made. This must be met with the necessary support for such training. These are crucial in achieving more effective care (Bahagian Pembangunan Kesihatan Keluarga, 2008; Mahmoud Aljurf *et al.*, 2022).

1.1.4 Malaysian Primary Healthcare and the Older Person

Primary health care in Malaysia is provided by public-run health clinics and private practice doctors that run the private clinics. The public health clinic was divided into seven types depending on its catchment population and daily average number of patients, indicating the level of services it provides. The difference between each type was the service scale provided, where all levels of health clinics had to provide services from outpatient departments, accident and emergency, maternal and child health, and pharmacy. On the other hand, dental, rehabilitation, X-ray, laboratory, and pharmacy services were provided by public health clinic type 1-3 (Bahagian Pembangunan Kesihatan Keluarga, 2019). Most doctors who provide health services in health clinics in Malaysia are non-specialist doctors under the supervision of a family medicine specialist (FMS), with the FMS distribution in the public health sector at 73.7% compared to 26.3% in the private sector (Ministry of Health, 2020).

In Malaysia, the average older person's visit to healthcare was 5.9 times a year in 2013 and increased to 6.1 times a year in 2014. Almost 75.0% of the older persons were registered with health clinics. They were also seen accessing public healthcare

facilities more frequently than private healthcare services, with 83.0% of older persons admitted to public hospitals and 67.0% visiting as an outpatient at public facilities (Yunus *et al.*, 2017, 2021). Older persons visiting primary care clinics often face complex health issues, including age-related limitations such as hearing, vision, physical and cognitive impairments, and geriatric syndrome, a unique common health condition among older persons (Freedman *et al.*, 2020).

Healthcare services should address these unique problems and have competent HCWs to provide geriatric care. There are four common risk factors for geriatric syndrome: older age, baseline cognitive function, baseline functional impairment, and impaired mobility, which can be identified by HCWs using adaptive assessment tools to initiate early and prompt intervention to improve functions and quality of life (Inouye *et al.*, 2007; Jahan, 2018). The challenges are usually because of the compounded social issues like living alone and poor social support, requiring PCDs to address their problems comprehensively (Freedman *et al.*, 2020; Huh *et al.*, 2023). These issues create a complex challenge for PCDs during clinical encounters where, unfortunately, many healthcare systems are designed to address acute conditions rather than chronic conditions associated with ageing (Jahan, 2018; Solimeo *et al.*, 2020).

1.2 Problem Statements

Malaysia is predicted to become an aged society by 2040, with PHC being one of the sectors most impacted. However, due to the slow expansion of geriatric services in Malaysia, healthcare needs for this population may not be met in time (Tan *et al.*, 2018). National Healthcare Establishment and Workforce Statistics (Primary Care) (2012) estimate that only 2% of FMS have completed training in community geriatrics (Hwong & Sivasampu, 2014). This gap creates a critical challenge, as PCDs are often the first point of contact for older persons yet may lack the necessary training to

provide comprehensive geriatric care. Addressing these issues is essential to ensure timely and effective healthcare delivery to older persons in Malaysia.

The Ministry of Health Malaysia 'Action Plan for Older Person Services 2023-2030' emphasize implementing the ICOPE framework in geriatric primary healthcare. To execute this action plan effectively, it is essential first to assess primary care doctors' attitudes towards geriatric care and identify the specific needs they must address to ensure successful implementation. This approach aligns with the action plan's objective to empower older persons' health, ensuring they remain healthy within the community through prevention and self-care programmes alongside comprehensive, integrated healthcare services based on a 'patient-centred' approach. The fragmentation of public and private healthcare services may also impact geriatric care. The public healthcare system in Malaysia appears to be more organized. Specific programs that provide services to older persons, guidelines for care for older persons, and basic physiotherapy handling are being introduced. In contrast, little is known about the private healthcare sector, which may be related to the service provider's interest. Given the limitations of the older person and the rapid turnover of patients, the right approach is essential to ensuring quality health services.

This study focuses on PCDs because they serve as the primary gateway for older persons seeking medical attention in Malaysia. Given their central role, understanding their attitudes towards geriatric care and identifying their needs is crucial for improving the quality of care provided to this growing older population.

1.3 Rationale Of the Study

Given the importance of PHC in managing the health of an ageing population, the right approach is essential to ensure quality healthcare services. PCDs must have the right attitude and fulfil their needs when providing geriatric care, which positively

and directly impacts the service. Hence, this study utilizes a mixed-method approach where the attitude is measured quantitatively, its associated factors are identified, and combined with an in-depth interview (IDI) that captures the experiences and needs of PCDs regarding geriatric care. This approach not only allows for the measurement of attitude scores but also provides a deeper understanding of the needs faced by PCDs in delivering geriatric care. For example, while quantitative data may reveal the factor associated with positive attitudes, the qualitative interview can explore how the need for geriatric care shaped these attitudes. Findings from this study can directly inform national policy by identifying specific training needs for PCDs and proposing improvements in PHC settings.

1.4 Research Questions

1.4.1 What is the attitude of primary care doctors towards geriatric care?

1.4.2 What factors are associated with attitudes among primary care doctors towards geriatric care?

1.4.3 What are the needs of primary care doctors in providing geriatric care?

1.5 Objectives

1.5.1 General Objectives

To determine the attitudes and needs of primary care doctors toward geriatric care in Malaysia.

1.5.2 Specific Objectives

1.5.2 (a) To determine the attitude score of primary care doctors toward geriatric care.

1.5.2 (b) To determine the factors associated with attitudes towards geriatric care among primary care doctors.

1.5.2 (c) To explore the needs of primary care doctors when providing geriatric care to the older person.

1.6 Research Hypothesis

There is a significant association between primary care doctors' sociodemographic and work-related factors and their positive attitude towards geriatric care in Malaysia.

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CHAPTER 2

LITERATURE REVIEW

This chapter reviews the existing literature regarding the attitude of PCD toward geriatric care and their needs in providing such care. It also aims to identify the factors associated with doctors' attitudes and explore their needs. It was conducted mainly through Scopus, PubMed, and Google Scholar search engines. The keywords used were attitude, needs, "primary care doctor*," "primary care physician*," "primary healthcare physician*," "general practitioner," "family medicine," "geriatric care," "older person care" and "aged care." It was hoped that this review would highlight the gaps this mixed-method study seeks to address.

2.1 Attitude

Attitude is how we react to a certain idea, object, person, or situation, which is formed through experience (Badran, 1995; Price, 2015; Alsharar *et al.*, 2017). There are three major components of attitude: affective, which refers to emotions and feelings; cognitive, which refers to beliefs and thoughts; and evaluation, which refers to past experiences regarding the stimuli (Chaiklin, 2011; Alsharar *et al.*, 2017). For example, when a PCD develops favourable feelings when treating an older person, this refers to the affective component. The PCD then believed that how he engaged and managed the older person made the treatment easier, and the cooperation he received from the older person was positive, related to the cognitive part of attitude. Finally, the PCD evaluates all the components, and sees that with a favourable feeling and by enjoying it, he can give better treatment and service to the older person, and in return, the older person follows his advice and better cooperates with the treatment and care given, hence the positive attitude develop as part of the evaluation component.

Attitude also can be understood from the psychological or sociological context. In psychology, it is seen as behaviour. In contrast, in sociological context, it is seen as an intention to act, the mental position toward a fact or state about a fact or state or feeling or emotion (Chaiklin, 2011). Of this, in the context of healthcare, attitude is important as it ensures care quality, establishes collaboration with patients and carers, and promotes multidisciplinary and multi-agency services, sustaining best practices through the services because it can affect one's behaviour and intention to act, which highly praise in the healthcare sector that is people-oriented (Price, 2015).

The attitude of HCWs toward older persons was generally positive. Studies conducted in Singapore and Malaysia using the University of California Los Angeles-Geriatric Attitude Scale (UCLA-GAS) questionnaire found that the overall total mean score was >3, which indicates a positive attitude towards the older person (Chua & Soiza, 2009; Jack *et al.*, 2017). Globally, studies among primary HCWs also revealed high proportions of positive attitudes toward older persons. A study in Ireland found that almost 97.0% of the participants have a positive attitude toward older person (Doherty *et al.*, 2011). In Türkiye, 55.0% of PCDs have a positive attitude towards older persons (Elbi *et al.*, 2020). The most recent study of HCWs' attitudes toward geriatric patients during the COVID-19 pandemic also yielded positive results, with 75.0% of study participants expressing no ageism in their care (Altın & Buran, 2022). However, some studies found doctors' attitudes towards geriatric care at the other end of the spectrum. It was found that their attitude is either indifferent or negative towards older patients and geriatric care (Daniel *et al.*, 2021; Al Ghailani *et al.*, 2024; Amoateng *et al.*, 2024).

2.2 Factors Associated with Attitude

2.2.1 Sociodemographic and Work Factor

Many factors were found to be associated with the attitude of HCWs towards older persons and geriatric care. It was found that gender is associated with attitudes towards older persons and older patients. A systematic review found that females had more positive attitudes compared to males (Samra *et al.*, 2017). On the contrary, there were studies that indicated that males have a more positive attitude toward older persons compared to females (Elbi *et al.*, 2020; Altın & Buran, 2022), with Elbi *et al*. (2020) physicians older than 40 years older reported of a mean score 13.35 and p-value of 0.003 using UCLA-GAS questionnaire. In addition, older HCWs were found to have more positive attitudes than younger HCWs. Elbi *et al.* (2020) reported a $r = 0.15$, $p = 0.00$. However, other studies that look into age and race, found that there were no significant associations with attitude (Samra et al., 2017).

Apart from that, education and training were also found to positively correlate with attitudes toward older persons and their care (Alamri & Xiao, 2017). Specifically, regarding the knowledge of older persons and ageism, it was found that those with higher knowledge scores were associated with more positive attitudes ($\beta = -0.23$) (Palsgaard *et al.*, 2022). On the other hand, there was research that found that variables related to education, such as previous education and clinical experience in geriatric medicine, had no association with attitude (Samra *et al.*, 2017). Interestingly, there was a study that found that education alone does not change one's attitude or behaviour towards care (Corace & Garber, 2014). Studies found that having comprehensive knowledge and training does. In this sense, having geriatric clinical skill training with the knowledge given demonstrates a positive attitude change toward the older person and care rather than knowledge alone (Goeldlin *et al.*, 2014; Ajmi & Aase, 2021;

Castellano-Rioja *et al.*, 2022). Castellano-Rioja *et al.* (2022) reported F = 101.24; $p < 0.001$; $\eta 2p = 0.754$. Goeldlin *et al.* (2014) reported that a median difference in the knowledge score was 2 points (95% CI 0 – 2, P <0.001) between those receiving knowledge alone and those receiving knowledge and training.

It was found that doctors' clinical experience was associated with the quality of the healthcare service given (Ajmi & Aase, 2021). The HCWs' personal value of older persons also influences their attitude towards older persons. Those with high intrinsic motivation, such as being a doctor to help others, appear to be associated with a positive attitude (Samra *et al.*, 2017). Other than that, those who live with an older person or in an older person community have a more positive attitude towards older person. Previous work and caregiving experience of older persons also affected HCWs' attitudes, with positive interaction yielding positive attitudes (Adams *et al.*, 2002; Alamri & Xiao, 2017; Solimeo *et al.*, 2020; He & Tang, 2021).

There were studies that stress the quality of contact or relationship with an older person that may be related to attitude rather than frequency of contact (Samra *et al.*, 2017). As expected, those who have an interest in geriatric medicine or prefer to work with an older person had a more positive attitude (Samra *et al.*, 2017; Palsgaard *et al.*, 2022).

2.2.2 Structural Factor

Administrative support is where the administration of that organization ensures their support in planning, organizing, implementing, monitoring, and evaluating programs. They must ensure that financial stability is addressed, and that human resources and physical facilities are available. Perceived administrative support is also the main reason for one's attitude and behaviour toward an organization (Özdemir, 2020; Alcantara G & Chao NJ, 2022). Özdemir (2020) reported of r = 0.39, p < 0.001.

According to a study by Antoniou *et al. (2016)*, HCWs who receive sufficient support are more satisfied with their jobs with r = 0.77 and p<0.001. It shows that the administrative burden also worsens healthcare delivery for the older person, as care for the older patient requires a lot of paperwork and referrals (Adams *et al.*, 2002).

The design of the health facility also has to adopt a universal design to address the needs of older patients. It also has to be in accordance with the service provided specifically for the older patient (Carr *et al.*, 2013; Fulmer *et al.*, 2021; Snyder, 2021). The physical working conditions and adopting universal design are associated with a positive attitude of HCWs toward older patients and geriatric care (Mansouri Arani *et al.*, 2017; Grasmo *et al.*, 2021). Mansouri Arani *et al.* reported of $t = 11.72$, $r = 0.28$, $P < 0.001$. However, there was a study that found that attitude does not relate to working conditions, χ 2 (1) = 0.755, p > 0.05 (Mwaura *et al.*, 2023).

2.2.3 Older Person Factor

There were primary HCWs found that it was difficult to provide care for older persons due to their medical complexities and chronicity in older persons. For example, their vulnerability to adverse events because of the treatment they received. It was exacerbated by the challenge of balancing proper care and diagnosing older patients with the burden of time constraints, communication issues, and ethical dilemmas in treating older patients. The difficulties of dealing with older patients' relatives who interfere with the treatment plan and the older patients' preferred treatment also place a strain on the HCWs. Sometimes, the caregiver's criticism and priorities do not align with the care needed for older patients, which could lead to undertreatment (Adams *et al.*, 2002; Jeyasingam *et al.*, 2023).

It is worth noting that some HCWs found working with older persons worth it. They found that older patients treated them with greater respect as professionals than younger patients. To some, older persons are more than chronological age. The factors of comorbidities, dependency, loss of functions, vulnerability, cognition, and caregiver must be considered alongside ageing (Samra *et al.*, 2015; Palsgaard *et al.*, 2022; Jeyasingam *et al.*, 2023).

2.3 Needs and Geriatric Care service delivery

The need can be defined as the measurable discrepancy between the present state and the desirable situation, as asserted by the need's owner (Beatty, 1981). A program's effectiveness can also be measured by evaluating its responsiveness to the needs of those involved (Watkins & Kavale, 2014). For example, the effectiveness of geriatric primary care can be measured by exploring the needs of PCDs. In this context, needs are used to find gaps in certain conditions; needs are between current and desired conditions (Watkins & Kavale, 2014).

In 2004, the WHO developed an "Active Ageing: Towards Age-Friendly Primary Health Care" document to address the importance of PHC for preventive care, early intervention, and chronic disease management for the older population, to sensitize and educate PHC about the specific needs of older person by increasing their awareness. To develop an age-friendly PHC, it has to meet the PHC objectives and age-friendly principles. The PHC objectives are that the PHC should be available and accessible to the population, providing a comprehensive, quality, efficient, non-discriminatory and gender and age responsive. At the same time, the age-friendly principles are information, education, and training, including HCW training in geriatrics, adapted health care management systems in supporting older persons and

continuity of care, and a physical environment that applies the principles of Universal Design (World Health Organization, 2008).

2.3.1 Sociodemographic and Work Needs

Education and training are important aspects of needs. HCWs should receive regular continuing medical education (CME) in caring for older persons. It was noted that there was a shortage of competent HCWs with the necessary knowledge and training in geriatric care (He & Tang, 2021). Hence, it highlights the importance of the government or the stakeholders in developing sufficient expertise in geriatric care and providing them with the necessary training and support to provide such care. Other than that, it is also important that geriatric medicine be firmly embedded in all curricula for health service providers with the development of evidence-based care management programs for older persons (He & Tang, 2021). FMS also plays an important role in this aspect, where, as a resident specialist in a PHC, FMS can organize teaching and training sessions for the medical officers (MO) on current medical development (Chew *et al.*, 2014).

One of the important parts of geriatric care is the availability of clinical practice guidelines (CPG) that HCWs can assess and refer to in their daily practice. There must be specific, patient-centred guidelines catered to older populations. Moreover, the CPG must also consider the older population's special needs beyond clinics' medical care, including their social environment and interests. The CPG must be balanced between evidence, cost, policy, and the older person's morbidity burden and interest (Martin *et al.*, 2024). PCDs also have to be versed in screening for older patients. PCDs are needed to screen older patients during clinic visits, and they should be individualized based on the presence of comorbidities, life expectancy, and functional status (Sazlina, 2015). This highlights the importance of CPG.

2.3.2 Structural Needs

All levels of healthcare must also actively promote preventive, curative, promotional, and rehabilitative care for the older person. Moreover, the traditional barriers presented by the roles and specifications of primary and secondary care must be removed so that all providers can collaborate to provide seamless service for older persons (He & Tang, 2021). This can also prevent avoidable admission for older persons due to inadequate integration and reduced mortality rate associated with continuity of care (COC) among older patients (He & Tang, 2021; Dyer *et al.*, 2022). This stresses the importance of an integrated health system to improve overall service and care for older persons (de Carvalho *et al.*, 2017). PCDs also address the issue of discharge summaries from secondary or tertiary centers, where they were seldom received. Hence, there is a need for a coordinated referral mechanism to cure and care for older persons. The policy needs to address the principle of social care in the healthcare system and break down the silos (He & Tang, 2021).

Health awareness is one of the important parts of public health intervention. There was also the need to increase health awareness among the HCWs, the older population, and their caregiver of the older person and their care. It is important that they were all educated on ageing-related changes as education was associated with knowledge of healthy lifestyles and better care given (Alali *et al.*, 2023). Caregivers often take responsibility for caring for the older person's daily activities, medical care, and decision-making (Flaherty & Bartels, 2019). Engaging with the community through community education is also the key to successful community-based geriatric support (Ssensamba *et al.*, 2022). Support from local leaders is also important and needed, especially in areas that lack financial, technical, and logistic capacity (Ssensamba *et al.*, 2022).

In order to deliver a comprehensive geriatric care service, the health service must be committed towards it with adequate provision of resources. The PHC must be sufficiently funded, staffed, and equipped with the equipment to run a comprehensive geriatric care service without hindrance. The facilities must also be universally designed and cater to all needs, including older patients (Aljurf M *et al.*, 2022). An integrated system must be developed between the health sector and welfare body to streamline financial aid for the older person so that it can be simpler and more focused on helping older person. Interagency collaboration can vastly benefit older persons' care, where resources can be utilized and shared to optimize their care (Kanne *et al.*, 2023).

2.4 Theoretical Framework

The theory of planned behaviour (TPB) is one of the theories that can be used to explain one's attitude and needs. The core factor in TPB is one's intention to perform a given behaviour. It then depends on three constructs that can be related to each other: attitude toward the behaviour, subjective norm, and perceived behavioural control (Ajzen, 1991, 2020). Attitude toward behaviour, termed behavioural belief, is one's probability of performing a certain behaviour based on one's knowledge of experience, which produces either positive or negative attitudes toward the behaviour. Subjective norm is the perceived social pressure to engage or not engage in a behaviour. It is an expectation that an individual or group approves or disapproves of performing the behaviour. Perceived behavioural control is belief in certain factors that can facilitate or hinder them in performing the behaviour. It can be in terms of skills, time, money, administrative support, etc. (Zhang, 2018; Ajzen, 2020). TPB can be used to predict one attitude and needs toward certain things, such as geriatric care and older persons, if all conditions are met, for example, if the PCD believes that his effort in making the

clinic older person-friendly and received positive responses from the older person. It was then supported and seen by the higher management, which gave him enough resources to make the clinic's older person-friendly. This move makes the PCD feel that his effort was supported and that the steps in making his clinic older person-friendly are more rewarding. Hence, a positive attitude and behaviour were honed.

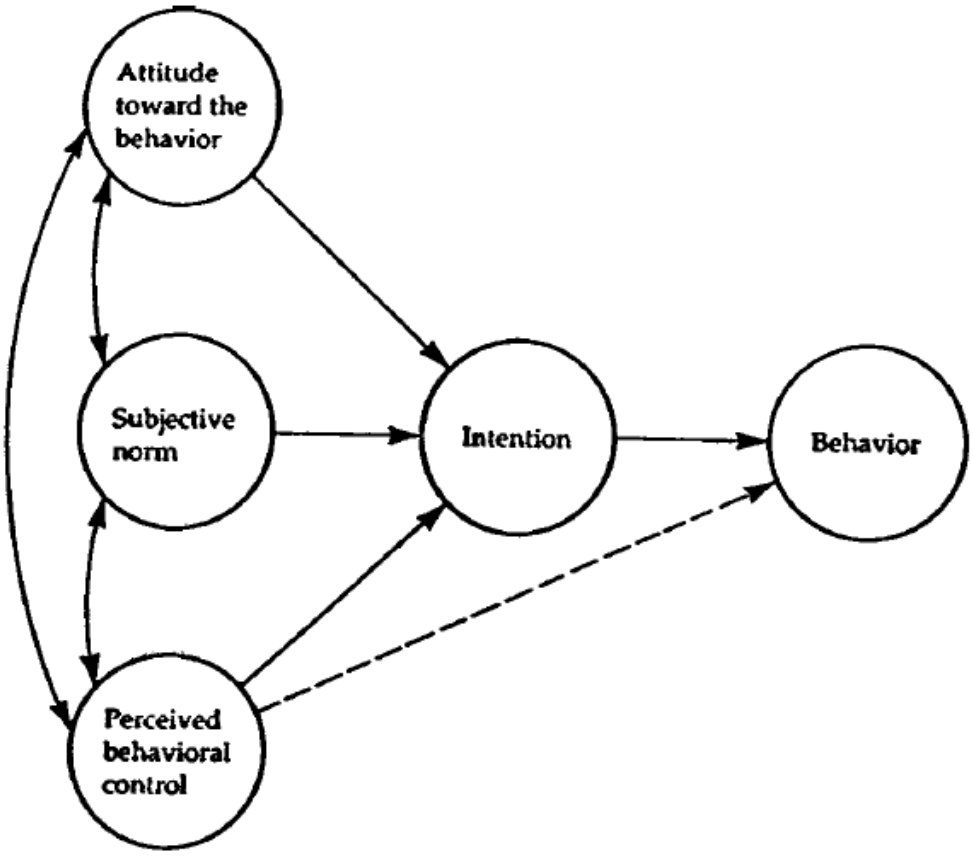
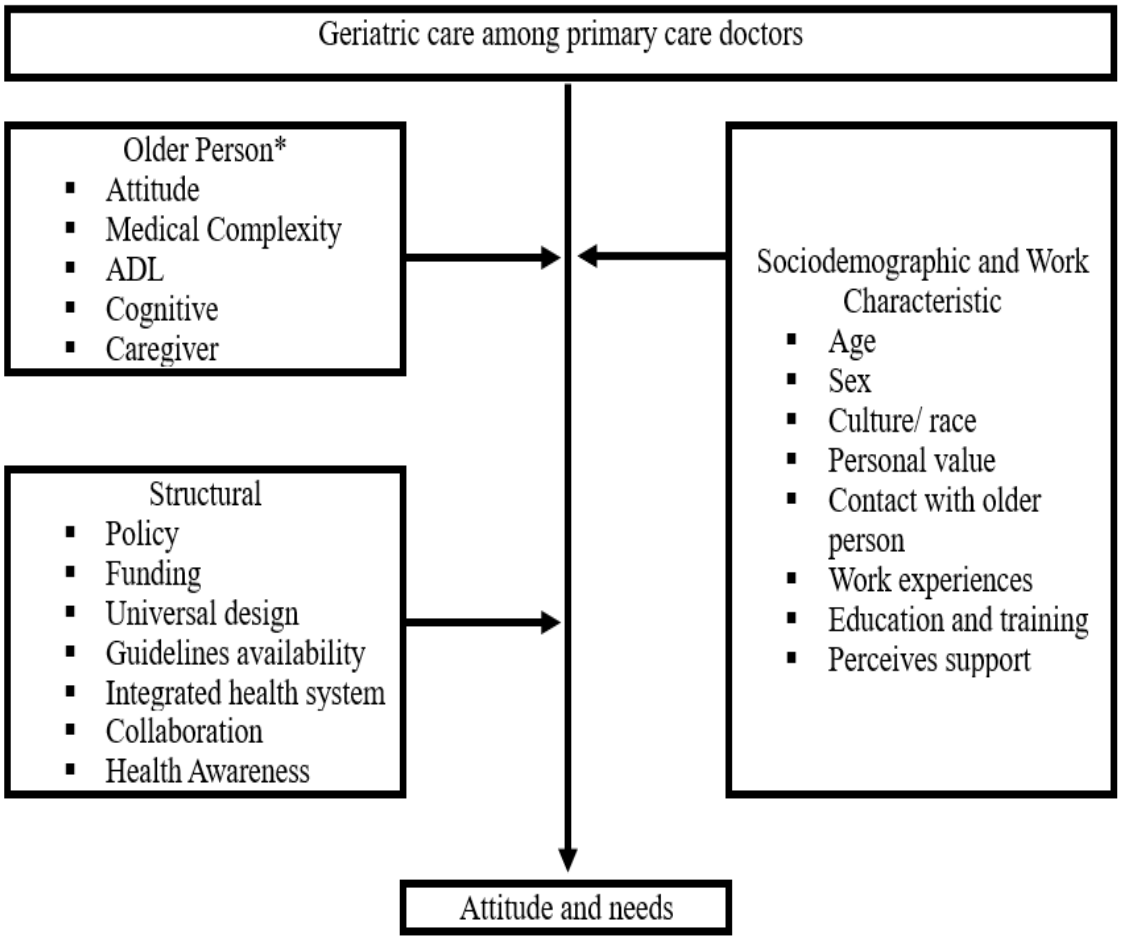


Figure 2.1: Theory of planned behaviour (Source: Adapted from Ajzen (1991))

2.5 Conceptual framework

The concept framework for this study is illustrated in Figure 2.2 below. Three determinants, older persons, sociodemographic and work characteristics, and structural determinants were identified that influenced PCDs' attitudes and needs towards geriatric care.



*Not studied in this research

Figure 2.2: Conceptual framework

CHAPTER 3

METHODOLOGY

3.1 Study Design

This was a mixed method convergence study design where the quantitative study was equal in weight to the qualitative study (Clark *et al.*, 2007). It is where the investigators gather and assess the data, combine the results, and make conclusions using both qualitative and quantitative within a single study (Tashakkori and Creswell, 2007). HCWs' attitude was measured using the University of California Los Angeles – Geriatric Attitude Scale (UCLA-GAS) questionnaire. At the same time, their needs were explored using the qualitative approach of IDI. The rationale for choosing this design was the unavailability of tools to measure the health system context-specific needs of service providers in delivering geriatric careThe results from the quantitative and qualitative methods were integrated during the data analysis and data interpretation to provide a comprehensive understanding of the issues being investigated (Dawadi *et al.*, 2021). More importantly, this design will provide depth, breadth and richness in understanding the attitude and needs of primary care doctors towards geriatric care in Malaysia.

3.2 Study Location

Malaysia consists of 13 states: Johor, Kedah, Kelantan, Melaka, Negeri Sembilan, Pahang, Perak, Perlis, Pulau Pinang, Sabah, Sarawak, Selangor, and Terengganu, and 1 federal territory: Kuala Lumpur, Putrajaya, and Labuan.

3.3 Study Population

The reference and source populations were the PCD in Malaysia. The sampling frame was the PCDs in Malaysia who registered with the Malaysia Medical Council (MMC) and fulfilled the inclusion and exclusion criteria.

3.4 Study Period

This study was conducted from December 2022 to November 2024 over a 24-month period.

3.5 Quantitative Study

3.5.1 Research Design

A cross-sectional study design was used in the quantitative part of this research.

3.5.2 Subject Criteria

3.5.2(a) Inclusion Criteria

The inclusion criteria were a doctor who had worked for at least six months in a primary care setting.

3.5.2(b) Exclusion Criteria

The exclusion criteria were a PCD with a job scope that does not require them to attend to an older person, for example, those working in Mother and Child Health Clinic, and a general practitioner who operates based on a specific speciality that does not come in contact with the older person such as paediatric clinic and obstetrics care clinic.

3.5.3 Sample Size Estimation

In addressing objective 1, which was to determine the attitude score of primary care doctors toward geriatric care, the sample size calculation shown in Table 3.1 using one mean formula:

$$n = \left(\frac{Z_{\alpha/2} * \sigma}{d} \right)^2$$

where σ is the population standard deviation (SD) based on previous literature. d is the precision of the estimate, and Z_a is the normal deviation that reflects type I error, which is usually 1.96 for $\alpha = 0.05$ (95% CI).

Table 3.1: Sample size calculation to determine the attitude score of primary care doctors toward geriatric care

Num.	Standard deviation (σ)	$Z_{\alpha/2}$	D	Total	+20%	References
1	0.34	0.05	0.1	44	55	(Jack *et al.*, 2017)
2	0.41	0.05	0.1	65	81	(Chua & Soiza, 2009)

In addressing objective 2, which was to determine the factors associated with primary care doctors' attitudes toward geriatric care, the sample size calculation shown in Table 3.2 uses PS Power and Sample Size software of an independent T-test design comparing two means.